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Digital Radio in Canada: From DAB to Multi-Platform Approaches.

For the panel
Platforms for Digital Radio – Competition and Complementarity
Respondent: Professor Alan G. Stavitsky, Ph.D.
Presented at the 52nd Convention of the Broadcast Education Association (BEA),
Las Vegas , Nevada, April 18-21, 2007

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ABSTRACT

This paper examines the position of digital radio in Canada. It examines the Canadian experience of digital radio development from its introduction in 1995 to the present and asks whether the approach adopted and the lessons learned provide useful models for application elsewhere. Three main strands form the background to digital radio's current stage of development: firstly, the introduction and early support for Digital Audio Broadcasting or (DAB) in the mid 1990s; secondly, the response of the radio industry to the internet and new media as complementary to traditional radio broadcasting provision; and thirdly, the more recent experience of the introduction of satellite radio in Canada. The focus for this particular paper's analysis is the revised digital radio policy issued by the Canadian Radio-Television and Telecommunications Commission (CRTC) in December 2006, replacing the earlier transitional digital radio policy of 1995, and seeking to implement a multi-platform framework in an increasingly complex technological environment. The paper assesses initial response to the new digital radio policy and examines some of the potential scenarios for the future environment of radio. The research is informed by policy analysis, interviews and expert opinions with leading members of the Canadian broadcasting profession.

Digital technologies and the future of radio. Lessons from the Canadian experience.

Introduction

In December 2006, the Canadian Radio-Television and Telecommunications Commission (CRTC) issued its review of Digital Radio Policy. This replaced the transitional digital radio policy of 1995, and sought to implement a framework designed to support multi-platform digital radio broadcasting in an increasingly complex technological environment for the medium. Canada was a pioneer of what can be called the first generation of digital radio broadcasting and through the 1990s pursued a policy based on the Eureka-147 or Digital Audio Broadcasting (DAB) standard as the replacement technology for AM and FM analog broadcasting. Ten years on, digital radio has entered a new phase in which the future of the medium and its distribution is a much more complicated affair. Instead of a relatively straightforward transition from analog to digital radio broadcasting, there is now a wide selection of both competing alternative and complementary technological options for digital audio delivery. As discussed in another paper for this panel (ala-Fossi et al, 2007), radio can be seen to be either facing the danger of fragmentation or in fact surviving by infiltrating into new platforms and becoming more polymorphic. This paper examines the case of digital radio in Canada, traces the background to its current regulatory approach and assesses some of the possible scenarios for the future environment for Canadian digital radio.

Background

Broadcasting in Canada is a large and profitable system comprising public and privately-funded radio and television services in English, French and third languages at national, regional and local level. According to the Canadian Radio-Television and Telecommunications Commission (CRTC) which regulates the sector, there are over 600 television services in English and French, and well over 1200 over the air radio

services.[1] Radio accounts for 15% of total advertising revenue and in 2005 earned in excess of $1.3 billion, representing a 54% increase in the period from 1997. This exceeded the overall media advertising revenue of 45% in the same period and during which television's advertising revenue increased by 43%. Within English-speaking Canada, the national public broadcaster, CBC, operates two main national networks and some 50 regional stations. CBC radio operates on a commercial free basis and is directly funded by the federal government. It had in 2005-6 approximately a 12% national audience share.[2] The private commercial sector comprises 169 AM and 318 FM stations consolidated among five major corporations many of whom have interests across different media industries in Canada (radio, music, television, newspapers, publishing, telecommunications). Private commercial radio in 2004 had an 81% national share of radio listening with annual revenues in excess of 1.2 billion CDN$.[3]

Despite its strong economic performance, radio in Canada, as elsewhere, shows some evidence of a medium in decline. According to the CRTC, overall weekly listening levels have decreased by approximately one hour and twenty-five minutes from 1999 to 2005 with the most noticeable decrease in the teen demographics and for adults aged from 18 to 34. While, in general, total average weekly hours listened has remained relatively stable since 1997, AM radio has in particular declined in total hours tuned with 22% of total hours listened, some of which has been recuperated by FM with 72% of listening.[4]

The Broadcasting Act of 1991 is the legislative foundation defining the obligations and operating environment for Canadian broadcasting. It seeks to ensure that the broadcasting system 'enriches and strengthens the cultural political, social and

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[1] Canadian Radio-Television and Telecommunications Commission, *Broadcasting Policy Monitoring Report 2006.* Available: http://www.crtc.gc.ca/eng/publications/reports/PolicyMonitoring/2006/bpmr2006.pdf Accessed: 24 March 2007.

[2] Canadian Broadcasting Corporation *Annual Report 2005-6.* Available: http://www.cbc.radio-canada.ca/annualreports/index.shtml, 31 March 2007.

[3] CRTC *Broadcasting Policy Monitoring Report 2006*

[4] Ibid.

economic fabric of Canada'.[5] The Broadcasting Act stipulates that the broadcasting sector should be Canadian owned and controlled, and includes provisions regarding Canadian content in programming and production. It encourages the development of Canadian expression, and the use of Canadian talent and creative resources. There is also a specific emphasis on reflecting Canada's cultural diversity and states that programming and employment opportunities should serve the needs and interests of all Canadians, and reflect their various circumstances.

A cornerstone of the Broadcasting Act is the protection of Canadian content ('CanCon') in broadcasting. A system of quotas is used to regulate the quantity of Canadian programming on radio and television and determines any cultural artifact's 'Canadian-ness' using a points system based on the number of Canadians involved in its production. For television, public licensees are required to devote not less than 60 per cent, and private broadcasters not less than 50 per cent of evening time programming to Canadian content. In its 1998 Commercial Radio Policy, the CRTC increased the Canadian content requirements for AM and FM radio broadcasting from 30 to 35 per cent. New media broadcasting and content distributed via the Internet in Canada are exempt from the content quota requirements of the Broadcasting Act following a determination by the CRTC in 1999 that websites or internet-delivered content did not fall under its jurisdiction or within the scope of the Broadcasting Act.[6]

A central issue for broadcasters and for government at the present time is the appropriateness of the regulatory regime in the current technological environment where there is greatly increased consumer choice and a proliferation of distribution technologies for audio-visual content that do not come under its direct jurisdiction. Consequently, a period of major legislative review and reform is currently underway both within the specific terms of regulation and provision for digital radio under the terms of the Review of Commercial Radio Policy[7] and under a broader review of the

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[5] The Broadcasting Act, 1991. Available: http://www.crtc.gc.ca/ENG/LEGAL/BROAD.HTM, 21 February 2006.

[6] Canadian Radio-Television and Telecommunications Commission. *Broadcasting Public Notice CRTC 1999-84 (New Media)*. Available: http://www.crtc.gc.ca/archive/eng/Notices/1999/PB99-84.htm, 26 December 2005.

[7] Canadian Radio-Television and Telecommunications Commission. *Broadcasting Notice of Public Hearing CRTC 2006-1* 'Review of the Commercial Radio Policy', Ottawa, 13 January 2006. Available: http://www.crtc.gc.ca/archive/ENG/Hearings/2006/n2006-1.htm

the cultural aims and aspirations of the Broadcasting Act in an environment dominated by convergence between technologies and distribution platforms.[8]

The Transitional Policy for Digital Radio

Canada was an early supporter and adopter of digital radio and in a North American context led the field in the development and testing of digital radio transmission during the 1990s (O'Neill 2007).[9] A Task Force was established in 1992 to report on the technical and regulatory issues required for the introduction of digital radio. With full industry support, comprising public and private broadcasters and representatives of the Department of Communications, the Task Force recommended adoption of the Eureka-147 DAB system (see Chouinard et al, 1994). A formal consortium, Digital Radio Research Inc. (DRRI), (later Digital Radio Roll Out Inc.), was established as an implementation group and in 1994 Industry Canada formally adopted DAB as the standard for digital broadcasting in Canada and allocated 40MHz of spectrum in the L-band range (1452-1492 MHz) for new broadcast services.

Digital radio policy as formulated in Canada at this time was based on the premise that digital radio broadcasting and the Eureka-147 standard would be a replacement technology for existing AM and FM radio services. There was little capacity left for FM development, and AM, with its inferior sound quality, could in one transitional move be upgraded to a much superior system. Consequently, spectrum was allocated in the digital radio band to each existing AM and FM radio undertaking to ensure a smooth transition. At the same time, it was noted, that digital radio had the potential to increase the diversity of programming services available to the public and as result digital radio policy dictated that 'existing radio services should have priority access, but not exclusive access, to the digital radio band' (CRTC Public Notice CRTC 1995-95). It was recognised that digital radio broadcasting was still at an early experimental stage and that complex and important issues relating to the development of digital

[8] Canadian Radio-Television and Telecommunications Commission. *The Future Environment Facing the Canadian Broadcasting System* - a report prepared pursuant to section 15 of the *Broadcasting Act* 14 December 2006.
Available: http://www.crtc.gc.ca/ENG/publications/reports/broadcast/rep061214.htm

[9] Earlier research (O'Neill 2007) provides a more detailed account of Canada's support for the Eureka-147 DAB platform during the 1990s.

radio technology and the structure of the digital radio industry in the long term needed to be resolved. Approaches to implementation would therefore have to be open-ended.

The relevant policy, *A Policy To Govern The Introduction Of Digital Radio* (CRTC Public Notice CRTC 1995-184), subsequently referred to as the 'transitional digital policy', was published in 1995 and mapped out the process by which radio would migrate to a digital platform. While no timescales were indicated, a two-staged process was proposed whereby, firstly, the Commission would license digital radio undertakings on a transitional and experimental basis. Later, a public process would be initiated to consider all aspects of digital radio broadcasting in the longer term. The policy involved granting licences to all incumbent operators who wished to use digital facilities to provide a simulcast of their existing services, licences which would remain in effect until a long-term digital radio policy was developed. Licence holders would have some opportunity during the transitional period to develop separate programming for their digital services, limited to 14 hours per week. Applications for new licences or for additional services would only be considered on a case by case basis and subject to the Commission's policy of supporting the existing radio market.

The first stage of the implementation for digital radio was explicitly a short term measure to ensure that existing radio interests were facilitated in rolling out digital services as quickly as possible in order to maintain their leading market position. A number of difficult issues remained which the 1995 transitional policy could not address and outstanding questions included:

a) how long existing AM and FM stations should be given to convert to digital technology before their digital allocations are offered to other parties?
b) what uses could be made of the AM and FM bands as they become vacated?
c) how and under what circumstances new services would be introduced?
d) what technical standards should be established to ensure that digital radio service provided high quality programming while also being ensured a reasonable amount of capacity to transmit ancillary data?
e) what types of regulations would be appropriate for digital radio services that originate programming?
f) the extent to which stations should be allowed to expand from their current coverage areas due to characteristics of the digital service contour, and how to

deal with any impact such expansion may have on competition between existing services.

Nothwithstanding these difficulties, digital radio broadcasting in its early phase was supported by the industry in part fearing that the medium could be swiftly overtaken by rival digital service providers if it did not adapt to the new environment (Parnis 2000). Within a short period, there were 57 stations broadcasting in DAB, reaching 35 per cent of the population, some 10 million listeners in Toronto, Montreal, Windsor, and Vancouver, leading the Canadian Association of Broadcasters to claim Canada's emergence as a world leader in digital radio (Cavanagh, 2002: 30). For a period, with support from General Motors for in-car installations and falling prices for receivers, it appeared that Canada might join the small number of countries in which digital radio broadcasting was proving to be a success story.

Failure of DAB and the Transitional Policy

Despite the many positive early indications, DAB in the ten year period from 1995 to 2005 clearly did not live up to expectations or develop as the mass consumer technology as originally expected.

The consumer response to DAB in Canada was particularly poor. There was poor awareness of the service. There were difficulties with the supply of receiver equipment and lower cost receivers. Once they were available, they performed poorly adding further difficulties to any potential increase in supply of receiver equipment. The much-heralded enhanced features of the digital radio listening experience proved to be unattainable or below expectations. The assumption that the promise of enhanced, CD-like audio quality would be the unique selling feature of the new technology proved unfounded in nearly all markets and especially so in Canada. It was also the case that many of the promised additional services did not arrive either with most stations simply offering simulcasts of their analog services. Despite initial enthusiasm for the possibilities of data services, this was a feature that never really developed. Similarly, the promised General Motors support for DAB did not materialize and the only option available for DAB in-car listening was an after-market

installation of a new receiver which proved unpopular, adding to the low profile of DAB in the marketplace.

Industry support for digital radio also waned once the transitional approach failed to produce results. The adoption of IBOC, the proprietary in-band, on-channel approach, in the United States meant that Canada and the United States had quite different approaches to digital radio broadcasting (FCC, 2002) leading to a growing unease among industry members in Canada about the wisdom of their DAB policy. In spite of the fact that the Eureka-147 DAB approach was acknowledged to be technically superior, many industry executives came to accept that successful implementation of IBOC in the United States would present a new scenario for considering its suitability for Canada.

The core assumption of the transitional policy was that DAB would be a *replacement* technology for analog AM and FM transmission. This approach was determined by the industry itself and had its origins in the desire to improve the quality of AM broadcasting which continues to be an important feature of the Canadian broadcast landscape. Industry representatives were also concerned that unless the digital transition was managed on the basis of a replacement of the existing transmission network, a licensing round for L-Band spectrum would be likely to bring new entrants into the industry, thereby challenging existing interests. In a not dissimilar situation to the United States where incumbents based their entire strategy on preventing any new competition and, for this reason, adopted a system that worked within the existing waveband, the Canadian strategy was based on the assumption that a rapid transition would take place and that all existing broadcasters would migrate to the digital domain.

This transitional regime, in effect, continued indefinitely and not until 2006 was a longer term strategy for digital transition considered. The restrictions placed on experimental licences remained in effect during this period, preventing the development of new programming services and limiting additional content to alpha-numeric text. Few, if any, new entrants were licensed and the lack of any permanent licensing structure meant a lack of interest on the part of investors in developing new digital services on the DAB platform.

Multi-platform Broadcasting

At the same time as DAB was being developed and proposed as a potential replacement technology for analog AM and FM broadcasting, other significant technology developments, including internet protocol or IP-based distribution as well as satellite, were presenting both opportunities and threats to the traditional broadcast model.

For the CBC, its participation in DAB was but one aspect of a broader new media strategy designed to position it as a significant player on a national level and to ensure its continuing relevance and public support in the digital age through a commitment to publishing across a variety of new media platforms and maintaining a high profile presence on the Internet (see O'Neill 2006).

CBC had outlined as one of the key goals in 1998: 'to create a critical mass of content and services to ensure that Canadians can never be relegated to a back corner of the web'.[10] In pursuing its objective to be the primary source of Canadian news and culture on the web, CBC pursued a new media strategy which incorporated commitments to serve audiences across all platforms; to respond to the demand for increased choice, in particular for speciality and niche interest channels via radio, television and the web; to use web presence to leverage the CBC's position as the main repository of Canadian audio-visual culture; and to support technology innovation and innovative new media content.

CBC's track record in adapting to the new media environment is a strong one. Beginning with experimental sites in 1993, CBC launched its *CBC.ca* and Radio-Canada.ca home pages in 1995 and was the first broadcaster in Canada to offer live audio streaming on the Internet. This was quickly followed by the addition of sites for all major aspects of the CBC service including CBC Online News, CBC4kids and dedicated sites for its television and radio channels. There was also an early commitment to new delivery platforms with support for Digital Audio Broadcasting (DAB) since 1999, SMS text news alerts since 2001, interactive TV and video on

[10] Perrin Beatty, 'New Media, New CBC' Speech To the Canadian Radio-Television and Telecommunications Commission' 1998. Available: http://www.cbc.radio-canada.ca/speeches/19981124.shtml, 26 December 2005.

demand since 2003. More recently, CBC's support for legal music downloads, its pay audio *Galaxy* service, and podcasting won it acclaim as one of the first public broadcasters in the world to develop a successful model for harnessing new modes of audio delivery.[11] The aim of being available on all relevant and contemporary distribution platforms more recently was also used to justify CBC's participation in the Sirius Canada consortium for satellite subscription radio launched in December 2005. A review of the Broadcasting Act in 2003 singled out CBC's new media activities for particular praise, recognizing the new landscape required broadcasters to develop cross platform strategies by which their online content supplemented their radio and television activities with a recommendation that 'the Broadcasting Act be amended to recognize the value new media services as a complementary element of the CBC's overall programming strategy'. [12]

The introduction of satellite subscription radio to Canada in 2005 likewise added an important new dimension to the digital radio broadcasting landscape. Following its launch in the United States in 2002, both XM and Sirius platforms were introduced in Canada to prevent a 'grey market' developing through unlicensed access to the service. Fearing the negative impact on the domestic radio market if left unchecked , the CRTC approved the services of Sirius Radio Canada, in partnership with the CBC and Standard Radio Inc, and Canadian Satellite Radio, incorporating the XM satellite service. A third application from CHUM Ltd. for a terrestrial digital subscription service based on a DAB platform, was also approved but has not subsequently launched. Revised content regulations were approved to facilitate the vastly increased specialty choices offered on the satellite platform.

The entry of both XM and Sirius into Canada was a major disruptive event for the domestic radio market generally, undermining Canada's own digital radio strategy and extending the frontiers of competition for incumbent broadcasters.[13] An appeal of

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[11] BBC and CBC both launched podcasting pilots in late 2004, greatly enhancing the podcasting as a distribution method. See Annalee Newitz (2005) 'Adam Curry Wants to Make You an iPod Radio Star', *Wired* 13, no. 3, March 2005.

[12] *Our Cultural Sovereignty: The Second Century of Canadian Broadcasting* (Ottawa: Standing Committee on Canadian Heritage 2003), p.218.

[13] Friends of Canadian Broadcasting (2005) Petition-CRTC-2005-246.2005-247. Available: http://friends.ca/, 21 February 2006.

the licensing decision by CHUM and Astral Media Inc., complained that their business case had been seriously undermined by the favourable conditions offered to the satellite applicants. In addition, the broadcasting watchdog and lobbying group, Friends of Canadian Broadcasting along with a group of arts and cultural organisations, petitioned the government, claiming that the decision was in breach of the Broadcasting Act in allowing a service with 90 per cent American content and effectively owned by US interests. An effective lobbying campaign made the issue a political cause célèbre and nearly succeeded in having the decision overturned in late August 2005. However, following a compromise by which the satellite licensees voluntarily increased the number of Canadian stations by 20 per cent and increased their French language content, the decision was finally upheld by the federal government in September 2005. While supporters claimed the decision was inevitable, arguing that overturning it 'would have been like saying no to the Internet',[14] critics were bitterly disappointed, arguing that it marked the beginning of the end for content regulation and would inevitably lead to calls for a loosening of terrestrial radio content requirements so that the radio industry would be able to compete. The industry representative body, the Canadian Association of Broadcasters, petitioned for a delay of the scheduled CRTC review of commercial radio due to the uncertainty in the market following the introduction of subscription satellite radio and at least one leading industry figure has called for the abandonment of all restrictions on the domestic market, claiming 'The genie is out of the world wide media bottle and none of us can stuff him back in' (Careless 2006).[15]

The Future Environment Facing Radio in Canada

Given the profound changes underway in broadcasting technologies, the demonstrable changes in audience behaviour and interaction with media, as well as the evident failure of the original approach to digital transition, the Canadian government in June 2006 commissioned a far reaching report on the future environment facing the whole

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[14] Kevin Shea, President and CEO, Corus Radio Group quoted in Simon Tuck (2005) 'Satellite radio ruling upheld', *Globe and Mail* 10 September 2005.

[15] Kevin Shea quoted in J. Careless (2006) 'Content Key to Digital Success', *Radio World,* 30, no.1 January 2006.

broadcasting system.[16] Specifically, the government was concerned to ensure that the Canadian broadcasting system remain relevant in a global digital environment and that Canada should continue to play a leading role in the development and use of 'world class communications technologies'.[17]

The CBC in its submission to the CRTC, noted the downward trend in radio listening, acknowledging that under 25s are consuming less traditional radio in favour of accessing audio content from a host of new emerging technologies.[18] Illustrating the multi-platform growth in audio media technologies, the ten year period since 1995 had provided consumers with increased choice in accessing audio content, greater diversity of content and greater flexibility in means of access and listening:

Figure 1:

Illustration of Multi-Platform Growth - Audio

1995	2000	2005
Distribution	Distribution	Distribution
•Radio	•Radio	•Radio
	•Audio Player	•Internet
		•Satellite Radio
On-demand	On-demand	On-demand
•Tapes	•Tapes	•CDs
•CDs	•CDs	•Music downloads
	•Music downloads	•Streaming Audio
		•Podcasting
Portable	Portable	Portable
•Walkman	•Walkman	•Walkman
	•Digital Audio Player	•Digital Audio Player
		•Mobile Phone

Source: CBC 2006

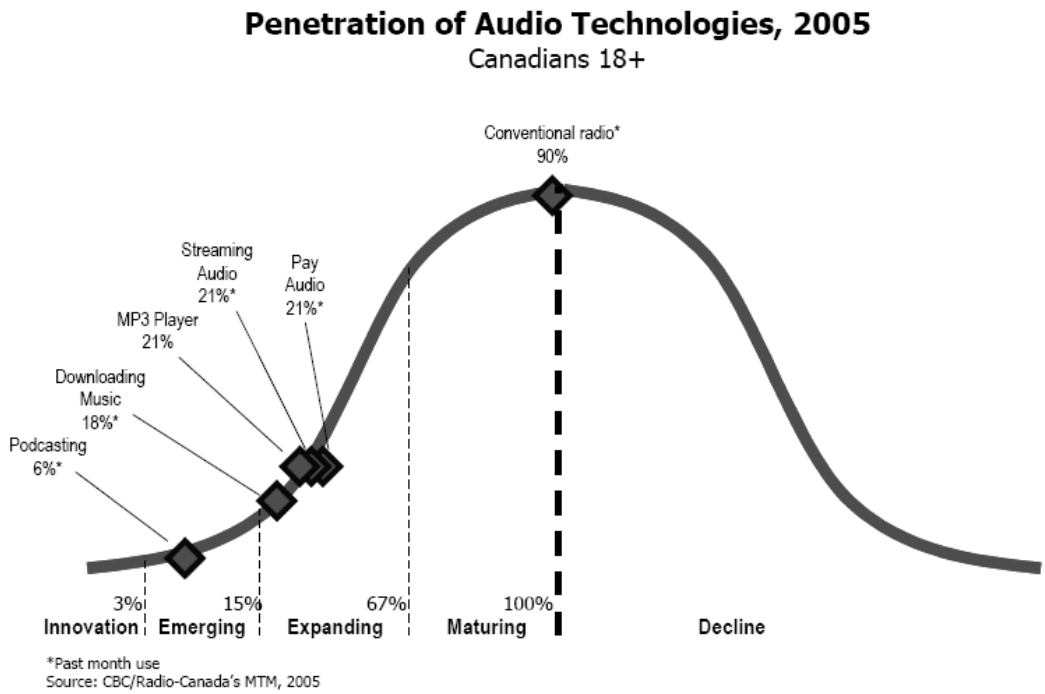
[16] *The Future Environment Facing The Canadian Broadcasting System* - a report prepared pursuant to section 15 of the *Broadcasting Act* 14 December 2006. Available at: http://www.crtc.gc.ca/ENG/publications/reports/broadcast/rep061214.htm

[17] The Broadcasting Act requires that the Canadian broadcasting system should be 'readily adaptable to scientific and technological change', and that regulation should 'not inhibit the development of information technologies and their application or the delivery of resultant services to Canadians'.

[18] Comments of the CBC/Radio-Canada - Broadcasting Public Notice CRTC 2006-72. Available at: http://www.cbc.radio-canada.ca/submissions/2006.shtml

CBC's own survey of media technology use, the annual *Media Technology Monitor (MTM)*, indicates that the overall penetration of new audio technologies remains at a relatively low level, but is clearly expanding and for younger demographics is fast becoming the primary means of accessing audio content. Figure 2 illustrates the penetration of audio technologies for the general population, representing all Canadians over 18 years of age:

Figure 2:



Against a background of proliferating technologies and platforms for audio distribution, conventional radio remains a dominant and mature technology. The demand for greater choice and flexible, on-demand access is expanding and will continue, however. Satellite radio as of 2006 had acquired over 300,000 subscribers and is planning further distribution of its service through cable, direct-to-home and mobile wireless.[19] In its *Future Environment* report, the CRTC conclude that new audio platforms represent a significant challenge to traditional over the air broadcasting and will increase fragmentation in the market but note that broadcasters have adapted their business models to focus on greater local content and connection

[19] *Future Environment,* para 27

with communities, and have increased emphasis on younger demographics. This is a strategy, the CBC claim, has succeeded in winning them additional market share in an otherwise declining market.[20] In addition, broadcasters in Canada, observe the CRTC, have themselves adopted new technology platforms to the extent that they routinely stream their services on the internet, provide podcasts and downloads of selected programming, and have entered into content partnership arrangements with other undertakings including satellite providers.[21]

Interviews conducted with broadcasters in 2005, however, revealed a high degree of scepticism regarding any quick transition to a digital environment.[22] Most broadcasters, both public and private, believe terrestrial radio, most probably analogue, will in 2015 remain a strong, dominant feature of the technological landscape. Changing programming formats and production methods based on a much more multimedia-oriented market are anticipated but in the main broadcasters do not foresee a situation in which terrestrial radio will be marginalised. On the contrary, its strong local content will continue to be a valued and important form of broadcast content. From the professional broadcasting perspective, the strength of FM broadcasting in North America (US and Canada) is such that it will be a considerable period of time before that begins to change and a major period of overlap between analogue and digital radio is foreseen with IBOC appearing to be a more feasible digital option for a successful transition. However, significant testing issues remain and its future success will be dictated by its progress in the US market. DAB, according to broadcasters, has proven to be an expensive and unsuccessful experiment for Canada offering no particular advantages to a national broadcaster such as CBC or to commercial private operators.

For the CBC, in particular, on-demand listening represented a much greater priority as illustrated by the success of their podcasting initiatives. Podcasting has been particularly successful for CBC and in the case of younger demographics has even overtaken terrestrial listening for music programmes. CBC executives also view the potential of programming for mobile devices a key element of future broadcasting

[20] CBC Submission (2006: 23).
[21] *Future Environment,* para 262
[22] Interviews were conducted in July and August 2005 with broadcasters and engineers in CBC, Standard Radio, CHUM and Rogers.

strategy. This was a point echoed by private broadcasters noting some of the fundamental shifts taking place in the industry particularly among younger listeners towards user-driven and multimedia applications. A ten year outlook will see greatly expanded choices for consumers which will gradually erode the market base for radio. It will see a comparable position to that of television 10 years previously where it now faces significant competitive threats from other media and while it continues to do well, but economically not as well as it used to do. Accordingly, radio strategists see the need for radio companies to be very sensitive to their role as content providers and emerging trends for consumption of that content. However, they remain cautious on each of these citing the over-hyped future of internet radio as a case in point and for this reason, do envisage a future in 2015 radically different from the current situation.

In its conclusion to the report on *The Future Environment Facing the Canadian Broadcasting System* (2006), the CRTC observed that any negative financial impact on the broadcasting system caused by changes in media consumption patterns has been marginal to date, that radio and television listening and viewing has remained largely unaffected and that broadcast industry revenues continue to grow.[23] It is conceded, however, that new audio-visual technologies have had the effect of making a more 'open' broadcasting system enabling consumers to access content via unregulated platforms in a borderless global media environment. As cited in the report's conclusion:

> The Canadian broadcasting system is healthy at this time. It will not be usurped by new audio-visual technologies in the short (and perhaps) medium term. Unregulated distribution technologies will, for the most part, play an additive role to that of traditional broadcasting, complementing and enhancing the current regulated system rather than becoming a substitute for it. (CRTC 2006: para 361).

There is a recognition, in other words, that the future for radio is undoubtedly a multi-platform one with varying degrees of balance between analog and digital, linear and on-demand. It is conceded that digital radio as originally conceived in 1995 is unlikely to 'become an integral part of the Canadian radio broadcasting system for the foreseeable future' (CBC 2006: 25) and that conventional analog radio, FM in

[23] *Future Environment,* para 358.

particular, will maintain a dominant position at least up to 2015.[24] At the same time, other digital terrestrial developments including IBOC and Digital Radio Mondiale or DRM, satellite distribution as well as improved applications of DAB, have the potential to be a significant part of the overall mix for the future radio broadcasting environment.

From the regulatory point of view, the question remains as to the most appropriate response to the introduction and impact of new technologies; whether greater flexibility is required to enable broadcasters to extend their reach into new media; and/or whether greater regulatory oversight is required for new audio-visual technologies.

Towards A New Digital Policy

As part of its commitment to a review of the regulatory framework for the different sectors of broadcasting, the CRTC undertook its review of the commercial radio sector in 2006, including its first formal review of the transitional digital radio policy (CRTC, 2006). In recognition of the fact that the digital transition had stalled, questions posed by the CRTC included whether the replacement strategy should be reconsidered and if so what the status of existing DAB stations now in operation should be. It asked whether the policy should be modified to enable new entrants into the market, specifically if digital radio could provide better services for diverse cultural and ethnic communities, and how additional DAB spectrum might be obtained or made available.

The industry was unanimous in its view that the original policy had failed. The CBC proposed that the transitional policy should be abandoned, and that 'the future of DRB in Canada will not be that of a replacement technology, but as a technology that will co-exist with the existing analogue radio services'.[25] The Canadian Association of Broadcasters likewise argued for a more flexible approach: 'It is simply not realistic to assume that a successful digital transition will be no more than the replacement of

[24] As reported in ala-Fossi et al (2007)
[25] CBC Submission, *Review of the Commercial Radio Policy – Broadcasting Notice of Public Hearing CRTC 2006-1*
http://www.cbc.radio-canada.ca/submissions/2006.shtml

the existing business with minor additions and adjustments. Nor does digital transition necessarily mean the destruction of the old business and the creation of a new one' (CAB, 2006). A successful transition to digital in the Canadian context will be based, the CAB continued, on a 'good value proposition' that included new content, affordable receivers, promotion, and competitive technical features. It will continue to include DAB as part of the equation but one which is as likely to include variants of the Eureka-147 system, as well options for IBOC, Internet distribution and technologies for distribution to hand-held mobile devices.

The revised digital radio policy issued in December 2006 outlined a new regulatory environment for digital radio broadcasting, opening a variety of different opportunities for a multi-platform digital radio future:

- Firstly, the new policy introduces a new service model rather than a replacement for L-Band DRB/DAB transmission, enabling licensees to develop whatever broadcast services they see fit, subject to the same regulatory provisions as for existing FM services, though with greater flexibility promised for specialty services. L-Band DAB licences are therefore released from being simulcasts linked to existing undertakings with potential for new market entrants. The current limits on 5 stations sharing a 1.5 MHz channel remain though enhanced compression technology will be reviewed in the future.

- The new digital radio policy also opens the door to IBOC technologies and, subject to satisfactory testing given the different technical requirements for transmission in Canada, particularly for any potential interference to other stations, the licensing of IBOC will be permitted. The fact that IBOC enables a transition to digital without using additional spectrum is considered a major advantage. Digital Radio Mondiale or DRM likewise also reuses existing analog spectrum and will similarly be considered for licensing.

- Finally, the revised policy supports testing multimedia broadcasting using DVB-H and DMB technologies to deliver a mix of audio, video and related

data services in the L-Band subject to sufficient spectrum being made available.

In their submissions to the CRTC hearings on digital radio, Canadian broadcasters had called for a multi-option plan that enabled them to compete with new digital audio services available to consumers, though a flexible approach to digital radio conversion across L-band DRB and AM/FM IBOC technologies (Stacey 2006). This is essentially what the CRTC provided in its revised digital policy though it is explicitly admitted that no guarantee of success could be provided given that many of the factors that led to the current stalled-state of Canadian digital radio, including poor availability of receivers, remain in place.

Conclusion

Canada's revised digital radio policy is an attempt to place plans for a digital transition for the radio industry on a more solid footing. From being an early digital radio leader, Canada's experience had more recently been one of market failure and of playing a secondary and reactive role to developments elsewhere, particularly the United States with regard to IBOC and satellite broadcasting. The new policy acknowledges the reality of diverse technological options and multiple platforms for delivery of radio and audio services and content. The industry has responded by establishing a Digital Radio Co-ordinating Group to engage in testing of IBOC technologies including HD Radio and DRM. With tests ongoing and consideration being given to the different options available, the feedback to date, according to some industry representatives, remains inconclusive. Quoted in a recent trade article, one industry executive argued: "IBOC has got a lot of hurdles to overcome from a technical standpoint in this country, and then you've got the question, 'what's in it for the consumer?' What are we going to put on those 'side channels' to thrill and delight the consumer? And the other question you have is the old 'chicken and egg' problem — are there enough manufacturers who are going to make these appliances and will consumers buy them?" (in Lehane, 2007). Added to this, there is increased skepticism about the prospects of making digital radio content attractive under existing regulatory constraints while other digital content remains unregulated and unrestricted.

As under the previous transitional policy regime, external developments are just as likely to have a major impact on the development of digital radio. The merger of XM Satellite Radio and SIRIUS Satellite Radio will, for instance, create one satellite platform which in alliance with automobile manufacturers will ultimately exert a powerful influence on consumers access to audio services. The impetus for common platforms and dual-mode receivers in the automotive sector will act as a gateway and a filter for digital radio, particularly if IBOC is widely adopted. Alternatively, the nature of the platform may become redundant if 'software-defined receivers', which will be able to decode any digital signal, become viable.

At the present moment, digital radio despite the intervention of the CRTC and a revised digital radio policy, does not appear to have a priority on the Canadian radio industry's agenda. Against a background of an industry still performing strongly and in which there is continued demand for more FM frequencies, digital radio is viewed an uncertain and risk-laden enterprise. While IBOC is perceived to have a growing profile in the US market and is likely to have a greater influence on Canada's digital approach, the number of receivers sold has to reach the one million mark and remains tiny compared to the near universal availability of analog receiver equipment. Comparisons are frequently made with relatively 'successful' markets for digital radio such as the United Kingdom and Denmark where strong alliances between public and private broadcasters and the state regulator were forged to drive the digital transition. This is not a situation that pertains in Canada which in effect has adopted a market-driven approach. The fear expressed by some radio executives is that such a situation will not give digital radio a chance to get a foothold in a now crowded environment for content delivery platforms. Advances elsewhere in ubiquitous wireless broadband and Internet access may mean that consumers may migrate in greater numbers to internet-delivered audio services, slowly depleting radio of its status as an always-on portable companion.

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