COMMUNITY PARTICIPATION IN THE DEVELOPMENT OF DIGITAL RADIO: THE AUSTRALIAN EXPERIENCE

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Abstract

The participation of the community broadcasting sector in the development of digital radio provides a potentially valuable opportunity for non-market, end user-driven experimentation in the development of these new services in Australia. However this development path is constrained by various factors, some of which are specific to the community broadcasting sector and others that are generic to the broader media and communications policy, industrial and technological context. This paper filters recent developments in digital radio policy and implementation through the perspectives of community radio stakeholders, obtained through interviews, to describe and analyse these constraints. The early stage of digital community radio presented here is intended as a baseline for tracking the development of the sector as digital radio broadcasting develops.

We also draw upon insights from scholarly debates about citizens media and participatory culture to identify and discuss two sets of opportunities for social benefit that are enabled by the inclusion of community radio in digital radio service development. The first arises from community broadcasting’s involvement in the propagation of the multi-literacies that drive new digital economies, not only through formal and informal multi- and trans-media training, but also in the ‘co-creative’ forms of collaborative and participatory media production that are fostered in the sector. The second arises from the fact that community radio is uniquely placed — indeed charged with the responsibility — to facilitate social participation in the design and operation of media institutions themselves, not just their service outputs.

Community participation in the development of digital radio: the Australian experience

Community broadcasting provides a direct means of enabling non-market, end user-driven experimentation in digital radio service development and has an important history of contributing to social and technological innovation (Rennie 2011). Media participation has become a common feature of new media platforms, strengthening the case for the resourcing and development of digital broadcasting services by community-based users. However, spectrum markets that generate windfall returns to governments also prompt public policy makers to interrogate the ‘public benefits’ of allowing community-based, not-for-profit broadcasting licensees to occupy valuable spectrum (DBCDE 2011). These tensions are reflected in Australian digital radio policy and services development. Despite resource and spectrum constraints the community broadcasting sector is nonetheless participating in the development of digital radio services. We draw upon relevant scholarly literature, interviews with key figures in the Australian community broadcasting movement, as well as description and analysis of the norms, processes and effects of recent developments in Australian digital radio law and policy to locate these new services within a broader consideration of the public benefits of community-based digital radio services.
The paper provides a snapshot of community digital radio services at a particular point in time — that is April–May 2011, the period in which services were launched. The research, which involved interviews with community broadcasters that took part in the development of digital services, reveals some anxiety towards the technical and resource challenges involved in the development of new services. Participation in community media has distinct qualities, which set it apart from commercial and public sectors of broadcasting and have developed along a distinctive path in the analogue broadcasting context. This paper opens up for consideration the ways that the possibilities of participation began to expand in the digital broadcasting framework. It examines factors, which shaped the participatory possibilities of digital radio and the prospects for social and technological innovation in this establishment period. It aims to provide a baseline study for future review and evaluation of the impact of digital community radio.

Media participation and co-creation

A range of interesting and important questions were opened up with the commencement of digital community radio services in Australia in the first part of 2011: Could the participatory media practices associated with analogue radio be adopted and adapted for the digital platform, and what would be the public benefits in such an outcome? What new opportunities possibilities of participation, in addition to those developed in the analogue radio environment, would digital radio offer? In order to examine these questions it is important first to establish the distinct qualities of community radio participation; how the multi-literacies developed through social participation in media services are achieved and whether this differs from other forms of media participation.

Community broadcasting is one of a number of important social movements with its origins in the 1960s that anticipated and informed development of the participatory and co-creative affordances of digital networked media. These capabilities are now valued as sources of innovation in distributed social networks (Jenkins 2006). Other related movements were the open source software and community cultural development movements (Meikle 2002; Hawkins 1993). Like community broadcasting, these movements fostered the development of important new platforms, practices and spaces for social participation through communicative and creative expression.

‘Co-creation’ is a term that is used to describe a range of collaborative production practices in convergent media cultures. It has been used to describe the ‘circuit’ of expression pioneered in productions such as The Matrix, and reality TV formats such as Idol to support audience participation and value-adding across multiple platforms (Jenkins 2006). It draws attention to the new economies of distributed media production, and the associated problems of labour and intellectual property management that these new practices pose for wider economic and legal structures. These have been most strikingly observed in computer games (Morris 2004; Banks and Humphreys 2008), where production and market acceptance is entirely reliant upon successful collaboration between players and developers in game design and development. These problems arise because the gap between the producer and consumer is narrowed in these collaborations of amateur and professional knowledge (Leadbeater and Miller 2004). The extent to which community broadcasting has confounded and narrowed the amateur/professional divide is at the heart of a debate about broadcasting ‘quality’ and ‘standards’ that is as old as the sector (Van Vuuren 2006). In these collaborations end user productivity is considerably enhanced over and above that of other types of media, arts and entertainment users, including mass media consumers and even the active audiences of participatory fan-based media production cultures. Rather than being focused on producers or users, the concept of ‘co-creation’ foregrounds the problems of facilitating collaborative modes of production and the influence of factors such as institutions, technologies and social context (Spurgeon et. al. 2009).

Watkins and Russo (2009, p. 269) place community media within a genealogy of ‘participatory communication and content creation’ alongside initiatives in amateur and CB radio, citizen journalism and social media. They correctly observe that these endeavours have enabled individual
expression. However, community broadcasting can be further distinguished. In addition to enabling individual expression, community broadcasting also exhibits key qualities of sustainable co-creative media, which Watkins and Russo describe as reliance upon team-based, and inclusive social strategies. In the community broadcasting context these co-creative strategies are shaped by a pluralistic philosophical commitment to facilitating the ‘voicing’ of community (Tacchi 2009), as well as the pragmatics of acquiring, managing, maintaining and using broadcasting spectrum. Put another way, if the community broadcasting sector functioned as little more than a soapbox for individualistic vanity broadcasting its claims on broadcasting spectrum would not have sustained legitimacy in Australian media and communications law and policy as it has for over 30 years.

Although the concept of co-creation is useful for describing collaborative content production practices, it does not fit neatly with analogue community broadcasting outcomes and processes. For example, although community radio stations do have a paid workforce that works alongside a voluntary workforce, the professionals are more likely to be station management than content makers. Consequently, in the analogue history of the sector, co-creative content production has not been the distinguishing participatory media practice of the sector. Rather, it has been the institutional habitus of the community radio station that has provided the framework for media participation that connects it to audiences and extends beyond the purely amateur (Rennie 2011). This includes sector-based initiatives in content production and networking, such as the National Indigenous Radio Service, the talk-based and cultural programs shared on the Community Radio Network, daily news provided by the National Radio News service, and current affairs from The Wire, as well as specialised arts and social policy programs. It also includes initiatives stimulated and sustained by government funding such as AMRAP (the Australian Music Radio Airplay Project) that has developed a range of highly successful services that facilitate the production, circulation and development of Australian music and audiences, and establish community broadcasting as an important cultural infrastructure (Johnson 2011, 4). The National Indigenous Radio Service is another example of this kind of facilitated networking.

If community broadcasting presents an opportunity for innovation on the digital radio platform, then it does so by virtue of its capacity to encourage participation by means of ‘bottom-up’ institutional design rather than through professional–amateur collaboration in content-making. The community broadcasting framework facilitates social participation in the design and operation of media institutions themselves, not just their outputs. This persists as a crucial point of difference from online social media, commercial print and broadcast media, and public service media.

The ways in which digital radio was implemented, including the pressures that digital radio were placed upon institutional structures and individual station resources were an integral component in understanding the participatory capacity of the new platform. Did the new platform create possibilities within and between community media institutions for content innovation to emerge? How was the regulatory framework for digital radio influenced the early development of digital community radio services? What could be made of the community broadcasting resource? What opportunities did it offer to build the capacity for co-creative participation in content creation and audiences for that content across multiple platforms?

**Participation and the development of analogue and digital community radio**

Analogue community radio was established in response to significant community mobilisation, representing a diverse array of voices. Digital radio, on the other hand, has been driven more by a policy desire for technically superior and more efficient use of spectrum than any clear-cut needs-based case for new services. When community radio was first established it drove the opening up of the FM band in Australia. Unlike other commercial and national broadcasting incumbents, community broadcasters have faced considerably larger obstacles to gaining purchase on digital broadcasting spectrum.
Australian community broadcasting has its origins in the media campaigns of the 1960s when political activists, tertiary educators and music appreciation groups began lobbying for access to the airwaves. The first proposal to establish what was then referred to as ‘public radio’ was in 1966 when Jim Warburton, Director of the Department of Adult Education at the University of Adelaide, budgeted to set up a station for the broadcasting of educational materials. The license for VL5UV, known today as Radio Adelaide, was finally granted in 1970 as an ‘educational’ license under the Wireless Telegraphy Act (Langdon 1997; Thornley 2001). Two fine music stations in Melbourne and Sydney were awarded licenses during the same period. It has been argued that the early analogue radio campaign was dominated by educational and fine music advocates to the exclusion of more radical groups. However, the issuing of these first licenses, together with the official formation of the Public Broadcasting Association of Australia (now the Community Broadcasting Association of Australia) established a formal sector that could conduct negotiations and provide input into a licensing framework. Unlicensed, or pirate, broadcasters continued in their attempt to gain access to the airwaves throughout this period, although to a lesser extent than in other countries (see Rennie 2006). For instance, in protest against the Vietnam War, students at Monash University and Melbourne University commenced broadcasts 1971, but were shut down because they did not have a broadcasting license (Liddell 2003). Indigenous television started with pirate TV stations in Yuendumu and Ernabella in the mid 1980s (Michaels 1986; Meadows 2000). Such civil society engagements led to the development of the community broadcasting sector and the institution of media participation within Australian broadcasting policy.

In 1978 ‘limited commercial’ radio licenses were administered; in 1992 community broadcasting was enshrined as the ‘third tier’ of Australian broadcasting with the passage of the Broadcasting Services Act. The Act requires that community broadcasters, amongst other things, be operated as not-for-profit associations and that they allow for participation in the running of the organisation as well as programming.

In the first part of 2011 there were 356 long-term licensed community radio broadcasting licensees in Australia and a total of 543 licensed independent community operated services in total (ACMA 2011). A total of approximately 23,000 people participated in various aspects of station management and production, 20% of which are under the age of 26. These voluntary unpaid work hours amounted to over $398 million per year (CBF 2011). Audience figures, for 2010, showed that 4.4 million Australians aged 15 and over listened to community radio in an average week, or 26% of the population in that age group. By comparison, commercial radio stations attracted 63% of the total possible listenership, while the public broadcasters (ABC and SBS) attracted 44%. In audience numbers, community radio was slightly bigger than one third of the commercial radios and had over half the audience of the public broadcasting radio stations (Balogh & Geilen 2010).

Digital radio developed in a very different regulatory and technical environment. Commercial radio incumbents also had a major influence on policy. In the years of policy development the general interest in digital radio was low. Development of digital radio in Australia was also slow compared to other much larger European and North American markets for a variety of reasons, including a low level of general interest on the part of national, commercial and community broadcasters. Consequently policy settings gave most mainland capital city incumbent commercial broadcasters the opportunity to develop digital services, with no plans to shut down the analogue spectrum. Unlike analogue infrastructure the digital broadcast transmission standard adopted by Australia is necessarily shared. It cannot be owned and operated by one broadcaster to the exclusions of others for economic and technical reasons.

Digital radio test broadcasts commenced in Australia in 1999. The framework for the introduction of digital radio broadcasting services was released in 2005, with a start-date for digital radio anticipated for January 2009. In 2007 legislative amendments to the Broadcasting Services Act (Broadcasting Legislation Amendment (Digital Radio) Act 2007) for digital radio were passed, providing a framework for the commencement of services in metropolitan areas and a review of
regional digital radio to be complete before January 2011. Unlike the initial digital television amendments (Digital Television and Datacasting Bill 2000) which included no provision for the digital transmission of community broadcasters, digital radio policy was designed so that wide-coverage community radio broadcasters would have access to the digital multiplexes (transmission system) from the start. Senator Helen Coonan, the Minister for Communications and the Arts at the time, stated that ‘rules will be established to assure commercial radio broadcasters and the wide-coverage community radio sector of access to the minimum levels of capacity on multiplex ensembles, on published and non-discriminatory terms’ (Coonan 2005). The Community Broadcasting Association of Australia (CBAA) worked hard to facilitate access to the multiplexes for the sector stations and lobbied for federal government support for necessary infrastructure and equipment.

Under the original plan outlined by Coonan, two or three multiplexes would provide digital radio to capital cities. One multiplex was allocated for the public broadcasting sector to run as it saw fit, while the other one or two (depending on the size of the market) were given over to existing commercial services, with an obligation that they provide 20% of the available capacity to city-wide community broadcasters. Individual commercial broadcasters were granted the minimum right to acquire 128kbps of multiplex capacity, the minimum bandwidth required for broadcasting stereo music (Morris 2007, 117). Subject to availability, the commercial broadcasters could also acquire more capacity, capped at 256kbps per available multiplex. For community radio broadcasters, although the access right of 128kbps per multiplex up to 256kbps was stated as policy, stations in the same market had to collectively determine how the total available capacity would be shared. Sub-metro community stations were not considered in the initial planning.

Where analogue community radio services historically developed as a social movement ‘from below’, community involvement in planning digital radio spectrum and service development has been coordinated ‘from above’, through the CBAA’s Digital Radio Project. This was established to work within the Joint Venture framework for managing digital radio transmission systems and to oversee the construction of the Internet Protocol network infrastructure that is being used for digital radio. The Digital Radio Project also had some scope to support the development of supporting sector engagement with digital media in general (including, for example, the web-based presence and services).

Due to a series of unforeseen delays, community radio did not commence digital transmission along with the rest of the sector. The Government’s plan had been to form Joint Venture Companies for the ownership of that multiplex transmission infrastructure. Community broadcasters in each capital city would form a company and then that company would participate in a Joint Venture Company with the commercial radio operators. The resulting Joint Venture Company would run the multiplex (or multiplexes), with both the community and commercial sector sharing ownership and management. However, the commercial character of the JVC structure proved to be an insurmountable barrier to participation for the community sector. Specifically, the JVC structure exposed small not-for-profit community broadcasters to a capitalisation mechanism that was triggered by a majority of shareholders (in this instance commercial radio licensees). A newly elected Labor government legislatively extended by 12 months the period in which community broadcasters could take up a JVC shareholding as well as funding assistance to do so. However the risks of the JVC structure for community licensees (obliged by the terms of their licences to operate as NFPS) could not be resolved and, the community broadcasting sector lost its stake in the Joint Venture Company structure. The Australian commercial radio industry launched digital broadcasting in five capital cities — Sydney, Melbourne, Brisbane, Adelaide and Perth — in May 2009.

The community sector nonetheless could rely on a legislative guarantee, or a ‘standard access entitlement’ that provides access to two ninths of the capacity of a foundation digital radio multiplex transmitter license (under Division 4B, section 118NR of the Broadcasting Legislation
Amendment (Digital Radio) Act 2007). Although it was too late to claim a stake in the multiplex ownership, the 2009 budget included funding that enabled community broadcasting sector to acquire the necessary infrastructure for the 2010–2011 year. Interestingly, the digital radio framework, although restricted in terms of spectrum, did give the community broadcasting sector the freedom to determine how it would manage, or divide, the allocated bandwidth.

Final decisions on how the sector would allocate its spectrum were reached by the time digital community services launched in May 2011. Due to the uneven numbers of stations to be accommodated in each city, the resulting allocation was far from equal. (Table 1) At the time of the launch, Perth was the most ‘crowded’ of the cities to have commenced digital transmission. There was only one multiplex in Perth with 256kbps of capacity allocated for the seven community radio stations to share. That meant each community broadcaster could use 36kbps of the multiplex for their digital broadcast, in practical effect limiting the audio bit rate to 32kbps. The scenario in Adelaide was similar, with six community radio broadcasters sharing the 256kbps of the one available multiplex, resulting in an audio bit rate of 32kbps. Brisbane was the least ‘crowded’ of the five capital cities and possesses two multiplexes, and interestingly also the site of the most adventurous development of new digital services. The first accommodated four community broadcasters with the 256kbps available, giving each a share of 64kbps. The other three community broadcasters shared the 256kbps of the second multiplex, making the nominal bit rate available for each station 84kbps. Although there were also two multiplexes in both Melbourne and Sydney, these were shared by nine stations in Melbourne and eight in Sydney. Each station could access a capacity of 48kbps to 64kbps in the two cities.

Table 1: Sharing of spectrum on digital radio multiplexes for community radio stations

<table>
<thead>
<tr>
<th>City</th>
<th>Number of stations allocated digital spectrum</th>
<th>Number of multiplex available*</th>
<th>Capacity available to be shared (kbps)</th>
<th>Nominal bit rate for each station (kbps)</th>
<th>Practical bit rate for each station (kbps)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adelaide</td>
<td>6</td>
<td>1</td>
<td>256</td>
<td>42</td>
<td>32</td>
</tr>
<tr>
<td>Brisbane</td>
<td>7</td>
<td>2</td>
<td>512</td>
<td>64–84</td>
<td>64–80</td>
</tr>
<tr>
<td>Melbourne</td>
<td>9</td>
<td>2</td>
<td>512</td>
<td>51–64</td>
<td>48–64</td>
</tr>
<tr>
<td>Sydney</td>
<td>8</td>
<td>2</td>
<td>512</td>
<td>64</td>
<td>64</td>
</tr>
<tr>
<td>Perth</td>
<td>7</td>
<td>1</td>
<td>256</td>
<td>36</td>
<td>32</td>
</tr>
</tbody>
</table>

* Current policy states that designated community radio stations have to share 2/9 of all the multiplex capacity available.


In a number of cities the community broadcasting spectrum allocation granted did not meet the accepted base for radio or CD audio. The CBAA argued the inequity of this jam-packed situation in a response to the Department of Broadband, Communications and the Digital Economy discussion paper issued as part of the Review of digital radio technologies for regional Australia (Letch 2010c). The CBAA pointed out that the constraint of access resulted in inferior technical characteristics of digital broadcast services provided by community radio stations when compared to commercial broadcasters. This was despite the fact that digital sound quality is the main reason that media consumers decide to acquire a digital radio receiver (CRA 2011).

Another consequence of these comparatively small spectrum allocations was that most community services would not have the technical capacity to provide associated data (e.g. text-based information to augment or supplement audio data). Consumer demand and the business models affecting manufacturing will determine the availability of added features, such as pictures and text.
At the launch of digital community radio, Digital Radio (DR) receivers still had small text-only screens and were fairly unsophisticated devices. Moreover, consumers were still habituated to radio listening instead of viewing radio, sometimes for good reason. It would be unwise, for instance, if digital radio sets in cars were developed with extensive text and visual features. In any event, the software for these applications was in the very early stages of development. Commercial licensees had only just developed an application that synchronised delivery of text and audio information. Developing this further to include visual data is a long way off — even if the community sector did possess, and use, the necessary delivery capacity.

As this short history of digital community radio demonstrates, the potential for content innovation is influenced by a variety of factors that enable the possibilities of a user-led development pathway for digital community radio. These include factors arising from the external policy environment such as the conditions of community radio spectrum tenure, ownership and control arrangement for digital transmission infrastructure, and the extent to which community radio participation in the digital radio platform has been resourced.

**Digital community radio services**

The initial offerings of community-run digital radio reflected the resource and technical limitations under which they were developing. These concerns and constraints are reflected in Table 1, which summarises the number of digital community radio services that launched in Australia between May and June in 2011. Table 2 shows that of the 36 participating stations, 24 were simulcasting their existing services on their digital spectrum. Seven stations had established entirely new services while five others were taking a more transitional approach to developing new digital services by introducing new program blocks into digital simulcasts of existing services. These ranged in duration from a few hours per week to a few hours per day. Table 1 also shows that of the 37 community radio stations entitled to participate in the first stage roll-out of digital radio broadcasting in the five capital cities, only one, 4RPH (Radio for Print Handicapped) in Brisbane, decided not to participate in the first instance. At the time of writing, it was confirmed that 4RPH will provide a digital service although a launch date had yet to be confirmed. This decision contrasts with the more positive, indeed innovative, responses to the offer of digital spectrum from RPH stations in other parts of Australia, as well as other Brisbane community radio services. In Melbourne and Adelaide, RPH stations developed a brand new digital initiative. Five out of the six other Brisbane-based community radio services that were offered digital spectrum also opted to develop new services and either commenced completely new services in 2011 or were embedding new programming blocks in digital simulcasts of existing Services.
Table 2: Community digital radio services in Australia (launched April–May 2011)

<table>
<thead>
<tr>
<th>Service type</th>
<th>Number of stations allocated digital spectrum</th>
<th>Number of digital services on-air</th>
<th>Digital simulcast of existing service</th>
<th>New digital service</th>
<th>New program blocks in digital simulcast of existing service</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adelaide</td>
<td>6</td>
<td>6</td>
<td>4</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Brisbane</td>
<td>7</td>
<td>6</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Melbourne</td>
<td>9</td>
<td>9</td>
<td>8</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Sydney</td>
<td>8</td>
<td>8</td>
<td>6</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Perth</td>
<td>7</td>
<td>7</td>
<td>5</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>37</td>
<td>36</td>
<td>24</td>
<td>7</td>
<td>5</td>
</tr>
</tbody>
</table>

Sources for Tables 2, 3 and 4:
2. Web pages of respective stations
3. Personal communications with staff members of CBAA
4. Personal communications with staff members of respective stations.

The new digital community radio services that commenced in 2011 are described in further detail in Table 3. These extended service choice in communities of common interest. For example, the Radio for the Print Handicapped (RPH) service IRIS, prioritised ‘softer’ lifestyle news and information in programming and left the analogue RPH services in Melbourne and Adelaide to continue with their ‘hard’ news and public affairs focus. This strategy extended RPH service choice in ways that were expected to hold a stronger appeal for younger and more female audiences.

Collaboration was another important feature of new service development. So too was reliance on automated playout technology rather than live presentation. For example, the IRIS service consisted of a playlist of pre-recorded programs that were distributed via an automated play-out software system. The playlist included segments from the 3RPH and 5RPH schedules with some new content, but no live broadcasts at that time. Similarly, Christian radio stations 2CBA of Sydney, 4FRB of Brisbane and 5RAM of Adelaide were collaborating in the development of another new digital radio service heard in each of these cities called Inspire Digital. Other new services addressed specific tastes and interest music and culture. For example, Brisbane ethnic community radio service 4EB combined world music programs from its existing service with new youth-oriented content made for, with and by young people from migrant language and cultural groups. Both collaboration and technology helped to minimise costs, maximise efficiency and spread the risks of new service development, while also extending opportunities to participate in the programming and management of broadcasting resources — and to develop the multi-literacies of inclusion and social participation — to new groups.
## Table 3: New content and services provided by stations at 1st stage in April–May 2011

<table>
<thead>
<tr>
<th>New channel on the air</th>
<th>Description</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sydney Inspire Digital</td>
<td>2CBA – Hope 103.2 of Sydney, 4FRB – 95Five of Brisbane and 5RAM – Life FM of Adelaide collectively produce, and deliver via the content contribution network Inspire Digital. A service based on Christian teaching.</td>
<td>Christian</td>
</tr>
<tr>
<td>Adelaide Inspire Digital</td>
<td>2CBA – Hope 103.2 of Sydney, 4FRB – 95Five of Brisbane and 5RAM – Life FM of Adelaide collectively produce, and deliver via the content contribution network Inspire Digital. A service based on Christian teaching.</td>
<td>Christian</td>
</tr>
<tr>
<td>Brisbane Inspire Digital</td>
<td>2CBA – Hope 103.2 of Sydney, 4FRB – 95Five of Brisbane and 5RAM – Life FM of Adelaide collectively produce, and deliver via the content contribution network Inspire Digital. A service based on Christian teaching.</td>
<td>Christian</td>
</tr>
<tr>
<td>Brisbane 4BI Switch Digital</td>
<td>New service of Switch 1197 AM, youth community radio of Brisbane. Switch Digital focus on dance music, electro and other sub-genres.</td>
<td>Youth</td>
</tr>
<tr>
<td>Melbourne IRIS Vision Australia</td>
<td>IRIS offers programming targeted at the under 40 female audience blending lifestyle programs and features with a younger music mix … bringing a breath of fresh air to Vision Australia Radio … via its digital service.</td>
<td>RPH</td>
</tr>
<tr>
<td>Adelaide IRIS 5RPH Adelaide</td>
<td>RPH Adelaide Incorporated offering IRIS, a new service with content shared with 3RPH in Melbourne.</td>
<td>RPH</td>
</tr>
<tr>
<td>Perth 6SON Sonshine Digital</td>
<td>New service based upon Christian teachings sourced from local churches.</td>
<td>Christian</td>
</tr>
</tbody>
</table>

**Hybrid services on the air: break away from simulcast, new programme blocks**

<table>
<thead>
<tr>
<th>Perth Curtin DiGital</th>
<th>Curtin DG will dedicate a portion of programme time to the harder-edged artists from the era of 60’s rock, folk-rock, blues and soul, now rarely heard on mainstream radio stations.</th>
<th>Music</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brisbane 4EB Global</td>
<td>World music service selection of time-shifted blocks from it’s analogue service and some new non-English language programmes.</td>
<td>Multicultural</td>
</tr>
<tr>
<td>Brisbane Zed Digital</td>
<td>New music service by 4ZZZ, non-mainstream music during the day and a hybrid of new programmes and existing analogue programmes at after hours.</td>
<td>Music</td>
</tr>
</tbody>
</table>
New channel on the air

<table>
<thead>
<tr>
<th>Location</th>
<th>Service Type</th>
<th>Description</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brisbane</td>
<td>4MBS Light Classics</td>
<td>The new station will play lighter classical, fine music &amp; jazz to a broader audience, offering an easy ‘entry point’ to future lovers of the purely classical music repertoire as heard on 4MBS. MBS Light will operate 24/7, but initially will offer live programming only between 6am–noon. ‘Breakfast’, 6am–9am, will be simulcast through 4MBS but 9am–noon weekdays &amp; Sundays will offer a mix of light classical works, including accessible works by ‘the masters’, Operetta, music from Broadway &amp; movies. Saturday, 9am–noon, will offer ‘Big Band, swing and familiar jazz’</td>
<td>Music</td>
</tr>
<tr>
<td>Sydney</td>
<td>2SER Digital</td>
<td>New music service on Sundays, simulcast on Mondays through Saturdays.</td>
<td>Music</td>
</tr>
</tbody>
</table>

At the time of writing, there are also other stations planning to provide new content on the digital radio broadcasting services. These services are described in Table 4 and include three brand new channels and a hybrid service of new program blocks in conjunction with their existing broadcasting.

**Table 4: New channel and services on the way including new program blocks**

<table>
<thead>
<tr>
<th>Location</th>
<th>Service Type</th>
<th>Description</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melbourne</td>
<td>3MBS Fine Music</td>
<td>Digital broadcasting effectively creates a second 3MBS radio station, thereby giving us an opportunity to diversify our programming in the future.</td>
<td>Music</td>
</tr>
<tr>
<td>Melbourne</td>
<td>Light Digital</td>
<td>New channel to be launched in Dec 2011. Light FM is set up aiming to communicate Christian hope to people in Melbourne.</td>
<td>Christian</td>
</tr>
<tr>
<td>Sydney</td>
<td>2OOO FM</td>
<td>A hybrid service of the Multicultural Community Radio Association (MCRA). The digital channel will feature new programs based on a more youthful and regionalised program schedule.</td>
<td>Multicultural</td>
</tr>
<tr>
<td>Melbourne</td>
<td>SYN Youth Radio</td>
<td>SYN will begin adding new digital-only programs to the airwaves in conjunction with a simulcast of their analogue broadcast on 90.7FM.</td>
<td>Youth</td>
</tr>
</tbody>
</table>

**Barriers and opportunities in relation to content innovation**

Scarce resources are an endemic constraint faced by stations and the sector. While peak sector bodies have campaigned strongly for access to digital radio spectrum over many years, the capacity of individual stations to actually participate is also governed by the resources they have available to do so.

Individual station resources vary across the sector. Some stations, such as Melbourne’s Christian broadcaster LightFM, were renovating one of their studios for digital programming production. Others, including SYN (a youth licensee), were constrained by studio space even for existing analogue services, let alone a new channel of new content. As Loretta O’Brien from 3CR commented:
We had to make a decision about whether or not we just simulcast or we create a new content as other stations have decided to do in terms of their digital broadcast … we just don’t have the resources or the space to produce a new range of content for digital. (O’Brien 2011)

The decision to simulcast also reflects a ‘wait and see’ attitude, where stations are reluctant to commit resources to a new platform while audience numbers were still low.

In terms of media convergence more broadly, the sector was only erratically engaged with digital media. Some stations (e.g. SYN, see Rennie 2011) had been taking incremental steps for a long time. Others only have the analogue radio service and, beyond a basic web site, very little engagement with digital media.

The Community Broadcasting Foundation through its support for the CBOnline project managed by the CBAA is currently investigating web-based tools that could be made available to all stations, which stations could then easily adapt and adopt. Nonetheless, the sector remains dominated by radio enthusiasts that are not necessarily in tune with digital media culture (see Rennie et al. 2010). In many respects the principles and rhetoric of access, participation and facilitation have always been contentious topics within the sector, with some stations taking a more proactive approach than others. However, as Letch points out, the differences between these cultures (analogue community broadcasting and digital media) are much starker now (Letch 2010b).

Digital radio may also increase these divides, particularly given the metro-centric way in which the new platform has been introduced. Although 14 MHz of spectrum has been identified for the introduction of digital radio in rural areas (Bodey 2010), at the time of writing no start date for sub-metropolitan and rural digital radio services has been announced. Even within cities, sub-metropolitan licensees have been left out of the digital radio framework, feeding anxiety about the long-term future of these services.

In terms of the status of digital radio, stations at the time of launching favoured simulcasting existing services over developing new services. Seen in a positive light, the preference for simulcasting reflects a framework in which stations developed as independent entities representing diverse interests. On the other hand, it could be seen to reflect a divided sector wary of collaboration and pooling of resources. In any event, it is now a moot question as to whether the sector might have been able to design, from the bottom up, new shared digital radio services from pooled resources and spectrum. Early indicators are that collaboratively developed, diverse community services will be favoured by the affordances of the digital platform. Furthermore, there is scope to focus attention ways to support participatory content creation, generation and communication practices and strategies.

Indeed, there is an opportunity to create new digital content, however. In the 2010 federal budget $3 million per annum was allocated to developing radio content over 4 years, with approximately half of that funding dedicated to ‘special interest’ programming, including Indigenous, ethnic and radio for the print handicapped. Although the funding is not specifically for digital radio content it may be used for new program development that could substantially enhance that platform. The sector now has a four-year window to demonstrate innovative content and new digital channels in order to ensure that this funding continues beyond the current commitment.

Aside from new content, digital radio provides an opportunity to reveal content that wasn’t making it onto the main channel. For instance, 98.9 in Brisbane (Triple A, Indigenous broadcaster) record the Gympie Muster, producing hundreds of hours of content that doesn’t find its way onto the analogue channel. Although some such possibilities will be hampered by lack of resources, it may be the case that the limitations of space and infrastructure within stations will generate new production processes, such as workstation production. In other words, by seeking alternative means for providing content, stations may overcome their reliance on live studio broadcasting and develop skills in audio-editing and multimedia production. In this way, digital radio may stimulate content production that could be then podcast or packaged for other stations (Letch, personal interview,
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In this scenario the sector could be well-served by experimentation, and careful consideration of how it facilitates social participation through a range of production practices, including co-creative methods.

Conclusion

In the first part of the paper we argued that community radio was an important early participatory media that anticipated co-creative productivity. By facilitating community participation in the design and operation of media institutions themselves, not just their outputs, community broadcasting structures are configured to facilitate bottom-up participation. This persists as a crucial point of difference from online social media, commercial print and broadcast media, and public service media. One reading of the information presented here is that in the development of digital services this impetus appears to have run out, which is somewhat ironic given that the more general social impact of new media platforms has been to amplify the impact of ‘bottom up’ forces. Appearances can be misleading, however. For the moment, policy and sector expectations of the capacity of communities to invigorate the participatory capacities of media institutions may not seem as high as they may have been four decades ago but the allocation of digital spectrum for community broadcasting has in fact had a number of major impacts. It has resulted in the establishment of new, community-based services and triggered development processes for more services. It has fostered new relationships and a greater level of information exchange and ideas within the sector. For example, station managers met to discuss the transition to digital and, in the process, came to know more about each other’s organisations (Letch, personal interview, 2010a). It has also encouraged experimentation with content-centred strategies for facilitating participation in services and, for the first time in the sector’s history, there is considerable support for this kind of activity.

This paper also suggests that there is a significant need for further research on community digital broadcasting in relation to the long term re-positioning of community broadcasting as community digital media. This would include further investigation into stations that are doing innovative service development, to consider how they might also work as models for the future. Successful sector-wide initiatives such as the AMRAP may also provide useful insights into the models of new networked community media service developments that might occur. Further work is also required on identifying and assessing the benefits of digital community radio, and how community-based and controlled media contribute to the population-wide distribution of opportunities for acquiring the multi-literacies of social participation. These include methods of collaboration and facilitation that are developed in the processes associated with building economic and social assets in organisational, informational and cultural forms, not just media content which is the most immediately apparent media product.

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