



UNIVERSITY OF LEEDS

This is a repository copy of *Digital radio switchover: the UK experience*.

White Rose Research Online URL for this paper:

<http://eprints.whiterose.ac.uk/43903/>

Version: Accepted Version

---

**Article:**

Lax, SE [orcid.org/0000-0003-3469-1594](http://orcid.org/0000-0003-3469-1594) (2011) Digital radio switchover: the UK experience. *International Journal of Digital Television*, 2 (2). pp. 145-160. ISSN 2040-4182

[https://doi.org/10.1386/jdtv.2.2.145\\_1](https://doi.org/10.1386/jdtv.2.2.145_1)

---

© 2011, Intellect Ltd. This is an author produced version of a paper published in *International Journal of Digital Television*. Uploaded in accordance with the publisher's self-archiving policy.

**Reuse**

Unless indicated otherwise, fulltext items are protected by copyright with all rights reserved. The copyright exception in section 29 of the Copyright, Designs and Patents Act 1988 allows the making of a single copy solely for the purpose of non-commercial research or private study within the limits of fair dealing. The publisher or other rights-holder may allow further reproduction and re-use of this version - refer to the White Rose Research Online record for this item. Where records identify the publisher as the copyright holder, users can verify any specific terms of use on the publisher's website.

**Takedown**

If you consider content in White Rose Research Online to be in breach of UK law, please notify us by emailing [eprints@whiterose.ac.uk](mailto:eprints@whiterose.ac.uk) including the URL of the record and the reason for the withdrawal request.



[eprints@whiterose.ac.uk](mailto:eprints@whiterose.ac.uk)  
<https://eprints.whiterose.ac.uk/>

## **Digital radio switchover: The UK experience**

**Stephen Lax**, University of Leeds

### **Abstract**

The United Kingdom remains one of the world's leading countries in the development of digital radio. However, it is unclear when radio will migrate from analogue to digital broadcasting in a similar way to television, which is progressively switching to digital transmission in a number of countries. When digital radio was first emerging, the industry, regulators and policymakers were broadly united in promoting digital radio as the natural successor to analogue. Yet other groups, such as small broadcasters and a number of consumer groups, expressed doubt that digital radio would, or should, replace analogue. The ensuing years have seen these doubts become more widely expressed, particularly as the United Kingdom's roll-out of digital radio has not been emulated in other European countries, and a switchover in 2015, a deadline anticipated by the UK government, looks uncertain. This article examines the relationship between industry, policymakers and listeners in the process of developing digital radio as a potential analogue replacement.

### **Keywords**

digital radio

analogue radio

radio switchover policy

Digital Radio Working Group

Digital Radio Action Plan

Media policy

### **Digital radio switchover: The UK experience**

‘Switching over’ and ‘switching off’ may once have been actions that broadcasters sought strenuously to prevent us doing: keeping us watching and listening, preferably to their own programmes, may be natural aims for any television or radio company.

However, in the context of digital transmission, switching over is precisely what we are expected to do: that is, to switch from the old analogue system to the new digital transmission platforms.

In the United Kingdom, plans have been put in place that anticipate that 2015 will be the year in which the majority of radio stations, both public service and commercial, end their analogue transmissions and so will broadcast only on digital platforms. Following this ‘switchover’, analogue FM transmissions will continue but will carry only small community and commercial radio stations, whose coverage areas typically are much smaller than those covered by digital transmissions. The vacated analogue frequencies could in fact permit further growth in the number of small radio stations.

The switchover date is not pre-determined but will finally be decided upon when particular criteria for digital radio have been met. Thus, 2015 is an aspiration, and both

the UK government and broadcasters are quick to emphasize this to repel accusations, levelled in much of the popular press, that this new digital system is being imposed upon radio listeners, rendering their existing radio sets obsolete at a stroke. Although such claims may have some credibility, much of the commentary misses some of the more nuanced features of the plans – nevertheless the popular response to the prospect of digital switchover could be described as ranging from bemusement at best, perhaps, to outright hostility. Beyond broadcasters themselves, there are few voices to be heard arguing strongly in digital radio's favour.

The state of digital radio in the United Kingdom serves as a valuable illustration of the interaction between policy, economics and technology. The United Kingdom was one amongst a small number of countries to begin digital terrestrial radio broadcasting in 1995, based on the Eureka 147 Digital Audio Broadcasting system (DAB) and, as a European development it was anticipated that DAB would be rapidly adopted across Europe and, perhaps, more widely still (O'Neill and Shaw 2010). In fact, adoption of the system varied significantly between countries, where national rather than international factors tended to steer progress (Jauert et al. 2010). Few countries have developed significant levels of DAB services over the years and the United Kingdom, while not alone in Europe in running DAB services, remains the most advanced digital radio landscape in terms of signal coverage, receiver take-up and numbers of digital stations. Thus, it might be expected that plans for digital switchover would be relatively well advanced here, and the earlier success of the digital television switchover process (by mid-2010, 93 per cent of homes had digital television receivers) reinforces such a view.

The United Kingdom's radio market is well developed, with a substantial private or commercial radio presence (a total of around 240 commercial stations accounting for a little under half of all audience share). Yet, if it would appear that conditions are favourable for the UK government and the radio industry to begin a process of switchover, there are also indications that the plans may be over-optimistic. This article will examine the build up to switchover in the context of the history DAB in the United Kingdom, the relationships within the industry and the role of regulators. While it is understandable that some might imagine that, if switchover is to succeed anywhere, it will be in the United Kingdom, there are also some reasons to believe that this may not be the case.

### **Digital radio development in the United Kingdom**

In 2010, 35 per cent of UK homes (about eight million) possessed at least one DAB receiver, with the cumulative total sold being 11M. Listening to radio via one digital platform or another accounted for a quarter of all radio listening, and most of this was via a DAB receiver: DAB accounted for 15.3 per cent of all listening, while listening via a digital TV made up another 4 per cent and listening online amounted to 3 per cent. Three quarters of radio listening therefore remained on analogue (AM and FM) receivers (all figures Rajar, Q3, 2010 and Ofcom 2010a). The general trend is for these digital listening figures to rise steadily as more people acquire receivers, although these third quarter figures actually show, for the first time, a slight decline in DAB's share (from 15.8 per cent in the previous quarter). Whether this fall is significant or merely a blip is currently

unclear, although it is a notable reversal of a trend that has typically shown DAB's share increasing consistently by between a half and one percentage point quarter on quarter.

DAB listeners can in most cases listen to both national stations and local stations, public service and commercial, and those stations are carried on transmitter networks that in 2010 covered between 85 and 90 per cent of the population. The plans for switchover include criteria for listening share and coverage that must be met before switchover can be sanctioned. These are:

- digital listening should account for a minimum share of 50 per cent, and
- DAB transmission coverage for national stations should be comparable with current FM coverage, and for local stations should reach 90 per cent of the population and all major roads.

These criteria were first published by the government's Department for Culture, Media and Sport (DCMS) in its 2009 Digital Britain report, which laid out the ideas that were enacted in the Digital Economy Act 2010. The report stated that two years' notice of any digital radio switchover date would be given, and that notice would not be given until at least the first of the two switchover criteria had been met. The report noted the suggestion from the industry working party, the Digital Radio Working Group (DRWG), that with a 'concerted drive to digital' it would be possible to increase digital radio's listening share to 50 per cent by 2015, and so switchover could then be completed by 2017. This two-year period of notice would also allow time for the broadcasters to complete the roll-out

of their transmitter networks. In fact, the government brought the estimated date forward by two years, allowing switchover to be completed by 2015.

Set up in November 2007 by the DCMS, the DRWG was made up of representatives of broadcasters, equipment manufacturers, transmission operators and regulators, and representatives of a ‘consumer impact group’; this latter sought to reflect the views of radio consumers, and in particular those who might be considered more dependent on radio such as visually impaired listeners. The DRWG was asked to develop a migration plan for radio, and its deliberations began as the process of licensing digital radio transmissions was nearing completion following reallocation of frequencies at the Regional Radio communications Conference held in Geneva in May 2006.

The United Kingdom, once again, had been ahead of most other countries in planning and licensing of DAB spectrum. Following legislation set out in the 1996 Broadcasting Act, the Radio Authority and its successor Ofcom began the process of awarding licences to run the DAB transmission multiplexes. The BBC had already been allocated its own national multiplex, and a commercial licence for a national multiplex was awarded in 1998. By the end of 2003, a further 47 licences had been awarded to commercial consortia to operate local DAB multiplexes, some of which covered transmission areas approximating to coverage of existing ‘local’ radio stations, while others extended over ‘regional’ areas. Following the agreement on frequencies at Geneva, Ofcom was able to licence a further thirteen local and regional areas, and also award an additional national commercial licence (awarded in July 2007 to a consortium headed by ‘Channel 4 Radio’).

So around 85 per cent of radio listeners were covered by a local as well as three national multiplexes, and many of these by two or more local multiplexes. While not all licensed multiplexes were yet in operation, transmission infrastructure was at least in preparation if not up and running by the time of the formation of the DRWG. Further, at the end of 2004 Ofcom had begun its long running review of radio regulation. A succession of consultation documents, headed 'Radio – preparing for the future', set out changes to the way existing analogue radio might be regulated and, in addition, how DAB radio would fit into any new regulatory structure. The overarching premise was that the regulation that had been required in the analogue world, on grounds of spectrum scarcity, was largely (though not wholly) unnecessary in the digital environment, and so the tendency was to relax regulation where it existed (that is, for analogue radio) or simply not to introduce it for digital broadcasting (Lax 2009a). So, for most of the United Kingdom's radio industry, by the time of the DRWG's formation in 2007, the auspices for DAB were promising and the working group could sit down and prepare the plan for switchover. There were some dissenting voices within the industry: single radio station companies, or small station groups, stations that typically covered small populations (less than 100,000) argued that transmitting on DAB did not make commercial sense (the DAB coverage areas being much larger); similarly, ultra-local community stations, newly emerging under Ofcom legislation and mostly broadcasting on FM, also had no obvious place on DAB. For these stations there was no practicable route to digital transmission, a point acknowledged by Ofcom and the industry (Ofcom 2004; Smith 2005). The stations' unease was that, should migration to digital mean that DAB became seen as the 'proper' radio platform, stations remaining on FM might be perceived as somehow inferior,



languishing on an out of date system. However, the concerns of these relative minnows in the radio industry were largely ignored – under switchover plans, they will indeed remain on FM for the foreseeable future – and the much larger groups, owning hundreds of stations between them (and which also owned the multiplex licences), backed DAB to present, alongside the BBC, a unified voice in favour of all-digital radio and an eventual analogue switch off or switchover.

These apparently favourable conditions for making progress towards digital switchover, and the establishment of the DRWG, paradoxically reflected an acknowledgement by the industry and government that progress had otherwise been slower than originally anticipated. The beginnings of domestic DAB radio in the United Kingdom can be dated from the end of 1999: in that year, a year after being awarded the licence for the only national, commercially operated multiplex, Digital One began transmitting a number of DAB stations, adding to the BBC's stations that had been broadcast since 1995. This was a relatively 'soft' launch because the BBC's stations were mostly simulcasts of its existing analogue stations, while Digital One carried simulcasts of the three analogue commercial station and just a small number of new, DAB-only stations, promising to add to that number in the coming months. DAB receiver prices remained high, and so the growth of DAB listening was slow. (The growth of digital television also had its problems at this time, including the commercial failure of terrestrial broadcaster ITV Digital.) In late 2002, the BBC added three new DAB-only stations while Digital One collaborated with electronics company Imagination Technologies to produce the first sub-£100 receiver, the Pure Evoke (Howard 2005). Thus, there were new stations to listen to,

and relatively affordable receivers on which to listen to them (though still significantly more expensive than equivalent analogue receivers). Commercial and public broadcasters together supported the establishment of the Digital Radio Development Bureau (DRDB) to coordinate and develop the marketing and promotion of DAB. The DRDB, with Digital One, conducted market research that, in 2004, forecast DAB's growth by estimating the cumulative sales of DAB receivers and the level of penetration over the following four years. In each case however, even with the benefit of experiencing relative slow growth up to 2004, the DRDB's figures significantly overestimated the pace of change in the DAB market. So, even as the most advanced DAB market in the world, with the appropriate legislation already in place for a decade, DAB was not being adopted by radio listeners as quickly as the industry had hoped.

Thus, it was against a somewhat troubled history that the Digital Radio Working Group began its deliberations, although as noted developments prior to its formation had looked more promising. However, the extent of the uncertainty about DAB was underlined within months of the DRWG's formation by two events that revealed the fragility of commercial radio companies' commitment to DAB, severely tested by the global financial meltdown. Early in 2008, Digital One's major partner, GCap, found itself under threat of a takeover by Global Radio, and decided to close its digital radio stations. Thus, the national commercial multiplex suddenly lost two stations (one was sold to a new owner and subsequently relaunched). These stations, like almost all commercial DAB stations, were making a loss, and their closure was an attempt, which turned out to be in vain, to shore up GCap's share price (Allen 2008). Global Radio was less enthusiastic

about digital radio and, after acquiring GCap, sold its 63 per cent holding in Digital One to Arqiva, which then became its sole owner.

A further difficulty came at the end of the year, shortly before the DRWG was to submit its final report. The second national commercial multiplex, which had proposed some innovative programming and thus was eagerly awaited by DAB enthusiasts, had been planned to launch that year, but in October 'Channel 4 Radio' withdrew its radio operations entirely, again citing the financial climate as the reason. Consequently, that multiplex has never begun transmission. Against this background, the DRWG's final report stressed the urgency of switchover, given the additional costs to broadcasters of maintaining two terrestrial transmission platforms, and recommended criteria to be met before switchover could be achieved: these were the minimum listening threshold and coverage levels noted earlier in this section (DRWG 2008: 18–20). In order to achieve these, the group's report emphasized a need to reform legislative requirements on commercial radio (such as a need for local programming) and to allow the merging of local multiplexes to create larger coverage areas, on the grounds that they would be more financially sustainable. It also recommended the automatic renewal of DAB licences as an incentive to invest. The DRWG report concluded that it should be possible to meet the switchover criteria by 2015, and suggested this should trigger a government announcement of two years notice of switchover. Thus, from 2017, national and larger local stations, both public service and commercial, would transmit on DAB only, while small commercial and community stations would remain on FM (or migrate from AM to FM as the case may be). As indicated above, the DRWG's recommendations were

adopted more-or-less intact by the government in drafting its Digital Britain report the following year, although the government suggested a more demanding timescale: the criteria to be met by the end of 2013, allowing switchover to take place in 2015.

Following the general election and a change of government in May 2010, the DCMS drew up a Digital Radio Action Plan (DRAP) in order to implement the proposals for switchover outlined in Digital Britain (and legislated for in that year's Digital Economy Act). A plan similar in principle had been implemented for the switchover of television, and just as a body charged with managing television switchover had been formed (Digital UK), a group was set up to manage radio's switchover; it was known as Digital Radio UK (DRUK) and in fact was headed by the same chief executive as Digital UK.

Judged by these developments alone, it would appear that the path to digital migration shared a significant level of agreement between the industry (broadcasters and equipment manufacturers) and the government (and its regulating body, Ofcom). Certainly most broadcasters and representative bodies such as the European Broadcasting Union (EBU) argue, in public at least, that radio must switch to digital (see for example Lax 2010: 79). However, broadcasters are certainly not all united in this belief. While there are inevitable disagreements over which technological system might be most appropriate for digital radio (DAB, DAB+, DRM, etc.; see Ala-Fossi 2010a) there is also some measure of disagreement about the extent to which radio will become a solely digital medium in the near future. In 2005, Ala-Fossi (2010b) and his collaborators interviewed senior figures in the radio industry across Europe, asking them to imagine radio in 2015.

Perhaps unsurprisingly, the strongest support for digital radio (and DAB in particular) was in the United Kingdom and Denmark, where DAB was already most developed, but even here there was little agreement that analogue FM would be either shut down or in an advanced state of decline. Elsewhere in Europe there was a strong belief that FM would remain a significant or even the dominant platform for radio in 2015, although in all cases radio would be heard via an increasing range of platforms.

Further evidence of the precarious commercial future of the United Kingdom's digital radio migration plan could be found by the end of 2010. Disagreements within the commercial radio industry led to some companies withdrawing from the commercial radio body, RadioCentre, while RadioCentre itself withdrew from some cross-industry meetings following an agreement between the BBC and the government to develop national DAB transmitter coverage, but with no guarantee on local DAB coverage, on which most of the commercial stations depend. (A key element of the Action Plan was that coverage levels should be increased.) This culminated in a number of commercial radio groups refusing to air a Christmas promotional campaign run by DRUK on the rather spurious grounds that it would be wrong to promote a product (DAB receivers) that would not work due to lack of signal coverage – spurious since such campaigns had aired without objection in previous years (McCabe 2010; Reid 2010). Meanwhile, in addition to the second national commercial multiplex remaining unused, none of the thirteen local multiplexes licensed during 2007 and 2008 has yet begun transmission.

The publication in 2009 of the Digital Britain report, and a tentative date of 2015 for switchover, coupled with the difficulties (albeit relatively minor, and commercial in nature) surfacing within the industry, catalysed debate about the value of DAB to the listener, a discussion that had been largely absent during the early days of DAB development.

### **The voice of the listener**

The UK Culture minister, in his introduction to the Action Plan, stated that ‘The benefits of a transition to digital for the radio industry have been well documented; both in terms of cost savings and the potential for new growth. However, the benefits for consumers are far less apparent’ (DCMS 2010: 1). The Digital Britain report brought this to the fore. In addition to media coverage that tended towards hostility to the idea of rendering analogue radios obsolescent, at the beginning of 2010 the House of Lords Select Committee on Communications conducted an enquiry into the switchover of radio, comparing it with television (House of Lords 2010). This was followed by the Consumer Expert Group’s report that addressed directly the likely impact on consumers of a switch to digital and how public awareness of digital radio might be raised (CEG 2010). The CEG, under its earlier guise as the Consumer Impact Group had already drawn up a report for the Digital Radio Working Group, and many of the concerns expressed then remained valid after the publication of Digital Britain and its aspirational timetable for switchover.

The CEG report contained a long list of concerns about the prospect of switchover from the listener’s point of view. The main ones included:

- the potential cost to listeners: the cost of replacing several radios would be greater than the TV switchover, simply because most people owned, and listened to, more radio sets
- the lack of a clear benefit to listeners: whereas switching to digital television meant an increase from four or five terrestrial channels to tens of channels, most analogue radio listeners already could receive more than ten, and sometimes many more, varied radio stations
- the lack of compelling new content: satisfaction levels with existing, analogue stations is high – 94 per cent of listeners are ‘very’ or ‘fairly satisfied’ (Ofcom 2010b: 224) – and there are only one or two DAB-only stations that appear to be attracting significant audience share
- the problems with in-vehicle listening: were switchover to take place in 2015 a very large number of vehicles would need either radio converters (re-broadcasters which receive and convert a DAB signal to a short range FM signal which the existing radio can receive) or, alternatively, a replacement radio to be fitted. In the former case, the technology was unproven, while the second option was not straightforward with many cars now having factory fitted integrated radios.

These concerns echoed the conclusions of the House of Lords committee, which considered both the lack of information available to the public, and the consequent low levels of awareness of government proposals, to be significant hindrances to switchover. While the Lords committee accepted that the switchover decision had already been made, the CEG was rather more blunt. It regarded the main driver to a digital switchover to be

commercial radio's desire to cut costs, particularly the costs of simulcasting.

Consequently, it distinguished between television switchover and the plans for radio: in the case of television there were wider public benefits (the 'digital dividend', the post-switchover freed up spectrum that would be valuable for other purposes) as well as benefits to consumers (a greater number of television channels); in the absence of both of these, in the CEG's view, radio's switchover was more about persuading, or even manipulating a reluctant audience into adopting change. It stated explicitly that with fewer discernable benefits for the listener, in comparison with television 'consumer opposition has so far been more vocal for radio' (CEG 2010: 16). It therefore saw DRUK as having a different role from its television equivalent, Digital UK. Digital UK, it suggests, was set up after television switchover had been announced, and thus its role was to offer impartial information and guide viewers in making decisions in the certainty that switchover was going to happen in the near future. Radio's switchover appeared less certain and more aspirational – according to the Digital Radio Action Plan, is to be consumer-led – in which case DRUK's role is more about persuading listeners that switchover will take place and to drive DAB take up. Thus, DRUK's campaign is more about marketing rather than information provision. CEG (2010: 46) was thus critical of DRUK's marketing, which suggested an imminent switchover and a compelling need to switch to digital radio. CEG in particular criticized the 2010 summer 'radio amnesty' campaign, in which listeners were invited to take their old analogue radios to retailers to trade in for a discount off a new DAB receiver. Whether or not one accepts that the CEG's distinction between Digital UK's and DRUK's roles is quite as clear cut as it suggests, the idea of an 'amnesty' for analogue radios is certainly a curious one. It



suggests impending danger, perhaps, an urgency, implying there is something wrong (if not actually illegal) about owning an analogue radio – indeed, the only other contexts in which amnesties have been offered to the public have been on the occasions when the police invite people to hand in illegal firearms and knives! It would be hard to conceive of such an approach as being part of a ‘public information’ campaign rather than a marketing mechanism. Consumer groups such as Age Concern and Which? reported receiving a number of enquiries from their members, confused by the amnesty campaign and believing that their analogue radios were about to stop working.

The CEG concluded by recommending that the government abandon 2015 as a target date, and revise the 50 per cent listening criterion. In particular, it suggested that 50 per cent was too low a figure to trigger the two-year notice of switchover: if it has taken a decade or more for digital radio to attract the first 50 per cent of listening, it would be unreasonable to expect the other, presumably less convinced 50 per cent to switch within two years. The CEG instead suggested that the figure should be 70 per cent of listening. It also recommended that ‘digital listening’ in this instance should mean listening to DAB radio, rather than including all digital platforms. This would compare like with like since DAB, as a terrestrial broadcast system, was a direct replacement for FM radio. Like FM, therefore, it was portable, whereas listening through a television or on the Internet was a different kind of experience, and did not incorporate the essence of radio, its mobility. Research conducted for the BBC Trust supported the importance of radio’s portability being a key defining characteristic. Focus group research suggested that,

The availability of radio services on the move (especially in-car and for those working outdoors) was felt to be of continued high importance. Participants want and expect radio to stay portable – at least the range of stations they currently have available on analogue, including BBC local stations which are critically important in-car for their local travel information. (BBC Trust 2010: 30)

This research, conducted as part of the BBC Strategy Review, demonstrated limited support for digital switchover. The dominant view was either indifference or opposition. Significantly, the research observed that most participants did not see DAB as an ‘essential’ service like Freeview (the digital terrestrial television service) and although this was due in part to a lack of awareness, it was also reflected amongst those who already owned DAB receivers. Many of these listeners had been bought DAB radios as presents, and so this did not necessarily imply an ‘opting into’ DAB, and their recipients had found the DAB experience frustrating, for example due to poor coverage or favourite stations not being carried on DAB (BBC Trust 2010: 16).

In response to the CEG, the government either rejected its recommendations, or suggested that they had been accepted and incorporated into the Digital Radio Action Plan. In particular, on whether digital listening figures should include just DAB or all digital platforms, the like for like argument was rejected on the grounds that ‘digital listening’ should measure a rejection of analogue listening, rather than the adoption of a particular digital platform. The 50 per cent figure was appropriate (rather than the CEG’s 70 per cent) since if 50 per cent of listening was to digital radio, this would imply a much

higher level of equipment in people's homes. So the CEG's concerns about the switchover threshold were not held to be warranted. Amongst the many observations made by the CEG, its report, on one hand, suggests that switchover is not currently appropriate, and so should not take place while, on another, reflects a sense that it is likely to happen anyway and so its consequences should be ameliorated. For example, at one point it states explicitly its belief that 'we consider that the Digital Radio Switchover will be imposed by Government and industry [...]' and, accepting this likely imposition, calls for a 'help' scheme for listeners to manage switchover (CEG 2010: 52).

So, while there is only limited, and often anecdotal, evidence about listeners' attitudes to digital radio and its possible replacement of analogue – and the CEG noted pointedly that, in comparison with its involvement in digital television when it was able to draw on substantial audience and market data, there was a dearth of radio research – the general sense is that there is some distance between the position of the radio industry (and its government supporters) and that of radio listeners. In particular, there exists a lack of awareness on the part of most listeners, or at least a lack of accurate and impartial information, and where awareness is high, there is general unease at the prospect of switchover. The BBC Trust (2010: 17, 30) research noted that there were 'some real DAB fans' before reporting that there would be 'much resistance' or 'strong resistance' amongst participants to the idea of switchover. DRUK acknowledges that switchover of radio is a more demanding objective than for television, but sees lack of awareness as the main barrier. It points to its own research that suggests that, once the benefits of DAB digital radio are explained, listeners are generally in favour. In particular, those that

already own DAB receivers are satisfied with sound quality (55 per cent report better-than-FM quality) and believe the choice of stations available to improve upon FM (DRUK 2010). So even though, as noted earlier, research suggests high levels of satisfaction amongst analogue radio listening, the radio industry argues that similarly high levels of satisfaction were reported by television viewers before digital services were widespread – that is, expressing satisfaction with things as they are does not mean listeners will not appreciate services they have not yet experienced. The campaign that emerged to save the digital-only ‘6 Music’ station following the BBC’s announcement in early 2010 of its impending closure suggests that new digital stations can command similar levels of loyalty to existing stations. That campaign was not only successful in saving ‘6 Music’, but large numbers of listeners discovered the station for the first time, and its listening figures increased from a weekly reach of 700,000 just before the announcement to over one million three months later. For these sorts of reasons, most in the industry believe that the key element of proceeding to a consumer-led switchover is a campaign of persuasion and explanation of the benefits of DAB.

The difficulties faced are considerable, nevertheless. As recently as 2010, Ofcom research found that one third of respondents had not heard of DAB radio, while of those currently without a DAB receiver at home (that is, 65 per cent of households in 2010) 83 per cent were unlikely to buy one in the coming year or were unsure. By far the most common reason for this (55 per cent of respondents) was that they felt ‘no need’ for DAB, while a further 32 per cent were fully satisfied with existing services (Ofcom 2010a: 18–19). There is no guarantee, of course, that listeners will take up DAB once

they are made aware of its facilities. The commercial success in the United Kingdom of analogue multichannel television (satellite services, provided by Sky, and to a lesser extent cable services) demonstrated that there was demand for more television channels, and so a potential market for digital terrestrial television. No similar evidence has been demonstrated in radio. For many listeners, television remains the principal medium consumed in the home, and radio is deemed less important (even if weekly listening hours are comparable with television viewing hours). So the sense that there is no need for digital radio, and that existing analogue services are satisfactory, may not simply be the consequence of ignorance of digital radio's supposed benefits, but may be genuinely held views that reflect the value ascribed to each medium. While household spending on television receivers rises steadily, from £26M in 2005 to £40M in 2009 (ONS 2007, 2010), spending on radio receivers has always been far less and is likely to continue to be so. Even so, the existing number of radios in each household vastly outnumbers the number of television receivers. Thus, the challenges facing the industry include the potential perception of radio's worth, or value, compounded by the huge legacy of existing, working analogue receivers which, post switchover, even if they would continue to work (in that FM transmission will continue) would no longer pick up those stations that command the huge majority of audience share. In addition, technical difficulties remain unresolved in relation to coverage and in-vehicle reception, which create further problems in persuading an already sceptical public of the wisdom of early switchover.

## **Technical uncertainties**

Any technical difficulties currently encountered by DAB radio in the United Kingdom can, in all probability, be overcome given sufficient time and appropriated targeted expenditure. In the early days of digital television there were problems with pictures freezing or set top boxes crashing; these have now largely been overcome and complaints about such occurrences are relatively rare.

Even so, as the BBC Trust research indicates, there is a gap between broadcasters' proclamations of 'digital quality sound' and listeners' day-to-day experiences. The industry long ago ceased to claim that DAB would deliver CD-quality sound (see for example Lax 2003) and now emphasizes freedom from interference and lack of hiss and crackle. Without embarking on the debate about whether, at the limit, FM sounds better than DAB or not (most people do not listen at the limit) it is generally agreed that there is little to choose between each when reception conditions are satisfactory. Nevertheless, many press reports and other anecdotal commentary (on blogs and web forums for example) note the variability of DAB reception, particularly indoors, when a DAB receiver will work in one part of the room and not another, or at least pick up different numbers of stations in different positions. While this variability is also, to some extent, a feature of analogue reception, the difference is starker with digital reception's 'all or nothing' attribute, and the fact that the loss of a single multiplex can result in the disappearance of six or more stations. This was hinted at in the Consumer Expert Group's report, prompting the government to respond that the Digital Radio Action Plan's coverage working group included measurements of indoor, outdoor and mobile signal

strength, although it did not explicitly address the variability of reception in and around the home. An increase in signal strength as coverage is generally improved will undoubtedly address this real problem for many listeners, but must surely continue to discourage others who might be considering the purchase DAB receiver, but who may have experienced this phenomenon from family or friends.

The uncertainty over in-vehicle listening is greater still, in that the difference between the current level of preparedness and eventual switchover is immense. For the DRWG report, the motor industry estimated that out of the 34M vehicles on the United Kingdom's roads about 150,000, or 0.4 per cent, had DAB receivers fitted. In-vehicle listening accounts for a little under 20 per cent of radio listening, and its importance is recognized with traffic-related features such as traffic reports carried on radio stations and related technology that allows those reports to be switched on automatically while driving (the 'traffic announcement' feature of the Radio Data System – RDS – incorporated into almost all car radios). The Action Plan seeks to ensure that DAB radios are fitted in all vehicles as standard from 2013, on the basis that a small number of manufacturers already offer DAB radios as an option, or a standard fitment on higher specification models. However, while the rest of Europe has minimal levels of DAB services, this development would apply solely to the UK market and, presumably, different radios would need to be fitted to vehicles sold in other parts of Europe (vehicle manufacturers would be reluctant to fit a DAB radio that might be perceived by customers as not working). Nevertheless, the UK motor industry describes the 2013 target as challenging, but manageable (SMMT 2010). Even were that to be met, by 2015, the industry estimates that more than twenty million

older vehicles will still have only analogue radios, and so will need a DAB converter (given the difficulties in replacing the car's existing radio the motor industry believes converters will be the primary mechanism for adapting vehicle radios to DAB). Currently there are very few such devices available, and those that exist are relatively unsophisticated, or 'first generation' as the industry told the House of Lords committee (House of Lords 2010: 170). As switchover approaches, and a date becomes clearer, the industry expects the market for converters to grow and for the quality to improve.

However, vehicle manufacturers share concerns about coverage and signal strength. Their customers, they say, are buying vehicles rather than radios, and should the radio either not work or fail to work well, the vehicle manufacturer rather than broadcaster is likely to be blamed. Given that the car is mobile, it already poses a challenge to reception where coverage is patchy, and so the industry is particularly keen that the transmitter roll-out is accelerated in order to improve coverage. Once again, the Action Plan includes a timetable for assessing signal strengths and aerial specifications, with the equipment working group due to report towards the end of 2011.

A further difficulty with DAB in vehicles is the absence, currently, of any equivalent of the RDS traffic announcement facility, which can switch a radio station (or a CD or tape) to a broadcast traffic announcement on a local station, and then switch back again when the traffic announcement has ended. As noted, analogue FM broadcasting has evolved in this way to incorporate a number of sophisticated data services, data signals being sent over the air alongside the FM audio signal. In addition to traffic announcement data, real-time traffic flow information is also received by satellite navigation devices so that



vehicles can be re-routed to avoid traffic jams. This information is carried nationally on the FM radio networks and, again, there is currently no equivalent on DAB. It is therefore not just vehicle radios that will be affected by any switchover to digital transmission but other devices too, and the motor industry has recommended that the government should find ways of ensuring the continuation of the analogue FM traffic data transmissions after switchover. The Action Plan expects the industry to produce its first report in 2011 on the options for maintain such an FM traffic service, while exploring the options for developing an equivalent for DAB receivers.

There is little doubt that solutions can be found to these challenges, but where doubt exists is whether they can be met in time for a 2015 switchover. At the time of writing, the developments identified in the Action Plan as necessary for switchover to happen are in their infancy. If drivers are to go to the expense and effort of installing converters for car radios, and possibly replacing satellite navigation equipment for a DAB-compatible equivalent, there will need to be some certainty that new systems work, are reliable and are affordable. In addition, with other European countries far behind the United Kingdom in their development of digital radio, full compatibility with analogue FM will be required (most vehicles are designed for at least a European market) and, indeed, full compatibility with the newer digital radio standards such as DAB+ and DMB that European countries are beginning to adopt. Specifications for multi-standard digital radio receivers, announced in 2010 by the WorldDMB Forum, have not received universal support, and there remain a number of receivers in manufacture, both in-vehicle and for the home, which do not support multiple digital radio standards.

The overwhelming sense then is of unreadiness for switchover. The Digital Radio Action Plan certainly details a clear timetable leading up to switchover, but many of the issues it seeks to resolve, such as indoor coverage levels and in-vehicle technology, have been points of concern for a number of years. It is widely acknowledged that the statement of a target date in the Action Plan is intended to galvanize all sections of the industry in order to resolve outstanding problems; it remains to be seen to what extent it will be successful in this.

### **No switchover: A possibility?**

It is possible that simulcasting could continue beyond 2015, indeed for some considerable time. Technical developments continue to add functionality to both analogue and digital radio. The FM-based RDS system, for example, includes a relatively recent enhancement, Radio Text plus or RT+, which allows scrolling text to be sent to suitably equipped receivers, containing details such as programme names or song titles, or descriptions of the type of programme. This of course is little different from the information provided on the screens of DAB receivers. RadioDNS is a development emerging during 2010 that links broadcast radio stations to web content, so that while listening to a radio station on a computer or mobile phone, related visual content such as pictures of presenters, station logos or studio webcam images can be delivered via the Internet – this works with analogue FM as well as with digital radio. In other words, FM remains a far from obsolete technology, rather, one which continues to be enhanced. Though these might be marginal enhancements in comparison with radio's main function, the provision of

broadcast sound, it is significant that technical investment continues in the analogue domain and undermines a little the sense that the only way to develop radio is to switchover to an all-digital system. This should not be overstated – DAB undoubtedly can deliver far more functionality via its data stream than could ever be incorporated into FM and RDS – but if radio is first and foremost about listening (the full functionality of RDS has been rarely exploited by receiver manufacturers, or listeners) then the primary reason for switching to DAB must be the availability of new, compelling stations.

There is little doubt that in future, radio will be heard on a multiplicity of platforms. Digital listening is already increasing its share of the audience as listening through digital television and the Internet slowly become part of the everyday radio landscape (recall though that, at 4 per cent and 3 per cent share, respectively, these remain very small segments of overall listening). While radio's portability is valued, still much of our listening remains in a fixed place (even if on a 'portable' radio, that radio is often not moving) and so such reception paths are likely to become part of the mix. The Internet, though, cannot support mass broadcast radio, and so will serve niche audiences. For example, the BBC transmits its classical music station, 'Radio 3', on FM, on DAB, and it also streams in so-called high definition sound via the Internet to satisfy those who wish to hear classical music at higher audio quality. These audiophiles, the 'golden ears' as the audio engineers describe them, who typically will link their computers to a hi-fi system to benefit fully from the audio quality, are fortunately relatively few in number, and so can be served by the BBC's data streams. For the BBC, this permits them to continue to transmit 'Radio 3' on DAB to the majority of its listeners at what some would consider

inferior sound quality. Thus, radio will no longer be considered as a single, specific form of content, but will become multi-faceted: high-quality sound for some, lower-quality sound for others, in some cases visual, in others mobile. No single platform will allow for all of these possibilities and thus radio need not be associated exclusively with any particular transmission platform. In such a scenario, there is no reason why FM and DAB might not be considered as mutually compatible: FM continuing to serve the outer reaches of the UK population and those listening in vehicles, while DAB offers additional functionality and some additional stations to those within range of its signals.

Furthermore, in contrast with the case of television, there is no digital dividend: there is no incentive to switch off analogue FM transmissions on the basis of freeing up valuable spectrum. The VHF Band II frequencies currently used by FM do not lend themselves readily to alternative uses, whereas the UHF spectrum freed up by the switching off of analogue television is valuable for use in telecommunications. With television, analogue switch off also permits the digital signals to be increased in power, making digital television reception more robust; with digital and analogue radio operating in two distinct, well separated frequency ranges, there is no similar benefit to be had. Thus, there are no technical reasons why DAB and FM should not coexist in the long term: the Digital Britain report described the continuation of FM as allowing the emergence of a 'new tier of radio', that is community and small-scale commercial radio, implying its continuation at least for the medium term (DCMS 2009: 110).

It remains the case that few countries are considering digital switchover (far less, analogue switch off) of radio. Many countries, particularly smaller states, continue to

struggle to make progress with television switchover (see for example Murphy 2010). Yet digital television switchover is, for most governments, far more of a priority than radio switchover. In addition to the technical reasons relating to freed up spectrum, the introduction of digital television was enmeshed as it emerged in the 1990s within the rhetoric about the information society, as new, progressive governments were elected in Europe and in the United States and constructed visions of a bright, technological future (see for example Galperin 2004; Lax 2009b: 125–28). The television set was universal and at the centre of everyone's home, unlike the computer, which at the time was in use in barely half of households. Thus, the digitalization of television, with all the data flow that implied (in addition to just television) would provide the gateway to the information society for those who were otherwise likely to end up on the wrong side of the digital divide. Thus, there were significant political objectives in the digitalization of television, as well as considerable economic benefits to be found, circumstances that made television switchover very likely to happen, and circumstances that do not exist in radio.

Few disagree that DAB is successful as a radio technology and that, like digital television, it can deliver far more than its analogue equivalent. At the time of its gestation, in the 1980s when the Eureka 147 research and development programme began, it would have seemed logical that this system would form a direct replacement for FM. In the decade that passed during its development, analogue radio in the United Kingdom and elsewhere changed: the number of stations available to listeners increased, and the geographical size of those stations in many cases became smaller; RDS enhanced in-vehicle listening. DAB, when it emerged in the mid- to late 1990s, was less clearly a

‘complete solution’ for broadcast radio. Since that time it has continued to grapple with this difficulty, and the uncertainty engendered has delayed the development of solutions to some of the other technical problems described above. Although there are no real obstacles to FM and DAB coexisting, this does not preclude the possibility that in the future DAB might be chosen to replace FM, or at least push it to one side, and become the platform for national public and many local radio stations. The Digital Radio Action Plan, drawn up by the government and radio industry, sees this precisely as its goal. With so many unresolved questions, and the lack of preparedness of parts of the industry, and to a far greater extent on the part of the public, it is difficult to disagree with the Consumer Expert Group’s view that were switchover to be announced as early as 2013, it would probably be by ‘imposition’, led by commercial judgements rather than a consumer-led decision. Whether this makes a 2015 switchover any less likely will depend on some very difficult political judgements in the coming years.

## **References**

Ala-Fossi, M. (2010a), ‘The Technological Landscape of Radio’, in B. O’Neill, M. Ala-Fossi, P. Jauert, S. Lax, L. Nyre and H. Shaw (eds), *Digital Radio in Europe: Technologies, Industries and Cultures*, Bristol: Intellect, pp. 43-65.

\_\_\_\_ (2010b), ‘Future Scenarios for the Radio Industry’, in B. O’Neill, M. Ala-Fossi, P. Jauert, S. Lax, L. Nyre and H. Shaw (eds), *Digital Radio in Europe: Technologies, Industries and Cultures*, Bristol: Intellect, pp. 153-71.

Allen, K. (2008), 'Capital Radio owner seeks to cut its way to growth', Guardian, 12 February, p. 23.

BBC Trust (2010), BBC Strategy Review: Stage Two Research, London: BBC Trust.

CEG (2010), 'Consumer Expert Group', Digital Radio Switchover: What is in it for Consumers?, London: DCMS.

DCMS (2009), Digital Britain: Final Report Cm 7650, London: DCMS/BIS.

\_\_\_\_\_ (2010), Digital Radio Action Plan, Version 2, London: DCMS/BIS.

DRUK (2010), Written evidence submitted to the House of Lords Select Committee on Communications inquiry into digital switchover of television and radio in the United Kingdom, HL Paper 100, London: The Stationery Office

DRWG (2008), Digital Radio Working Group Final Report, London: DCMS.

Galperin, H. (2004), New Television, Old Politics, Cambridge: Cambridge University Press.

House of Lords Select Committee on Communications (2010), Digital switchover of television and radio in the United Kingdom, HL Paper 100, London: The Stationery Office.

Howard, Q. (2005), 'DAB Digital Radio: a Recipe for Success', EBU Technical Review, 303 July.

Jauert, P., Lax, S., Shaw, H. and Ala-Fossi, M. (2010), 'DAB: The Future of Radio? The Development of Digital Radio in Europe', in B. O'Neill, M. Ala-Fossi, P. Jauert, S. Lax, L. Nyre and H. Shaw (eds), Digital Radio in Europe: Technologies, Industries and Cultures, Bristol: Intellect, pp. 99-119.

Lax, S. (2003), 'The Prospects for Digital Radio: Policy and Technology for a New Broadcasting System', Information, Communication & Society, 6:3, pp. 326-49.

\_\_\_\_ (2009a), 'Digital Radio and the Diminution of the Public Sphere', in R. Butsch (ed.), Media and Public Spheres, Basingstoke: Palgrave Macmillan, pp. 109-21.

\_\_\_\_ (2009b), Media and Communication Technologies: A Critical Introduction, Basingstoke: Palgrave Macmillan.

\_\_\_\_ (2010), "'A Vision for Radio.'" Engineering Solutions for Changing Audiences: from FM to DAB', in B. O'Neill, M. Ala-Fossi, P. Jauert, S. Lax, L. Nyre and H. Shaw



(eds), *Digital Radio in Europe: Technologies, Industries and Cultures*, Bristol: Intellect, pp. 67-84.

McCabe, M. (2010), 'RadioCentre quits DAB negotiations', *Campaign*, 5 November, p. 2.

Murphy, K. (2010), 'Digital Television Policy and Regulatory Neutrality in Small Western States: Ireland, Greece, Finland, Austria and New Zealand', *International Journal of Digital Television*, 1:2, pp. 155–71.

Ofcom (2004), *Radio – Preparing for the Future. Phase 1: Developing a New Framework*, London: Ofcom.

\_\_\_\_ (2010a), *The Communications Market: Digital Radio Report 2010*, London: Ofcom.

\_\_\_\_ (2010b), *Communications Market Report 2010*, London: Ofcom.

O'Neill, B. and Shaw, H. (2010), 'Radio Broadcasting in Europe: The Search for a Common Digital Future', in B. O'Neill, M. Ala-Fossi, P. Jauert, S. Lax, L. Nyre and H. Shaw (eds), *Digital Radio in Europe: Technologies, Industries and Cultures*, Bristol: Intellect, pp. 27-42.

ONS (2007), *Family Spending 2006 Edition*, Basingstoke: Palgrave Macmillan.

\_\_\_\_\_ (2010), Family Spending 2009 Edition, London: Office for National Statistics, Basingstoke: Palgrave Macmillan.

Reid, A. (2010), 'Media forum: should radio back digital?', Campaign, 3 December, p. 22.

Smith, Lord (2005), Digital Radio Switchover: A Report Commissioned by the DRDB, London: Digital Radio Development Bureau.

SMMT (2010), Written evidence submitted to the House of Lords Select Committee on Communications inquiry into digital switchover of television and radio in the United Kingdom, HL Paper 100, London: The Stationery Office.

**Contributor details:**

Stephen Lax is senior lecturer in Communications Technology at the Institute of Communications Studies, University of Leeds, UK. He is a member of the Digital Radio Cultures in Europe research group (drace.org) and chair of the MeCCSA Radio Studies Network. Recent publications include *Media and Communication Technologies: A Critical Introduction* (Palgrave Macmillan, 2009) and joint authorship of *Digital Radio in Europe: Technologies, Industries and Cultures* (Intellect, 2010).

**Contact:**

e-mail: [S.E.Lax@leeds.ac.uk](mailto:S.E.Lax@leeds.ac.uk)