

serious about charting a meaningful path forward for AM radio broadcasting in our convergent media environment, it needs to look beyond the status quo.

II. 13-249 IS AN INAPPROPRIATE VENUE FOR MAKING CONSTITUTIVE DECISIONS ABOUT RADIO'S DIGITAL TRANSITION

Although the Commission's reference to radio's digital transition was confined in its initial NPRM to a tangential mention, it did encourage interested parties "to submit comments in this docket for the purpose of advancing these and other specific proposals to revitalize the AM service."² The proper venue for advancing any aspect of radio's digital transition is not this Docket, but rather MB Docket No. 99-325—the Commission's ongoing rulemaking proceeding on radio's digital transition.

In previous instances, where commenters in related broadcasting Dockets have raised questions regarding HD Radio and its regulation, the Commission has directed discussion to Docket 99-325.³ Considering that the question in this proceeding opens the door to a fundamental transformation of the AM band through full digitalization, it is only fair that this discussion should take place in the Docket where all other constitutive decisions about digital radio broadcasting have been made.⁴ Given the paucity of comments tendered in the instant

2. Federal Communications Commission, *Notice of Proposed Rulemaking*, RM 13-249, October 31, 2013, p. 20.

3. Federal Communications Commission, *Report and Order*, MB Docket No. 07-172, June 29, 2009, p. 8, footnote 47.

4. Media historian Paul Starr first articulated the notion of constitutive decisions: they are "decisions made during the creation of media systems that affect "how things are built and how they work—their design and rules of operation." Constitutive decisions are often made through a process of "slowly crystallizing cultural practices or gradual economic and political change," but in some cases they arise in "bursts set off by social and political crises, technological innovation, or other triggering events, and at these pivotal moments the choices may be encoded in law, etched into technologies, or otherwise embedded in the structure of institutions." See Paul Starr, *The Creation of the Media: Political Origins of Modern Communications* (New York: Basic Books, 2004), p. 4.

proceeding, relative to the participation of both the industry and public that has occurred in 99-325, the Commission would be wise to bring the robust constituencies and perspectives in that Docket to bear when considering such a significant endeavor opening the door to making the AM band fully digital, voluntarily or otherwise.

It is my belief that proponents of HD Radio hope you will make a constitutive decision on HD adoption outside the proper venue because they understand that the conditions of radio's digital transition, as defined in MB 99-325 via principles of marketplace adoption,⁵ do not meet the criteria for the service's regulatory advancement. Sound policy is not made through sideways means.

III. HD RADIO AND MARKET MALAISE

In Comments filed in this proceeding, the proprietor of HD Radio, iBiquity Digital Corporation, claims that “the commercial rollout of HD technology is well established,” citing adoptive figures above 2,000 for radio stations (including 340 AM stations) and “approximately 17.5 million HD Radio receivers in circulation,” highlighting in particular the adoptive trend in automobiles as proof of market demand.⁶ These numbers are inaccurate and inflationary.

HD Radio's adoptive rate among broadcasters more broadly peaked in 2005-06 and has been in steady decline ever since. FCC and iBiquity records only track the number of stations that have licensed or applied to use the technology—not those who have abandoned it. In fact, in 2012 total broadcast-adoption turned negative for the first time, meaning more stations turned HD off than on that year. In reality, the actual number of U.S. radio stations broadcasting in HD is fewer than 2,000 (or about 13% of all full-power radio stations) and the abandonment has been

5. Federal Communications Commission, *Second Report and Order, First Order on Reconsideration and Second Further Notice of Proposed Rulemaking*, MM 99-325, May 31, 2007, p. 8.

6. Comments of iBiquity Digital Corporation, RM 13-249, January 22, 2014, p. 2.

most extreme on the AM dial.⁷ A collaborative attempt to track actual AM-HD usage finds that only half of the stations iBiquity claims have adopted HD actually still use it; the majority of those do not broadcast in HD at night.⁸

iBiquity chooses to emphasize automotive receiver uptake because, in all honesty, it is the only sign-of-life it can point to regarding receiver adoption. There is no such thing as a real market for HD-compatible radio receivers outside of automobiles (currently enjoying a penetration-rate of about 2%), and among auto manufacturers HD Radio's adoptive rate pales in comparison to other technologies such as streaming audio delivery services. iBiquity itself doesn't expect to see HD Radio reach meaningful marketplace saturation in automobiles until the end of the decade at the earliest.⁹ Moreover, the inclusion of HD Radio is not a meaningful driver of automobile sales; the product comes with the car/truck/van, thus the actual listener uptake of HD is passive, and some automakers now include the ability to turn HD reception off due to its underperformance in the real world. In its most recent automotive issue, *Consumer Reports* recommended HD Radio as one of three automotive technologies to avoid when purchasing a new car.¹⁰

In fact, the record in this proceeding is replete with comments from broadcasters, engineers, amateur radio operators, and radio listeners that illustrate the depth of HD Radio's market malaise on multiple levels. Several detail the interference that AM-HD transmissions presently cause across the country, detrimentally affecting not only local, lower-powered

7. Anderson, *Radio's Digital Dilemma*, p. 135-140.

8. See Comments of Scott D. Fybush, RM 13-249, January 22, 2014, p. 14-15, and Barry McLarnon, "AM IBOC Stations on the Air," January 28, 2014, <http://topazdesigns.com/iboc/station-list.html>(March 16, 2014).

9. Anderson, *Radio's Digital Dilemma*, p. 142-147.

10. John Anderson, "Clashing Realities: iBiquity vs. *Consumer Reports*," *DIYmedia.net*, March 4, 2014, <http://diymedia.net/wordpress/2014/03/04/clashing-realities-ibiquity-vs-consumer-reports/>(March 16, 2014).

stations' coverage areas but listenability across the entire AM dial,¹¹ in direct contravention to iBiquity's preemptive claims that this is a non-issue.¹² This is primarily due to the fact that an analog/digital hybrid AM-HD signal occupies 30 kHz of spectrum as opposed to the 10 kHz occupied by analog alone; even in the all-digital configuration, an AM-HD signal occupies twice the spectrum than the FCC's existing channel allocation regime presently allows for.¹³ The Commission's ongoing digital radio proceeding has already redefined the notion of what "channel" and "interference" fundamentally mean¹⁴ in order to accommodate the HD system in other settings, and set the bar for tendering actionable interference complaints so high as to be able to wholly ignore them.¹⁵ But the record here suggests that AM-HD has significant technical and operational concerns that to do not merit such free-wheeling, radical experimentation as all-digital operation at this time. In fact, some commenters suggest that the FCC step back and do an interference inventory of the AM band before implementing any revitalization initiative and, as

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11. See Comments of James B. Potter et al., RM 13-249, March 14, 2014, p. 8-9; Comments of John S. Gilstrap, RM 13-249, January 24, 2014, p. 2; Comments of Cris Allen, RM 13-249, January 22, 2014; Comments of Scott D. Fybus, RM 13-249, January 22, 2014, p. 15; Comments of Jonathan E. Hardis, RM 13-249, January 22, 2014, p. 29-30; Comments of Joseph E. Talbot, RM 13-249, January 22, 2014, p. 1; Comments of Word Power, Inc., RM 13-249, January 22, 2014, p. 1; Comments of Dana J. Pupolo, RM 13-249, January 14, 2014, p. 1; Comments of Grant County Broadcasters, Inc., RM 13-249, January 13, 2014, p. 2; Comments of Frederick R. Vobbe, RM 13-249, January 13, 2014, p. 8; Comments of Burt I. Weiner Associates, RM 13-249, January 7, 2014, p. 2; Comments of Mark Heller, RM 13-249, December 19, 2013, p. 3.
 12. Comments of iBiquity Digital Corporation, RM 13-249, January 22, 2014, p. 6-7.
 13. See Comments of David L. Hershberger, RM 13-249, January 22, 2014, p. 3, and Anderson, *Radio's Digital Dilemma*, p. 49-52.
 14. Comments of Jonathan E. Hardis, RM 13-249, January 22, 2014, p. 11-21.
 15. See Federal Communications Commission, *Public Order*, MM 99-325, January 29, 2010, p. 10-12, and Anderson, *Radio's Digital Dilemma*, p. 102, 123-124.

part of such a study, the agency should attempt to quantify just how much of the base noise on the dial is due to extant AM-HD broadcasting before it proposes to sanction more of it.¹⁶

Market adoption of HD Radio is also stymied by iBiquity's proprietary business model, which requires hefty one-time and recurring license fees from broadcasters, a la Microsoft, for the privilege of broadcasting in HD mode. iBiquity has been very clear about the motives behind this unorthodox application of software-style licensing to broadcast technology, and the FCC explicitly made HD adoption voluntary because of this business model.¹⁷ Some commenters in this proceeding object to any further adoption of HD, all-digital or otherwise, based on the burdens this business model imposes on broadcasting.¹⁸ These include broadcasters who note that HD's proprietary nature makes it uneconomical for many stations to adopt in small and medium-size markets,¹⁹ especially in cases where the cost of HD is greater than the AM station's actual value.²⁰ Coupled with similar licensing terms that have disincentivised the construction of compatible receivers, and no sign of life in the mobile device marketplace for AM radio (much less HD Radio), there are no credible market indicators to suggest that additional commitments to HD broadcasting, such as all-digital adoption on the AM band, warrant such consideration at this time.²¹

16. See Reply Comments of James B. Potter, et al., RM 13-249, March 4, 2014, p. 8-9; Comments of David L. Poole, RM 13-249, January 23, 2014, and Comments of Scott D. Fybush, RM 13-249, January 22, 2014, p. 16.

17. Anderson, *Radio's Digital Dilemma*, p. 56-60, 81.

18. See Comments of Lloyd Bankson Roach, RM 13-249, January 28, 2014, p. 4; Comments of John S. Gilstrap, RM 13-249, January 24, 2014, p. 3; Comments of the Broadcast Maximization Committee, RM 13-249, January 22, 2014, p. 3.

19. Comments of Carthage Broadcasting Company, RM 13-249, January 22, 2014, p. 8-9.

20. Comments of Brian J. Henry, RM 13-249, December 23, 2013, p. 5-6.

21. See Comments of Christopher J. Gay, RM 13-249, February 11, 2014, p. 2; Comments of John Pavlica, Jr., RM 13-249, December 13, 2013, p. 7; and Comments of Nickolaus E. Leggett, RM 13-249, November 7, 2013, p. 2.

IV. REVITALIZING RADIO'S DIGITAL TRANSITION

No broadcaster has filed comments in this proceeding pledging any meaningful commitment to an all-digital transition on the AM band,²² and one broadcaster qualifies their hypothetical enthusiasm for a digital AM transition provided that a receiver mandate is part of the policy process,²³ which would all but cripple such an initiative politically. Only Clear Channel and Mount Wilson FM Broadcasters suggest any support for even a voluntary digital transition—and Clear Channel is only willing to move in that direction provided it retains the right to revert to analog or hybrid broadcasting if its foray fails.²⁴ Without meaningful industry consensus on the notion that all-digital AM-HD broadcasting can and should be the natural end-state of radio's digital transition, any consideration of all-digital AM-HD broadcasting is extremely premature at this time. At this point in the transition, half-measures are simply not helpful.

Furthermore, no credible evidence exists that the adoption of all-digital AM-HD broadcasting will materially change anything regarding HD's adoptive trajectory more broadly. iBiquity's claims of multicasting functionality for all-digital AM-HD promotes vaporware for which no publicly-available technical documentation exists.²⁵ The National Association of Broadcasters references a smattering of short-term tests involving all-digital HD on a handful of

22. Even the notion of a planned transition defined through regulatory means has little support, save Comments of Cavell, Mertz & Associates, Inc., RM 13-249, January 22, 2014, p. 5-6.

23. Comments of Bryan Broadcasting Corporation, RM 13-249, January 22, 2014, p. 2.

24. See Comments of Clear Channel Communications, Inc., RM 13-249, January 22, 2014, p. 17-18, and Comments of Mount Wilson FM Broadcasters, Inc., RM-13-249, January 22, 2014, p. 3.

25. Comments of iBiquity Digital Corporation, RM 13-249, January 22, 2014, p. 6.

AM stations in this proceeding,²⁶ but has yet to publish any meaningful results from these tests and does not plan to do so for the foreseeable future.²⁷ The fact that iBiquity has so many caveats to its support for other, more meaningful technical measures to improve analog AM broadcasting, *provided they do not inhibit the digital rollout*, says more about the tenuous functionality of the AM-HD system than it does about the merits of the all-digital proposal itself.²⁸

The Commission's ongoing digital radio proceeding is particularly notable for the sheer lack of objective, empirical technical evidence on which it has been based, and for the relative opacity under which technical discussions and certifications have been made. For HD Radio to have any semblance of a credible adoptive future, the Commission must engage more closely with the development, testing, and evaluation of HD Radio technology and its relative standing in our convergent media marketplace to better understand its fundamental strengths and weaknesses.²⁹ It should not be hornswoggled into a nationwide commitment to advance a digital broadcast technology currently in the throes of market malaise through incremental means such as the sanctioning of all-digital broadcasting on the AM band.

The relative silence with which the industry has greeted the idea of all-digital broadcasting is telling. Yet the record in this proceeding is full of commenters, including

26. Comments of the National Association of Broadcasters, RM 13-249, January 22, 2014, p. 19-20.

27. See John Anderson, "Initial AM-HD All-Digital Test Results," *DIYmedia.net*, May 1, 2013, <http://diymedia.net/wordpress/2013/05/01/initial-am-hd-all-digital-test-results/> (March 16, 2014), and Anderson, "Firming the Foundation for an All-Digital AM Mandate," *DIYmedia.net*, October 23, 2013, <http://diymedia.net/wordpress/2013/10/23/firming-the-foundation-for-an-all-digital-am-mandate/> (March 16, 2014).

28. Comments of iBiquity Digital Corporation, RM 13-249, January 22, 2014, p. 3-5.

29. See Anderson, *Radio's Digital Dilemma*, p. 3-7, 89-104, 157-160.

broadcasters, who tactfully suggest that HD broadcasting on AM be “revisited”³⁰ to reassess the viability and sustainability of the system itself, in light of the fact that “[i]t still remain to be seen whether HD will ultimately prove to be successful,”³¹ while others believe that not only should all-digital HD transmission on AM be disallowed, but the entire system should be abandoned, at least on the AM band.³²

If the Commission is prepared to acknowledge the market failure of HD Radio, then regulatory intervention would be necessary. Even if such a determination might be premature at this juncture, the Commission *can* entertain consideration of and experimentation with *other* all-digital radio systems in this proceeding, especially since it foreclosed the consideration of alternative technologies in Docket 99-325.³³ One potential digital broadcast alternative is Digital Radio Mondiale (DRM), an open-source standard that fits within existing analog broadcast allocation regimes and provides meaningfully qualitative improvement and diversity to radio program content.³⁴ I am surprised by the number of commenters in this proceeding to raise the consideration of Digital Radio Mondiale and would suggest that they represent the manifestation

30. See Comments of Burt I. Weiner Associates, RM 13-249, January 7, 2014, p. 5.

31. Comments of National Religious Broadcasters, RM 13-249, January 22, 2014, p. 3.

32. See Comments of Comments of Edward P. De La Hunt, RM 13-249, March 11, 2014, p. 1; Comments of Lloyd Bankson Roach, RM 13-249, January 28, 2014, p. 4; Comments of Sam Brown, RM 13-249, January 22, 2014, p. 9; Comments of the National Alliance of AM Broadcasters, RM 13-249, January 22, 2014, p. 2; Comments of Dana J. Pupolo, RM 13-249, January 14, 2014, p. 1; Comments of Frederick R. Vobbe, RM 13-249, January 13, 2014, p. 9; Comments of the Broadcast Warning Working Group, RM 13-249, January 2, 2014, p. 5; Comments of Harry B. Ruhweidel, RM 13-249, December 9, 2013, p. 2, 4; Comments of David Dybas, RM 13-249, November 27, 2013.

33. Federal Communications Commission, *Report and Order*, MM 99-325, October 10, 2002, p. 17.

34. See John Anderson, “Expanding the Options for Digital AM,” *DIYmedia.net*, June 6, 2013, <http://diymedia.net/wordpress/2013/06/06/expanding-the-options-for-digital-am/> (March 16, 2014), and Paul Thurst, “Digital Radio Mondiale, an alternative to HD radio?,” *Engineering Radio*, September 23, 2010, <http://www.engineeringradio.us/blog/2010/09/digital-radio-mondiale-an-alternative-to-hd-radio/> (March 16, 2014).

of a hunger within the industry to move well beyond the status quo regarding radio's digitalization.³⁵ The economic implications of such an inquiry are not as significant as HD proponents might have you believe: some transmitter-manufacturers already sell AM transmitters that are cross-compatible with AM-HD and DRM,³⁶ while DRM itself notes that interoperable receiver chips confine worries about receiver-side confusion to the short term.³⁷ Although no meaningful receiver base exists for DRM in the United States, its potential adoptive trajectory outclasses HD's because DRM already has regulatory buy-in from some of the world's most dynamic economies, such as China, Brazil, and India, with AM and Shortwave being the bands of first investment.³⁸

Given the demand-indicators for Digital Radio Mondiale among broadcasters and members of the public in this proceeding, even the suggestion of such competition may inspire the proprietors and proponents of HD Radio to confront and overcome the fundamental dilemmas which inhibit the system's uptake and thereby improve its own prospects.

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35. See Comments of University of Northwestern – St. Paul, RM 13-249, January 22, 2014, p. 7; Comments of David L. Hershberger, RM 13-249, January 22, 2014, p. 3; Comments of Alan Hughes, RM 13-249, January 22, 2014, p. 1-2; Comments of WRDN-1430AM, RM 13-249, December 27, 2013, p. 2; and Comments of Brian J. Henry, RM 13-249, December 23, 2013, p. 6.

36. See the GatesAir Flexiva DAX™ line of AM transmitters, <http://www.gatesair.com/products/transmit-radio/am-transmitters/flexiva-dax.aspx> (March 19, 2014).

37. Comments of Digital Radio Mondiale, RM 13-249, February 24, 2014, p. 1.

38. Anderson, *Radio's Digital Dilemma*, p. 164-166.