



PARADIGM SHIFT: WHY RADIO MUST ADAPT TO THE RISE OF DIGITAL

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I grew up in the radio industry and started my career as a DJ, which gave me proximity to many of the artists I loved and my first visibility into the workings of the music industry. During music's long, technology-driven disruption and transition from shiny things that spin to the dominance of on-demand streaming, music became ubiquitous. Music is everywhere, in everything, as far away as your smartphone and as close as the sound of your own voice. I've long wondered about the prognosis for AM/FM radio in general and music radio in particular during this long transition. Writing this paper gave me an opportunity to think about radio's changing role in the American musical diet, and the sources and effects of that change on music, on radio and on us.

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I. EXECUTIVE SUMMARY

1. **A New Challenge:** AM/FM radio has been a resilient medium in the Internet era, but that resilience is weakening. While it was able to survive and adapt to the introduction of television, new digital services are beginning to change the way people listen to music, endangering radio once again.

2. **From Tastemaker to Validator:** Record labels and key industry charts are flocking to digital in search of tastemakers and breaking music. Increasingly, digital plays are being integrated into radio-driving charts like the Billboard Hot 100 and touted in trade ads seeking spins for new songs, weakening radio's traditional role as a minter of hits.

3. **Dawn of the Digital Generation:** Gen Z music fans, born in 1995 or later, are embracing digital formats at the expense of radio use. Having grown up as true digital natives, this generation is uninterested in AM/FM radio and prefers the increased interactivity and personalization of digital services like Spotify and Pandora.

4. **Discovery Migration:** Radio is declining as a source to discover new music. Younger music fans are increasingly turning to sites like YouTube to find new artists and songs, leaving radio in the lurch.

5. **Revenue, or Lack Thereof:** Broadcast stations pay no royalties to record labels for

the use of master recordings. Digital services, by contrast, are a source of discovery *and* revenue.

6. **Dashboard Invasion:** Cars, once the bastion of AM/FM radio, have now introduced competition to the dashboard, decreasing radio listenership. As newer models with improved technology continue to proliferate, radio is being pushed further and further from the center of in-car entertainment systems as drivers demand choice and access to more customized, often commercial-free, digital services.

7. **Talking Is Not the Cure:** Smart speakers like the Amazon Echo have sparked a new opportunity for audio-only entertainment in the home and are shaping consumer practices and preferences. Unlike cars and traditional home audio receivers, smart speakers access wi-fi networks and don't have an AM/FM antenna at all. Without a strong digital presence, and a focus on digital streaming services, traditional broadcasters are going to be left behind in this critical and growing part of the market.

8. **Improper Measurement:** Radio's ratings system can be gamed and fails to deliver on the specifics that advertisers demand. Nielsen's current system, reliant on Portable People Meters (PPMs) in top markets, fails to take into account the

passion a listener feels toward specific stations, under-samples younger and ethnic demographic groups, and has led to the mass format changes by stations devoted to softer music genres that can't mask the PPM

signal in noisier music, and led to a race for technology-driven advantages that allows richer stations to buy bigger ratings.

II. INTRODUCTION

1. Radio has been historically resilient when confronted with new competitive technology. When faced with new competition in the form of television, radio adapted and became portable, capitalizing on the invention of the transistor and an increased focus on local content.

2. However, that resilience is weakening.¹ Radio, and music radio in particular, is now falling behind as audiences have begun to move on and listen to music on Spotify, Pandora, YouTube and other digital services via smartphones at listening locations and times of day that have been radio's exclusive province for nearly a century: in the car and during drive time. Car manufacturers are transitioning vehicles to be digitally compatible. Many models now come with built-in Bluetooth technology and other easy ways to integrate hand-held mobile devices, enabling drivers to listen to digital services, while other newer models are "connected cars" with built-in support for these digital services. These advances are essentially turning the car into an interactive, digital, mobile media device. Radio is facing competition of virtually unlimited choice, exactly where it has enjoyed a virtual monopoly since the first commercially

successful car radio was first introduced in 1930.²

3. AM/FM radio had been able to wait out the digital disruption that has already affected every other form of media. Now radio is the latest industry facing massive disruption from the digital age. To survive, radio must innovate, learn from other media and take control of its path to maintain its unique position with advertisers, audiences and other stakeholders into the third decade of this century and beyond.

4. The structure of this white paper is as follows: In section III, we look at how the relationship between radio and record labels has changed in recent years. In section IV, we examine current research on the rapidly developing connected car and smart speaker markets. In section V, we discuss the shortcomings of the ratings system and how radio is failing to grow spot revenue while at the same time losing "favoriteness" among younger listeners. We'll also reveal illuminating new insights from MusicWatch on teen listening. A summary follows in section VI.

¹ Madalena Oliveira, Gryna Stachyra, and Guy Starkey, Radio: The Resilient Medium: Papers From the Third Conference of the Ecrea Radio Research Section (2014).

² Justin Berkowitz, *The History of Car Radios*, CAR AND DRIVER (Oct. 2010), <http://www.caranddriver.com/features/the-history-of-car-radios>, retrieved 8-18-17.

III. THE CHANGING RELATIONSHIP BETWEEN RADIO AND RECORD LABELS

5. Radio has great reach, and most of what's on radio is music.³ Music stations comprise about three-quarters of American commercial radio stations, and music drives about three-quarters of radio's over-the-air advertising revenues.

6. In the past, radio along with television, print and in-store play exposed fans to new music. However, the music industry is now less dependent on radio as a source of music discovery and exposure. As the music market accelerates its transition from a sales model to a streaming-driven access model, radio's contribution to music business revenue in the form of driving record sales in all formats has declined significantly.

“However, the music industry is now less dependent on radio as a source of music discovery and exposure.”

7. Streaming now provides record labels the majority of their revenue, as well as directly impacting the Billboard Hot 100 chart.⁴ Radio is now less of a tastemaker and more of a validator of the biggest hits often

discovered on streaming music platforms. Younger music fans are not turning to radio first for music discovery, and the music industry is responding.

“Radio is now less of a tastemaker and more of a validator of the biggest hits often discovered on streaming music platforms.”

8. The addition of streaming data to the Billboard Hot 100 chart, which both reflects and drives hit radio playlists, means that streaming is now playing an important part in determining which songs are played on radio rather than the other way around, reducing its status as a taste-making tool. In fact, streaming now accounts for 20-30% of the data that comprises the Hot 100, with sales at 35-45% and airplay at 30-40%.⁵ Streaming data was first added to the Billboard Hot 100 singles chart in 2007, when nascent streaming services like AOL Music and Yahoo Music were available in the U.S. After Spotify's arrival in 2011, Billboard launched the On-Demand Songs chart and

³ BIA/Kelsey's database covers both Nielsen-rated and non-rated markets and delivers information on 25,000 commercial and non-commercial radio stations. BIA/Kelsey's data is drawn from its access to stations, ownership groups, and industry resources.

⁴ Gary Trust, *Ask Billboard: How Does The Hot 100 Work?*, Billboard (Sep. 9, 2013),

<http://www.billboard.com/articles/columns/ask-billboard/5740625/ask-billboard-how-does-the-hot-100-work>.

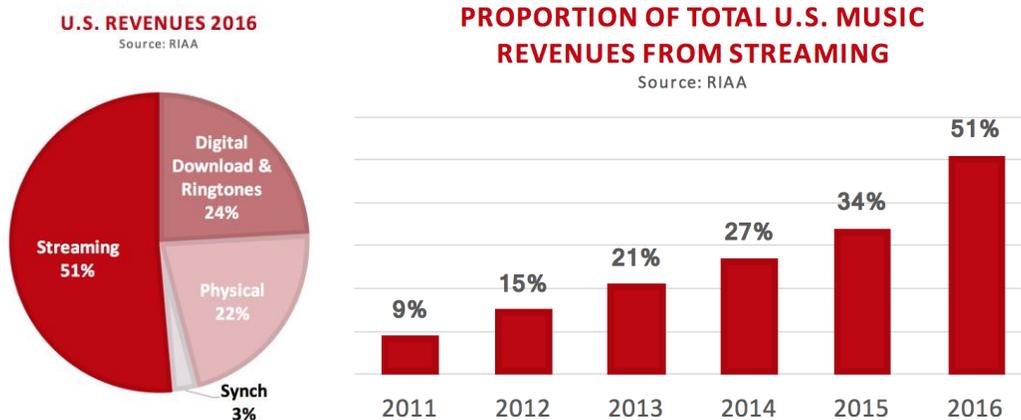
⁵ *Id.*

added Spotify, Rhapsody and others into the mix. The chart fed directly into the Hot 100 and was supplemented by the more comprehensive Streaming Songs chart in 2013, which added music video plays from YouTube and Vevo to the formula.⁶ Immediately following the new rules, Baaauer’s “Harlem Shake” jumped to #1 on the Hot 100 driven by more than 100 million first-week views.⁷ “From then on, radio would have to compete with the Internet as the primary motor of pop stardom.” Pandora data was added to the Billboard formula in January 2017, immediately moving nine songs up the Hot 100 rankings by at least five places and breaking Callum Scott’s “Dancing on My Own” onto the chart for the first time.

9. 2016 marked a tipping point for the music industry, with streaming overtaking sales as the single highest source of revenue in the U.S. Streaming accounted for 51% of all U.S. music industry revenue, up 68% from 2015 to \$3.9 billion. It’s an astonishing turnaround, with streaming accounting for just 9% of revenue in 2011, only five years prior. In addition, 2016 marked the first double-digit revenue growth (11.4%) in the U.S. recorded music industry since 1998, driven primarily by a 114% increase in revenue from paid subscription streaming services to \$2.5 billion.

“Streaming accounted for 51% of all U.S. music industry revenue.”

FIGURE 1⁸



⁶ Chris Molanphy, *How Streaming Services Are Remaking The Pop Charts*, NPR Music (Jun. 5, 2015), <http://www.npr.org/sections/therecord/2015/06/05/412037432/how-streaming-services-are-remaking-the-pop-charts>.

⁷ *Id.*

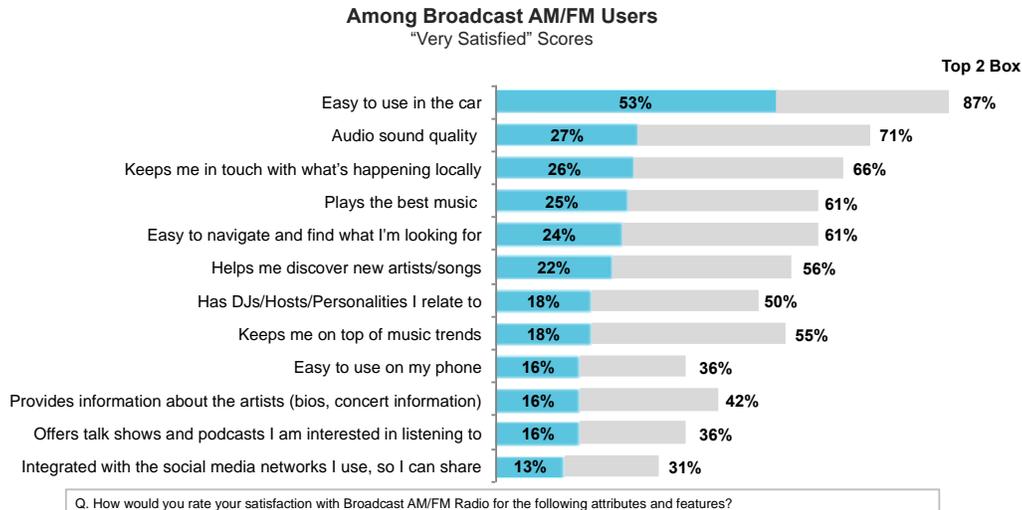
⁸ *Id.*

10. Until now, AM/FM radio has remained the dominant force in U.S. music listening, and when the numbers are seen in aggregate, radio listening arguably remains relatively stable. But competition for audience and attention is mounting. Edison Research’s “Share of Ear” report for Q2 2017 shows that AM/FM radio is responsible for over half (51%) of all time spent listening to music in the U.S. among listeners 18 and older, with owned music at 12%, YouTube music videos at 8%, Pandora at 6% (paid and ad-supported), SiriusXM at 6% (paid and ad-supported), TV music channels at 5%, Spotify

at 4% (paid and ad-supported), and podcasts at 3%.⁹

11. Importantly, radio’s audience is increasingly dissatisfied with the medium. Music Watch’s Music Monitor survey from January 2017 benchmarked AM/FM radio against streaming services regarding feature satisfaction. While AM/FM radio scored highly on ease of use in the car, with 53% of respondents saying they were “very satisfied,” the next highest rating was audio sound quality with only 27%.

Broadcast AM/FM Feature Satisfaction



MusicWatch

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12. Further, scores were low for features where broadcast radio would be expected to

score well, such as keeping listeners in touch with what is happening locally (26%), helping

⁹ Insights @ Westwood, *Everyone’s Listening: AM/FM Radio: The Centerpiece of American Audio*, WESTWOOD ONE, <http://westwoodone.com/BLOG/ArtMID/8027/ArticleID/83>.

listeners discover new artists and songs (22%), and having DJs/personalities/hosts that the audience relates to (18%). In addition, broadcast radio's top feature satisfaction rating, ease of use in the car, was bested by both Spotify Premium, with 66% saying they were "very satisfied," and Pandora One, with 75%.¹⁰

13. When examining radio use by the Generation Z, under-18 audience, the numbers drop even more dramatically. As we discuss in section V(c) of this paper, self-reported listening to AM/FM radio among teens 13+ declined by almost 50 percentage points between 2005 and 2016. Radio is being out-innovated by digital competitors.

"...listening to AM/FM radio among teens 13+ declined by almost 50 percentage points between 2005 and 2016."

14. Streaming services like Spotify have ascended in their importance to record labels as a vehicle for exposing fans to new music and changing the calculus of label promotion efforts. Historically, labels' promotional focus was nearly exclusively on music radio. Currently, the traditional ROI on radio spins to sales is arguably less

compelling to labels than streaming, where music discovery, consumption and monetization are integrated in one place.¹¹ "Previously, in the era of the traditional customer journey, we generated discovery for 8 to 12 weeks (allowing customers to discover new music by promoting through intermediaries such as TV, radio and press), and then the purchase or 'consumption' of music would come afterwards," wrote Samuel Potts, Head of Radio at Columbia Records UK. "In a world led by music-streaming, we are directly monetizing both discovery and consumption at the same time. We are monetizing the public's engagement with music and the currency of that engagement is a 'play' on a streaming service."¹²

15. Leading music industry analyst Mark Mulligan of Midia Research said "The power of music discovery used to lie in the hands of the radio DJ, now it lies in the hands of the playlist curator. And because streaming has melded discovery and consumption into a single whole, that means their power is becoming absolute."¹³

¹⁰ MusicWatch, Music Monitor survey (Jan. 2017) (unpublished survey) (on file with author).

¹¹ Samuel Potts, *Record Labels Need a Change of Culture in the 'Dashboard Era' of the Music Industry*, CUEPOINT (Jul. 11, 2016), <https://medium.com/cuepoint/record-labels-need-a-change-of-culture-in-the-dashboard-era-of-the-music-industry-585e91f6de99>.

¹² *Id.*

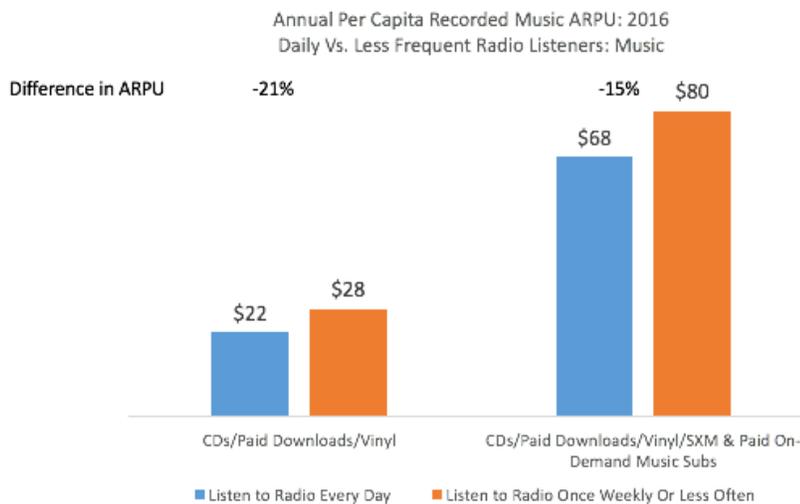
¹³ Mark Mulligan, *After the Album: How Playlists are Re-Defining Listening*, MUSIC INDUSTRY BLOG (Apr. 26, 2016), <https://musicindustryblog.wordpress.com/2016/04/26/after-the-album-how-playlists-are-re-defining-listening/>.

16. Of course, “listening” is a form of “consumption,” even when the person listens to AM/FM radio. Indeed, the heaviest radio listeners actually generate less revenue for music companies by buying a physical CD or vinyl album, paid download or stream – than light listeners. According to the MusicWatch Annual Music Study 2016, the most frequent radio listeners are 20-30% *less* valuable to the music industry per capita than the less frequent listener. For example, those who listen more than once per week spend \$64 on recorded music and premium subscriptions; the less frequent, \$80. This same dynamic holds true for music

“products,” too – CDs, vinyl albums and permanent downloads, at \$20 and \$28 respectively. While radio consumption can translate into revenue for labels and digital music services, that revenue doesn’t come from obvious sources – heavy listeners – and that spending pattern doesn’t generate confidence in radio as the primary promotional tool for all genres of music.

“...the most frequent radio listeners are 20-30% less valuable to the music industry per capita...”

FIGURE 2¹⁴



Source: MusicWatch Annual Music Study 2016

¹⁴ MusicWatch, Annual Music Study (2016) (unpublished survey) (on file with author).

17. The spin-to-sales conversion rate for radio is extremely low, according to David Touve, Director of the University of Virginia's iLab and founder of music industry economics publication *Rockonomic*, calculating it at between .01% and .02%.¹⁵

18. And, of course, American radio does not contribute any direct revenue to the recorded music industry. U.S. radio is not required to pay royalties for the use of master recordings, an exemption unique in the developed nations with advanced intellectual property protection, and one that has been defended by the radio industry for its "promotional value." It is beyond the scope of this paper to quantify whatever promotional value radio may provide (see Phoenix Center Study, "Promotional Effects and the Determination of Royalty Rates for Music").¹⁶ But it is indisputable that radio's role in the promotion of music is dramatically lower than it may have been five or ten years ago, especially among younger, active music consumers.

19. Music discovery as a whole is moving away from AM/FM radio and toward YouTube, Spotify and Pandora, especially among younger listeners. According to data from Edison Research and Triton Digital's

Infinite Dial 2017 webinar, AM/FM radio remained a top source for keeping up-to-date with music with 19% of all respondents citing it, second only to friends/family with 22%.¹⁷ However, this was a dramatic decline from the previous year, when 28% cited AM/FM radio. In the same report, Spotify saw the biggest increase (more than doubling from 4% to 10%). YouTube (14% to 15%) and Pandora (7% to 9%) also gained. Among new music fans making up 49% of the key age 12+ demographic (those who said keeping up-to-date with music is important to them), YouTube overtook AM/FM radio for the first time. Digging deeper into the younger generation (12-24 year olds) who find music discovery important, AM/FM radio (50%) becomes even less influential, trailing YouTube (80%), Spotify (59%), and Pandora (53%).¹⁸ This *Infinite Dial* insight indicates how musically-engaged young people who drive a tremendous amount of music discovery and consumption are moving away from radio at a significant rate.

20. Accordingly, many record labels are implementing promotion strategies that eschew radio and go directly to fans via streaming and social media. 300 Entertainment is among these labels, having achieved great success with hip-hop group

¹⁵ David Touve, *0.02%: the possible Sales-to-Spins conversion rate of US Radio*, ROCKONOMIC (May 12, 2015), <https://rockonomic.com/0-02-the-possible-sales-to-spins-conversion-rate-of-us-radio-4712e72b24c3>.

¹⁶ Phoenix Center - <http://www.phoenix-center.org/PolicyBulletin/PCPB39Final.pdf>

¹⁷ *Music Discovery Competition Heats Up*, INSIDE RADIO (Mar. 10, 2017), http://www.insideradio.com/free/music-discovery-competition-heats-up/article_2f246156-0561-11e7-b485-1fc08f73ac31.html.

¹⁸ *Id.*

Migos. After signing with 300 in 2014, the group doubled and then tripled their online imprint in just months thanks to the label's social media tools and partnership with Twitter. They grew their fan base for three years through extensive touring and a steady stream of new music via singles, mixtapes and albums. In January 2017, Migos topped the Billboard Hot 100 chart for the first time with their single "Bad and Boujee" and followed up with their second album, *Culture*, which debuted at #1 on the Billboard 200 chart without relying on radio play.¹⁹ In fact, radio is now taking its programming cues from streaming. iHeartMedia San Francisco's program director, Mark Adams, said earlier this year that streaming data is now an important part of the company's music evaluation process.²⁰ One need only look at today's radio trade advertisements to see streaming's impact on radio playlists, with labels promoting artists across radio formats, ranging from veteran alternative rock band Foo Fighters to hip-hop act Logic to pop singer Sigrid to country stars Dan+Shay touting their streaming figures in a bid to gain radio airplay for their latest tracks (*See Exhibit A*).

21. In June 2016, the GRAMMY® Awards changed their rules of eligibility, which previously required music to be made commercially available for sale. Now, music can be eligible for GRAMMY® nominations so long as the music appears on at least one major streaming service, such as Spotify or Apple Music.²¹

22. Music is most of what's on radio and drives tremendous value in terms of ad sales and EBITDA for the radio industry, however the value record labels and artists get from radio is declining. Streaming is already the largest source of revenue in recorded music, and where the earliest music discovery happens. Radio programmers today are influenced by traction demonstrated by artists and songs performing well on streaming services. Record companies understand this very well.

23. Music fans today have many choices for access to music and are becoming increasingly dissatisfied with AM/FM radio's traditional service offering.

24. It's never been clearer. Radio has to innovate now to remain relevant as a source of music discovery.

¹⁹ Bansky Gonzalez, How Young Thug Became The Prototype For The Streaming Era Star, UPROXX (Jun. 28, 2017), <http://uproxx.com/realtalk/young-thug-prototype-streaming-era-star/>.

²⁰ *Making the artist: What does it take to break through in music in 2017?*, THE DRUM (Feb. 8, 2017),

<http://www.thedrum.com/news/2017/02/08/making-the-artist-what-does-it-take-break-through-music-2017>.

²¹ The 2017 GRAMMY® telecast then saw Chance the Rapper's streaming-only *Coloring Book* album win three GRAMMYs®.

IV. FALLING FURTHER BEHIND IN THE CAR AND HOME

25. Previously, radio was insulated from disruption by its stranglehold on in-car listening. According to the U.S. Department of Transportation, the typical car in the U.S. was 11.6 years old in 2016. This explains why radio hasn't faced its disruption event yet: when it comes to in-car listening, you're talking about technology that, on average, pre-dates the iPhone.

26. However, drivers are buying new cars at a faster rate than ever, with U.S. vehicle sales hitting 17.55 million in 2016, topping the previous record of 17.47 million in 2015 for a seventh consecutive year of sales gains.²² These vehicles come with more installed options for commercial-free satellite radio, hands-free connection to mobile devices, and installed digital music services in connected cars. The car is ceasing to be AM/FM radio's exclusive, walled garden of captive audiences and limited choices.

27. The internet and the mobile phone were the first "in-home" challenges to radio, which responded to disruptive new technology in the form of cell phones with

entertainment apps by fighting to force the inclusion of FM chips in cell phones. However, activation is a device manufacturer and carrier option, and so far, the nation's largest carrier, Verizon, has withheld support while Apple has only recently allowed a downloadable NextRadio app in the App Store.²³ AT&T, Sprint, and T-Mobile are activating chips in Android phones, but this initiative smacks of protectionism; as if buggy whips were being forced by regulation into the trunk of every new car in the early days of the automobile. Consumers didn't demand FM receivers in their smart phones – that was the result of the broadcast lobby. Mexico recently mandated smartphone manufacturers to activate their FM chips, but "The rest of the world is not likely to follow suit...because there are too many forces arrayed against requiring FM chip activation on smartphones – especially carriers with a vested interest in consumers paying for streaming audio rather than listening free," according to NextRadio President Paul Brenner.²⁴ Time will tell whether carriers activate FM chips across the board – and whether consumers will notice or care.²⁵

²² Associated Press, *2016 U.S. auto sales set a new record high, led by SUVs*, LA TIMES (Jan. 4, 2017), <http://www.latimes.com/business/autos/la-fi-hy-auto-sales-20170104-story.html>.

²³ Paul McLane, *NextRadio Takes a Bite of Apple With Streaming*, RADIOWORLD (Aug. 1, 2017), <http://www.radioworld.com/news-and-business/0002/nextradio-supports-streaming-including-on-apple/340116>.

²⁴ James Careless, *Will Other Countries Follow Mexico in Chip Mandate?* <http://www.radioworld.com/news-and-business/0002/mexico-mandates-fm-chip-activation/340110>

²⁵ April Glaser, *Your Phone Has An FM Chip, So Why Can't You Listen To The Radio?*, WIRED (Jul. 9, 2016),

28. Meanwhile, smart speakers present a much different challenge to radio, because smart speakers don't have, and likely never will have, an FM chip at all. While it's possible to listen to AM/FM simulcasts on smart speakers, the lack of real investment in simulcasting has led to a subpar listening experience.²⁶

29. Thus, it's no surprise that early adopters of these devices, including the Amazon Echo and Google Home, tend to prefer digital services like Spotify and Pandora. Further, the technology titans offering these devices already have their own music services with well-developed playlists, delivering an even more refined listening experience to users, commercial-free and free for Amazon Prime members for a curated selection, and \$3.99 per month for tens of millions of songs on Alexa via Amazon Music Unlimited.²⁷

A. The Connected Car

30. Radio believes the power of its strong, local brands will insulate it from digital competition. However, this may not be the case in the car as the dashboard reconfigures

around connectivity with advanced digital services. The car is currently the number one location for listening to radio, and automotive is the number one revenue category for radio. As such, the connected car and its multiple audio offerings may be the greatest threat to AM/FM radio broadcasting, with 75% of new cars expected to be connected by 2020.²⁸

31. The interfaces controlling in-car media systems are becoming more standardized thanks to Apple CarPlay and Android Auto, which mimic drivers' smartphone displays in-dash and come pre-installed across manufacturers, resulting in a more consistent user experience.²⁹ Virtually every car manufacturer has made significant and potentially transformative investments in this space.

32. Car companies recognize the value in capturing user data and providing new telematics and entertainment offerings. Ford's incoming CEO Jim Hackett previously ran the company's Smart Mobility unit and has no qualms about investing in advanced digital services. In May, Hackett said "inside of our industrial businesses will be digital businesses, businesses that today have

<https://www.wired.com/2016/07/phones-fm-chips-radio-smartphone/>.

²⁶ Why are Radio Station Simulcasts Failing to Compete on Phones? May 1, 2015. <http://www.infinitedial.com/blog/2015/5/1/jsm3bi0o001wfew7mf897p57xwschi>

²⁷ AMAZON MUSIC, <https://www.amazon.com/b?node=15451028011>.

²⁸ *Understanding the Connected Car: An Introduction for Radio Broadcasters (Webinar Recording)*, JACOBS MEDIA STRATEGIES, <http://jacobsmedia.com/webinar-understanding-connected-car-an-introduction-radio-broadcasters/>.

²⁹ *Id.*

(financial ratios) a dozen times more than ours (manufacturing business).³⁰

**“My message is evolve or die.”
-Scott Burnell, Ford**

33. Scott Burnell, global lead of business development and partner management for Ford, said the company is moving forward with a new vision of the car dashboard that includes AM/FM radio but also provides easy access to a variety of digital services via mobile phones. To that end, Ford has abandoned its proprietary Sync dashboard platform in favor of support for both Apple CarPlay and Android Auto. He urged radio broadcasters to embrace a new vision for their content that moves away from the one-to-many nature of broadcast and toward a more communicative experience in line with how Millennials and other younger generations consume content.³¹ “My message is evolve or die,” said Burnell.³²

34. U.S. drivers appear to be on board with Burnell’s sentiments. According to McKinsey & Company data, drivers are increasingly more loyal to their phones than they are to

their cars. In 2015, 37% of drivers responding to a McKinsey survey said they would switch to another auto manufacturer if it were the only one offering full access to apps, data, and media in their vehicles. It’s a marked change from 2014, where only 20% said they would switch manufacturers for better media access.³³ This is an incentive for auto manufacturers to provide drivers with more ways to connect their phones to their dashboards, which will likely cannibalize radio’s in-car dominance as time goes on.

35. Furthermore, drivers are now more interested in in-car technology vs. driving performance of the vehicle when making automobile purchase decisions. In a recent Accenture study in which drivers were asked to state their preferences between in-car technology and driving performance, the most-selected answers favored a preference for better technology. Driving performance alone was the least chosen option. And when asked about importance of services for passengers (partner, children etc.), streaming music was the top answer with 63% of respondents; even higher than surfing the internet via a monitor in the car.

³⁰ Ian Thibodeau, *Ford CEO: Income from connected cars to boost earnings*, DETROIT NEWS (May 23, 2017), <http://www.detroitnews.com/story/business/autos/mobility/2017/05/23/ford-hackett-connected-cars/102079706/>.

³¹ Scott Burnell, *Ford Wants Radio Along For Ride In Future*, INSIDE RADIO (Jul. 19, 2017), <http://www.insideradio.com/free/ford-wants-radio-along-for->

[ride-in-future/article_b5eff1b6-6c52-11e7-8647-978502935a7c.html](http://www.insideradio.com/free/ford-wants-radio-along-for-ride-in-future/article_b5eff1b6-6c52-11e7-8647-978502935a7c.html).

³² *Id.*

³³ *Understanding the Connected Car: An Introduction for Radio Broadcasters* (Webinar Recording), JACOBS MEDIA STRATEGIES, <http://jacobsmedia.com/webinar-understanding-connected-car-an-introduction-radio-broadcasters/>.

36. So car companies realize that music is a point of differentiation. Tesla, for example, is rumoured to be in talks with major labels to license a proprietary in-car music service for its Model 3 vehicle.³⁴ Such a service would provide Tesla with two new revenue streams: one for the music subscription and the other for the usage data from its drivers. “The expectation in the auto industry is that car-related data could be a huge future business with double-digit margins (building and selling vehicles yields at best 10% in good times for most carmakers) and low capital costs.” A very real possibility exists for the in-car dashboard to be the stage of a

new content battle in which radio might find it difficult to maintain positioning.

37. Radio finds itself relegated to a physical position further and further removed – several clicks away -- from the center of the dashboard, notwithstanding limited use of single-station apps. As shown in Figure 3 in-car media screens allowing access to everything from Spotify to Pandora to iTunes are becoming the centerpiece for new models from virtually every manufacturer. AM/FM radio controls are often found below this screen, rendering them less prominent and less accessible than in the past.

**FIGURE 3:
FORD SYNC 3 PLUS APPLE CARPLAY SUPPORT³⁵**



³⁴ Johana Bhuiyan and Peter Kafka, *Tesla is talking to the music labels about creating its own streaming service*, RECODE (Jun. 22, 2017),

<https://www.recode.net/2017/6/22/15855346/tesla-elon-musk-streaming-music-service>.

³⁵ *Id.*

B. The Smart Speaker

38. eMarketer estimates 35 million smart audio devices are already in use.³⁶ According to Edison Research’s Infinite Dial 2017, 7% of Americans aged 12 and up now own a smart speaker, including both Amazon Alexa and Google Home.³⁷ Edison’s Smart Audio Report, which examined smart speaker owners aged 18 and up, found that nearly three-quarters of owners (70%) said they are listening to more audio since they got the speaker – all kinds of audio. This included 65% more listening to music, 28% more listening to news/talk, 20% more listening to podcasts, and 18% more listening to audiobooks. An overwhelming 90% said they bought a smart speaker to listen to music, and 62% also said they purchased a smart speaker to “hear better music than on AM/FM radio.”³⁸ AM/FM radio was also far down the list of use cases cited by smart speaker owners, with only 38% saying they regularly listen to AM/FM music radio on their device and 32% saying the same of AM/FM news/talk.³⁹

39. Radio believes that the smart speaker will reverse the decline in the number of radios in households.⁴⁰ According to Fred Jacobs of Jacobs Media Strategies, “Most [millennials] don’t have a working radio where they live, so they listen to ‘radio’ on their smartphones, tablets, and laptops.”⁴¹ Now, we can add smart speakers to that list. But the Edison report shows that pureplay digital services have a big head start on the smart speaker platform.

40. Part of this issue is that, radio has not meaningfully invested in new programming or advanced digital services for smart speakers. With apologies to Curtis Mayfield, the smart speaker train is leaving the station, and it is time for radio broadcasters to get on board. AM/FM radio broadcasters need to develop a compelling digital presence in order to participate in the smart speaker revolution, but so far, there are few signs that they are doing so.

41. Ironically, broadcasters are uniquely positioned to take advantage of the smart

³⁶ *Alexa, Say What?! Voice-Enabled Speaker Usage to Grow Nearly 130% This Year*, EMARKETER (May 8, 2017), <https://www.emarketer.com/Article/Alexa-Say-What-Voice-Enabled-Speaker-Usage-Grow-Nearly-130-This-Year/1015812>.

³⁷ <http://nationalpublicmedia.com/wp-content/uploads/2017/06/The-Smart-Audio-Report-from-NPR-and-Edison-Research-2017.pdf>

³⁸ *Id.*

³⁹ *Id.*

⁴⁰ *Smart Speakers Are Bringing Radio Back Into Living Rooms.*, INSIDE RADIO (June 22, 2017), <http://www.insideradio.com/smart-speakers-are-bringing-radio->

back-into-living-rooms/article_277c3a50-5714-11e7-b545-233001632826.html.

⁴¹ Fred Jacobs, *10 Lessons We Learned From “The Millennial Research Project”*, JACOBS MEDIA STRATEGIES (Aug. 17, 2017), http://jacobsmedia.com/10-lessons-learned-millennial-research-project/?utm_source=Jacobs+Media+Strategies+Blog&utm_campaign=bf962b5ef0-Blog_Daily_FullInfo&utm_medium=email&utm_term=0_5007ff924d-bf962b5ef0-179838909.

speaker revolution. As Glenn Peoples of Pandora wrote, “The quick ascent of the VA [voice-activated] smart speaker is causing companies to re-think how a person engages with music in a voice-only environment. What happens when people aren’t scrolling through an MP3 collection, choosing from one of dozens or hundreds of playlists, or picking a CD to play on the home stereo? Recalling something specific can be tough.”⁴² This is where radio has the potential to shine: With established brands in local markets associated with certain genres and formats, radio stations could earn a key place in the smart speaker market by building out their digital presence.

42. But it won’t be easy. In addition to addressing the technical issues associated with streaming, they’ll need to adapt to the particular ways that consumers engage with smart speakers, and, importantly, to find a way to stand out. Local stations may find that their brands are confusingly similar (or identical) to the brands of other markets. And, listeners in smaller markets may decide they prefer the out-of-market options offered by big-market taste-making stations like New York’s Z100 or LA’s Kiss FM. Simply

put, broadcasters will have to rely on more than their place on the dial to gain listeners; they’ll need a robust digital presence that users can identify with their voice.

“Local stations may find that their brands are confusingly similar (or identical) to the brands of other markets.”

43. Moreover, there is a significant risk that radio’s delay in entering the smart speaker market will mean missing out on the chance to shape consumer behavior. Amazon made waves in August 2017 when it added functionality to Alexa that allows it to play music for specific activities, such as running or meditation.⁴³ It does so by connecting the command to a playlist created by Amazon’s editors, with over 500 activities supported and the ability to supplement them with a genre (i.e. rock music for a dinner party).⁴⁴ In that vein, users can also ask Alexa to play music from specific genres, such as ‘90s pop, alternative rock, and more.⁴⁵ According to Amazon, these controls were designed around data gathered from the way Alexa users were requesting songs,⁴⁶ and as this

⁴² *How Music And The Smart Speaker Will Help Each Other Succeed*, HYPEBOT, <http://www.hypebot.com/hypebot/2017/08/how-music-and-the-smart-speaker-will-help-each-other-succeed.html>.

⁴³ Chaim Gartenberg, *Amazon’s Alexa can now play music for ‘hooking up’ and ‘baby-making’*, THE VERGE (Aug. 3, 2017), <https://www.theverge.com/2017/8/3/16090228/amazon-alexa-music-specific-activities-working-out-cooking-meditation>.

⁴⁴ Sarah Perez, *Alexa can now find and play music with over 500 ‘activity phrases’*, TECH CRUNCH (Aug. 4, 2017),

<https://techcrunch.com/2017/08/04/alexa-can-now-find-and-play-music-for-over-500-activities/>.

⁴⁵ *Help & Customer Service: Listen to Music*, AMAZON (Aug. 18, 2017, 1:28pm), <https://www.amazon.com/gp/help/customer/display.html?nodeId=201601830>.

⁴⁶ Sarah Perez, *Alexa can now find and play music with over 500 ‘activity phrases’*, TECH CRUNCH (Aug. 4, 2017),

method takes hold, it stands to reason that someone looking for music to accompany almost any activity will ask for that playlist or activity directly, rather than a local broadcast radio station.⁴⁷

44. Broadcasters are uniquely positioned to build on their existing customer relationships and brand identities in the new smart speaker market. But if they don't act,

they will quickly lose whatever advantage they may have. If radio broadcasters aim to maintain relevance if not dominance of listenership on new and rapidly evolving platforms like the connected car and smart speakers, they will have to out-innovate and out-compete digital-born disruptors for hearts, minds and ears in a way they haven't since the birth of their industry.

<https://techcrunch.com/2017/08/04/alexa-can-now-find-and-play-music-for-over-500-activities/>.

⁴⁷ Chaim Gartenberg, *Amazon's Alexa can now play music for 'hooking up' and 'baby-making'*, THE VERGE (Aug. 3,

2017), <https://www.theverge.com/2017/8/3/16090228/amazon-alexa-music-specific-activities-working-out-cooking-meditation>.

V. TO THE BARRICADES: LOSING LOCAL FAVOR AND FLAVOR

A. Radio's Local Advertising Problem

45. Radio has long converted audience reach and engagement to local advertising revenue. However, indications are that radio's favor with local advertisers and local audiences is declining, as mobile and digital options are better able to deliver accurately within local markets, with clearer ROI.⁴⁸

46. Indeed, radio's reach might not be as large as it seems, as the standards for measurement of radio station ratings pale in comparison to the transparent and detailed audience segments delivered by digital. For example, Nielsen's ratings system does not take into account the actual granular measurement of radio listeners. "A P1 [those listeners in the top quintile of reported listenership] can be someone who listens to a station for just a handful of quarter-hours throughout the week. Or it can be someone who tunes in to a favorite station six hours a day. A P1 is a P1. Except when they're not," wrote Fred Jacobs.⁴⁹ Ratings can be manipulated to serve the narrative of those measuring them. "How many times have you heard someone say (or maybe you've said it yourself) that even though the numbers look

bad, we have a good feeling about the format, a personality, a contest, or anything else? And so you end up acting against the cold, hard message the data is trying to deliver," wrote Jacobs.⁵⁰ This is not what brand marketers want to hear when defending an ad buy to their CEO or CFO."

47. The Personal People Meter (PPM) has now been collecting radio measurement data in top markets for over a decade. The PPM, a portable, pager-like electronic device, picks up encoded identifiers buried in broadcast audio signals. Fred Jacobs said in a blog post reflecting on 10 years of PPM use, "The great PPM hope was that listening and engagement would increase, accompanied by positive reactions from the ad community, leading to more sales and ultimately, greater credibility and respect for a medium that had fallen behind in the measurement game. Sadly, none of that happened."⁵¹

48. Like Arbitron before it, Nielsen has been challenged to recruit a radio measurement sample frame that mirrors the measured market. Historically, Nielsen and Arbitron relied on random-digit dialing to

⁴⁸ Alison Weissbrot, *Why Digital Hasn't Killed the Radio Star*, AD EXCHANGER (Jan. 6, 2017), <https://adexchanger.com/digital-audio-radio/digital-hasnt-killed-radio-star/>.

⁴⁹ Fred Jacobs, *Are Polls as Wrong as The Ratings?* JACOBS MEDIA STRATEGY (Nov. 11, 2016), <http://jacobsmedia.com/are-polls-as-wrong-as-the-ratings/>.

⁵⁰ *Id.*

⁵¹ Fred Jacobs, *PPM Turns 10 – Celebration or Regret?* JACOBS MEDIA STRATEGY (Feb. 22, 2017), <http://jacobsmedia.com/ppm-radio-ratings/>.

landlines for survey recruitment. Today, more than half of American households no longer have a landline and rely exclusively on cell phones. This has serious ramifications for accurate measurement of younger demographic groups that, along with people who rent their homes are even less likely to have a landline than the average household. Nielsen has responded by attempting to recruit participants in person, a costlier and more time-consuming approach as the number of panelists recruited by unsolicited home visits has increased to 25%.⁵²

49. Too-small sample sizes in smaller markets are typically addressed by overweighing, particularly in ethnic and young male households, which tend to be particularly difficult to recruit. This often leads to instability in audience estimates across rating periods when one diary can have an outsized influence on a station's ratings.⁵³

50. "I just delivered a research project for a broadcaster in a relatively small market. The study contained the opinions of 600 people," wrote consultant Mark Ramsay in "The Unfortunate Farce of Radio Ratings." "Do you know how long it takes Nielsen to

recruit a sample in this market as large as the sample in my research project? Two years. That's right. The sample sizes in markets like this one – and markets like yours – are almost laughably small."⁵⁴ In fact, Nielsen is said to have deployed only 800 PPMs to cover the entire Kansas City, MO, metro area, which contains around 2 million people.⁵⁵ "The more your clients understand about the intricacies of the ratings system, the more likely they are to be appalled – particularly in the presence of precise metrics from online radio players like Pandora and Spotify and digital natives like Google and Facebook," wrote Ramsay. "When I can go through Facebook's ad creation process and arrive at a specific number of consumers who will be impacted by my messaging with no estimates or random guesses required, what is the long-term effect of this on attitudes about media measurement?"⁵⁶

51. Outside the roughly top 50 markets measured by PPM, radio is still measured by the paper and ink diary system in use for over 60 years, representing approximately half the country. Here too, sample size is a persistent issue. Former national radio sales executive and now consultant Gerry

⁵² *Cell-Only Homes Now Top Landline Homes – A Nielson Challenge.*, INSIDE RADIO (May 11, 2017), http://www.insideradio.com/cell-only-homes-now-top-landline-homes-a-nielson-challenge/article_fb4060a4-361d-11e7-a77f-874d5fa0b0fc.html.

⁵³ *Why Nielsen Comes Up Short In Radio Measurement.*, INSIDE RADIO (Dec. 11, 2016), http://www.insideradio.com/why-nielson-comes-up-short-in-radio-measurement/article_5136c95e-c002-11e6-a72a-675bf13ae312.html.

⁵⁴ Hearne Christopher Jr., *Hearne: The Farce & Folly of Radio Ratings*, KC CONFIDENTIAL (Oct. 27, 2016), <http://www.kcconfidential.com/2016/10/27/hearne-the-farce-folly-of-radio-ratings/>.

⁵⁵ *Id.*

⁵⁶ *Id.*

Boehme said “Radio is being terribly short-changed by a system that is totally incapable of measuring current broadcast channels, much less streaming and podcasting.”⁵⁷

“Radio is being terribly short-changed by a system that is totally incapable of measuring current broadcast channels, much less streaming and podcasting.” –Gerry Boehme

52. Underscoring this audience measurement failure, Nielsen’s radio rating system, dependent on Portable People Meters (PPMs), may be responsible for killing off an entire format of radio that wasn’t suited for the device. Although PPMs pick up inaudible audio signals hidden under radio broadcasts and ostensibly providing a more accurate accounting of which radio stations people are hearing on a regular basis, smooth jazz suffered tremendously under this system, as its soft sound left little room for the PPMs’ audio signal to hide behind without becoming audible. As such, 16 smooth jazz stations switched to noisier formats such as rock and sports immediately after the PPMs were introduced in 2013, and

as of April 2015, the total number of jazz stations had dropped from 159 to 101.⁵⁸

53. PPMs have also opened up new opportunities for radio stations to game the ratings. A new technology known as Voltair is now available for stations to purchase for \$15,000 from equipment manufacturer 25-Seven, improving the encoding process to make their signal more discoverable to PPMs.⁵⁹ “According to one radio-company executive I talked to whose company has used Voltair since February, it really works — spurring ratings increases in certain demographics by 20 percent to 80 percent,” wrote Carl Bialik of FiveThirtyEight.⁶⁰ As this technology has not been adopted as an industry standard, it currently creates a ratings imbalance between the bigger stations that can afford Voltair and the smaller stations that cannot.

54. Spot radio revenue has been flat at roughly \$15 billion since 2010. Digital radio revenues, which include online streaming of radio signals, crossed \$1 billion for the first time in 2015 and is expected to grow faster than on-air revenue. But revenue accruing to radio from off-air events exceeded \$2 billion for the first time in 2015.⁶¹

⁵⁷ *Id.*

⁵⁸ Carl Bialik, *Did Nielsen Kill the Radio Star?* FIVE THIRTY EIGHT (June 30, 2015), <https://fivethirtyeight.com/features/did-nielsen-kill-the-radio-star/>.

⁵⁹ *Id.*

⁶⁰ *Id.*

⁶¹ Paul McLane, *U.S. Radio Revenue: \$17.4 Billion, Down 1% Last Year*, RADIO WORLD (Mar. 3, 2016), <http://www.radioworld.com/business-and-law/0009/us-radio-revenue-174-billion-down-1-last-year/336865>.

55. Radio is also losing its dominance in local advertising spend. According to BIA/Kelsey's U.S. Local Advertising forecast 2016, radio ad revenues were at \$15.4 billion in 2016, good enough to place it within the Top 5 for the year. However, 2017 is a different story. In BIA/Kelsey's forecast for this year, radio was replaced in the Top 5 by mobile, which brought in \$16 billion.⁶² "We are on the precipice of different advertising channels taking lead positions in the local advertising marketplace," said BIA Chief Economist Mark Fratrik. "Although national and local businesses still utilize a mix of digital and traditional advertising platforms, the opportunities afforded by mobile, social and video advertising are incredibly valuable due to their measurability, adoption by consumers and enhancements by technologies such as beacons and data attribution that blend extraordinarily well with today's mobile consumer."⁶³

**"We are on the precipice of different advertising channels taking lead positions in the local advertising marketplace."
-Mark Fratrik, BIA**

56. Mobile's ascendance is also seen in the 2016 IAB Advertising Revenue Report, up 77% from 2015 to \$36.6 billion. Mobile advertising accounted for over half (51%) of the record-breaking \$72.5 billion total spent on internet advertising, which was up 22% from 2015. Digital audio also earned enough internet ad spend to be measured by the IAB for the first time, bringing in \$1.1 billion.⁶⁴ The upward trend for digital advertising appears to be continuing into 2017, with total spend hitting \$19.6 billion in Q1 2017, the highest Q1 earnings on record.⁶⁵ Radio, perhaps the first mobile medium, is not remotely keeping up with the pace of innovation or revenue growth in competing mobile services.

B. Radio's Losing "Favoriteness" Among Listeners

57. While radio's reach is high, time spent listening to radio is fracturing.

58. Steve Goldstein, CEO of Amplifi Media and former EVP and Group Program Director of radio broadcaster Saga Communications wrote, "In 2007, radio's TSL was around 20 hours. Today it hovers at 14 hours, and it is even lower among Millennials. While radio

⁶² U.S. Local Ad Revs to Exceed \$174 Billion In 2021 Says BIA/Kelsey; Mobile Replaces Radio in Top 5, ALL ACCESS (Jul. 12, 2017), <https://www.allaccess.com/net-news/archive/story/167471/u-s-local-ad-revs-to-exceed-174-billion-in-2021-sa>.

⁶³ *Id.*

⁶⁴ Mobile Captures More Than Half of All U.S. Internet Advertising Revenue For The First Time Ever, Total Digital Ad Spend Hits a Landmark \$72.5 Billion in 2016, IAB (Apr. 26, 2017),

<https://www.iab.com/news/internet-advertising-revenue-first-time-ever-total-digital-ad-spend-hits-landmark-72-5-billion-2016/>.

⁶⁵ Digital Advertising Revenues Hit \$19.6 Billion in Q1 2017, Climbing 23% Year-Over-Year, According to IAB, IAB (Jun. 14, 2017), <https://www.iab.com/news/ad-revenues-hit-19-6b/>.

continues to have remarkable reach, time spent listening is shifting to other platforms. The move to mobile and on-demand is rapid. Radio needs to decide whether it is in the transmitter business or the audio business. The audience is already voting.”⁶⁶

“In 2007, radio’s TSL was around 20 hours. Today it hovers at 14 hours...”

59. Radio’s historical “favoriteness,” or the amount of people who consider radio to be their favorite medium for listening to music, declined significantly beginning with the rise of digital downloads by 2007.⁶⁷

60. “The trends are clear and from this long-range perspective broadcast radio may have missed its opportunity to take advantage of the available technology to transition listeners seeking different ways to consume music. According to a recent Bridge Ratings study, creation of alternative pure-play internet radio stations by broadcasters could have and can still capture listening that has funnelled to internet radio.”⁶⁸

61. The study also shows the change in broadcast radio “favoriteness” between 2001 when Bridge Ratings started these studies. By their estimates, broadcast radio has thus far seen a 33% attrition of “favoriteness.” 30% of the attrition has been attributed to on-line music streaming, which includes internet on-demand services like Spotify and YouTube. Internet Radio accounted for 15% attrition. This includes non-interactive services like Pandora and AM/FM simulcasts. Less than 2% of the attrition can be attributed to AM/FM simulcast streams.⁶⁹

62. Perhaps most importantly, radio is rapidly losing its audience of the future. The trend line is most pronounced among the youngest respondents to the Bridge Ratings survey, 18-34 year old adults, “few of which had a favorite (radio station) they could name.”⁷⁰

“...18-34 year old adults, “few of which had a favorite (radio station) they could name.””

⁶⁶ *Let’s Click “Pause” And Celebrate International Podcast Day*, AMPLIFI MEDIA (Sep. 30, 2016), <http://www.amplifimedia.com/blogstein/?offset=1475579873783>

⁶⁷ *Radio’s New Media Gauntlet – 2017*, BRIDGE RATINGS (Aug. 24, 2017 at 8:37 pm), <http://www.bridgeratings.com/the-new-media-gauntlet-2017>.

⁶⁸ *Id.*

⁶⁹ *Id.*

⁷⁰ *Id.*

63. Few radio stations sell advertising specifically targeted for teens, which may account for the lack of teen audience studies by the trend analysts. But today's teens are tomorrow's 18-34's and 25-54's, and we thought it might be instructive to examine how today's teens discover and consume music while they are still forming their media consumption habits and brand allegiances. The numbers are dramatic, but not surprising.

C. New Insights on Teen Listening

64. The rising "Gen Z" demographic is showing little interest in traditional media, having grown up in an on-demand environment as true digital natives. These individuals, defined as those born in 1995 or later, are projected to account for 40% of all consumers in the U.S. market by 2020.⁷¹ They currently make up 25% of the U.S. population, according to the U.S. Census Bureau, making them a larger group than either Baby Boomers or Millennials.⁷²

65. Teens have even more opportunity to engage with music than their post-Baby Boomer, Generation X parents. It is not only streaming that supplements radio, as teens also actively use search and social media tools and apps such as Musical.ly, Shazam and blogs to stay on top of music trends. Radio, though still important, is being challenged by these platforms as a source of music discovery.

66. We begin with new MusicWatch data on the overall percentage of teens that said they had listened to music on AM/FM radio in the past three months.⁷³

67. This research shows that the percentage fell from the mid-70% range a decade ago in Q3 2007 to 56% by as long ago as Q4 2013, a 20 percentage-point decline. As teens continue to be presented with more digital options and grow increasingly literate in using online music services, we can expect this number to drop even further.

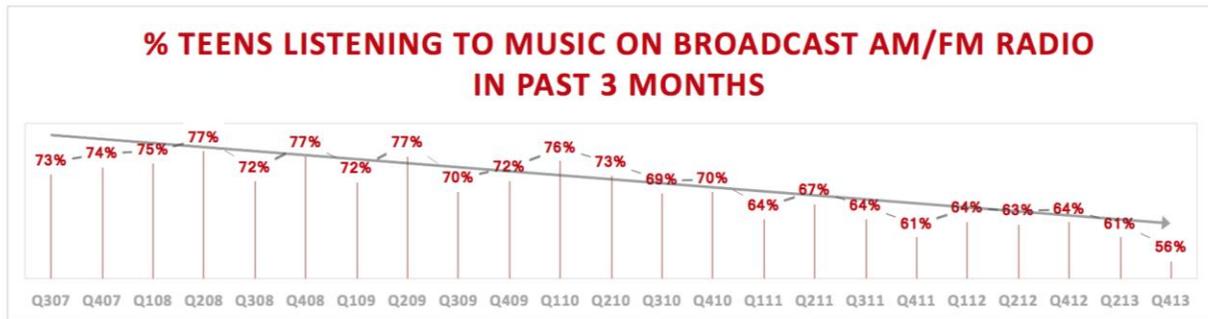
⁷¹ Giselle Abramovich, *15 Mind-Blowing Stats About Generation Z*, CMO (Jun. 12, 2015), <http://www.cmo.com/features/articles/2015/6/11/15-mind-blowing-stats-about-generation-z.html#gs.Kk1xlBM>.

⁷² Kathryn Dill, *7 Things Employers Should Know About The Gen Z Workforce*, FORBES (Nov. 6, 2015), <https://www.forbes.com/sites/kathryndill/2015/11/06/7-things-employers-should-know-about-the-gen-z-workforce/#4e13ff1dfad7>.

⁷³ MusicWatch's Music Acquisition Monitor was a tracking survey which ran quarterly between 2007 and 2012, and semi-annually between 2013 and 2014. The study measured participation in

various music activities including purchase of CDs and downloads, participation in piracy, streaming services used and time spent listening to music. Music Acquisition Monitor was an online survey fielded to ~5000 respondents aged 13 and older, and was weighted and projected to the US internet population. MusicWatch's Monitor Study examines consumer usage of, and satisfaction with, a variety of audio options, including specific streaming services. The Monitor is conducted semi-annually to a sample of 3,000 music listeners aged 13 and older.

FIGURE 4⁷⁴



Source: MusicWatch MusicAcquisitionMonitor Q3 2007-Q4 2013. Based on online survey to ~5000 respondents per wave and projected to internet using population 13 and older. Study was quarterly between 2007 and 2011; semi-annual from 2012 forward.

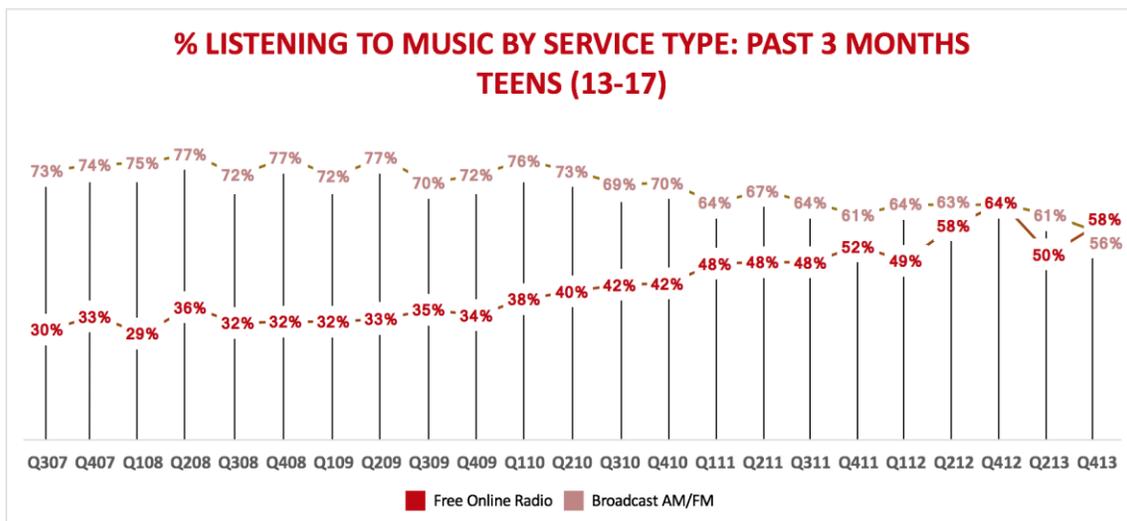


Not surprisingly, while teen music listenership on broadcast AM/FM was falling, the proportion of teens who listened to music on free non-interactive digital radio was on the rise. By Q4 2016 the same proportion of teens (58%) listened to music on AM/FM as online radio. It's a remarkable transition, as online radio accounted for only

30% of teen listening in Q3 2007, compared to 73% for AM/FM. As today's teens age into 18-34's and beyond, broadcast radio could fall even further behind pureplay options among the audience demographic groups most sought after by stations and most highly valued by advertisers.

⁷⁴ MusicWatch, MusAcquisitionMonitor survey Q3 2007 – Q4 2017 (2017) (unpublished survey) (on file with author).

FIGURE 5⁷⁵



Source: MusicWatch MusicAcquisitionMonitor Q3 2007-Q4 2013. Based on online survey to ~5000 respondents per wave and projected to internet using population 13 and older. Study was quarterly between 2007 and 2011; semi-annual from 2012 forward.



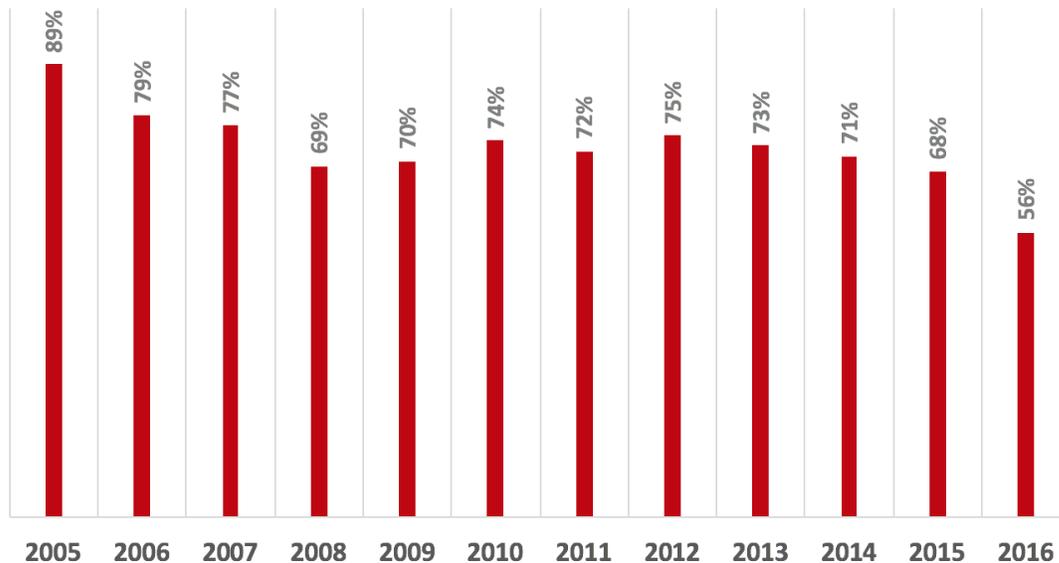
68. MusicWatch also evaluated data going back more than a decade for past-year listening to AM/FM radio among teens. In 2005, nearly 90% of teens reported that they had listened to AM/FM radio in the past year. That dipped somewhat from 2006-2008, the years that saw peak iTunes usage and increasing use of streaming platforms. Although radio engagement fell during the years that Pandora and YouTube were ramping up, a healthy majority of teens were still listening to AM/FM radio, with 2008's 69% figure being the then-lowest

percentage. However, once Spotify entered the U.S. market in 2011 and it along with Apple Music, and other premium on-demand services gained traction starting in 2014, many teens abandoned AM/FM radio. While teen listenership had remained relatively stable from 2009 to 2014, with increases in 2010 and 2012, it dropped sharply in 2015, reaching its then-lowest level of 68%, before plummeting further in 2016, dropping over 10 percentage points to 56%.

⁷⁵ *Id.*

FIGURE 6⁷⁶

**TEENS AGED 13-17: % SAYING LISTEN TO AM/FM RADIO
PAST 12 MONTHS**
(SOURCE: MUSICWATCH ANNUAL MUSIC STUDY)



Source: MusicWatch Annual Music Study. Online sample of ~5,000 respondents representing the internet population 13 and older. Prior to 2013, respondents were asked about "Listening to AM/FM Radio." As of 2014 respondents were asked specifically about music on broadcast AM/FM, news/talk/sports on broadcast AM/FM and music on digital audio AM/FM stations.



69. How teens listen to any music is important. However, the time that teens actually invest listening to specific platforms is a better indicator of the health and prospects for those platforms. According to MusicWatch, teens' average weekly share of AM/FM listening hours was only 13%, far lower than streaming at 44% (See Figure 7 below). These streaming figures include both pure-play music streaming services like Spotify and Apple Music and sites such as YouTube or Vevo that host music videos.

While a significant percentage of teens still listen to broadcast radio, they are far more engaged with streaming options that give them some form of control over what they hear.

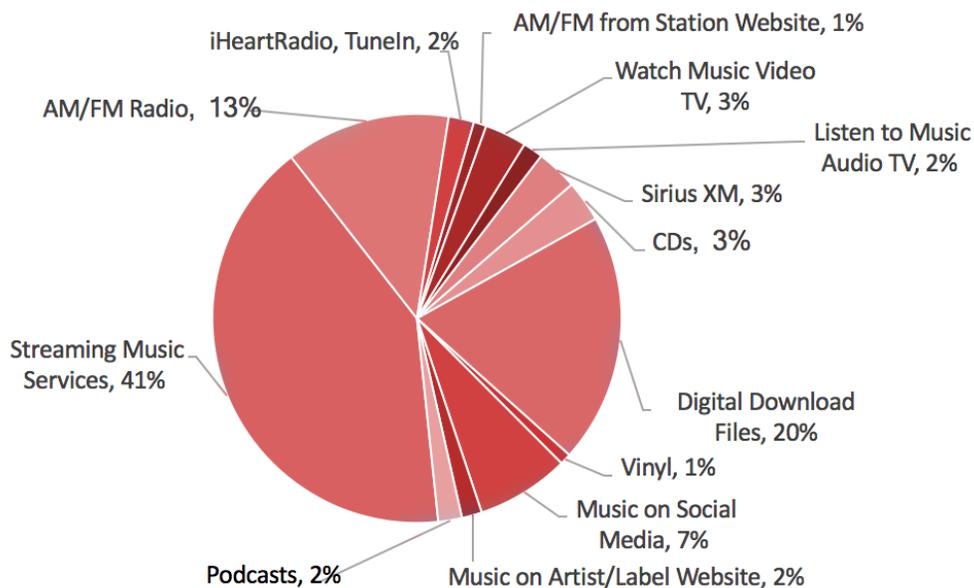
"...MusicWatch's research shows, many teens are abandoning radio."

⁷⁶ *Id.*

SHARE OF MUSIC TSL: 2016 AVERAGE MONTH: TEENS (13-17)

FIGURE 7⁷⁷

Share of Music TSL: 2016 Average Month: Teens (13-17)



*AM/FM station website estimated from 1Q 2017

70. In the past, radio could rely on new generations of in-demo listeners to replenish and grow its audiences. However, with the advent of music and video streaming, connected devices, and an app economy, this reliance is being challenged. As MusicWatch’s research shows, many teens are abandoning radio. Some of them are completely bypassing the medium, with the number who listened both in the past three

months and over the past year in decline. Even more concerning is the share of time teens spend listening to AM/FM radio, which pales in comparison to streaming. It’s worth noting that teens do not spend the same amount of time commuting in cars as their parents, but when they do enter the workforce, it will likely be in cars that are much better natively enabled for streaming.

⁷⁷ *Id.*

VI. SUMMARY

71. Music is the lifeblood of the radio industry. It represents the vast majority of all content on AM/FM radio. And although radio continues to reach, engage and retain large audiences and generate annual revenues twice the size of the recorded music industry, the long-term trend is not radio's friend. Today's listener has access to virtually unlimited choices for audio and music consumption, of which radio is only one of a constellation of available platforms offering a galaxy of services from linear, lean-back and algorithmically driven to lean-forward, on-demand and self-curated – and everything in between. And while radio consolidated over the last 20 years, the industry under-invested in advanced digital music services and failed to anticipate the emergence and scale of new competitors.

72. The car provided a Maginot Line of defense for radio, insulating it from competition through the early years of the digital transition. But the explosion of smartphones in the last decade and the proliferation and growth of music and audio apps and pureplay digital services have weakened AM/FM radio's dominance of in-car listening, especially among younger audiences.

73. What are the conditions for sustainability and growth? Unfortunately, it's easy to describe and hard to do. But

unless the industry is set to make peace with a long and inevitable decline, radio needs to invest in strong and compelling digital services. If it does, radio can look forward to a robust future built on the strong foundation it already has in the marketplace leveraging the medium's great reach, habitual listenership, local presence and brands. If it doesn't, radio risks becoming a thing of the past, like the wax cylinder or 78 RPM record – fondly remembered but no longer relevant to an audience that has moved on.

“...radio needs to invest in strong and compelling digital services. If it does, radio can look forward to a robust future built on the strong foundation it already has in the marketplace leveraging the medium's great reach, habitual listenership, local presence and brands.”

VII. EXHIBITS

A. Exhibit A



BDS 14* / MB 17* #1GG
DRIVING TOP 10!!!
#3 ROCK ITUNES
SHAZAM USA FUTURE HITS #16 DEBUT
SINGLE SALES: 15,400 TW +130%!!!
SINGLE STREAMS: 5M+
6.5M VIDEO VIEWS IN LESS THAN 2 WEEKS!
"An onslaught of guitars... (an) anthem
readymade for singalongs"
USA TODAY Song of the Week
foofighters.com/#listen
foofighters.com/#tour

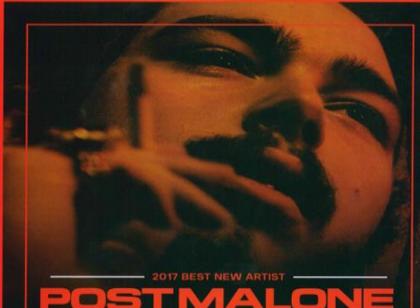
SAM **RCA**

LOGIC
 FEAT. ALESSIA CARA • RHALIM
 NATIONAL SUICIDE PREVENTION LIFELINE

1-800-273-8255
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T40: Chart Debut Next Week! OVER 90 ADDS Prior to IMPACT!
RHYTHM: Trending TOP 20! OVER 65 ADDS!
OVER 60 MILLION STREAMS IN 6 WEEKS!
SOLD OUT HEADLINING TOUR!

DJ



2017 BEST NEW ARTIST

POST MALONE

"CONGRATULATIONS"
 TOP 5 APPLE MUSIC & SPOTIFY
 TOP 10 BILLBOARD HOT 100
 TOP 10 RHYTHM RADIO
 TOP 10 ITUNES
 250M+ VIDEO VIEWS

STONEY
 2M+ GLOBAL SALES
 15B+ GLOBAL STREAMS

"CONGRATULATIONS" REMIX
 ft. Quavo & Future OUT NOW

PERFORMING LIVE AT THE BET AWARDS ON SUNDAY, JUNE 25TH

SAM

DAN+SHAY

UNDENIABLE HIT MAKERS!

3 CONSECUTIVE #1 SINGLES AT COUNTRY RADIO

RIAA GOLD AND PLATINUM CERTIFICATIONS

SOLD OUT HEADLINING TOURS - NEW YORK, NASHVILLE, U.K. INCLUDED

PERFORMED ON ELLEN, GOOD MORNING AMERICA, TODAY, JIMMY KIMMEL LIVE, DANCING WITH THE STARS, THE BACHELORETTE, LIVE! WILL KELLY AND MORE

2.6 MILLION DIGITAL TRACKS SOLD

400 MILLION ON DEMAND STREAMS

78 MILLION YOUTUBE VIEWS



ROAD TRIPPIN'
 BRAND NEW SUMMER SMASH "ROAD TRIPPIN'" IMPACTING JULY 17

SAM