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# FROM AIRWAVES TO EARBUDS

## LESSONS FROM KNIGHT INVESTMENTS IN DIGITAL AUDIO AND PODCASTING

Draft for Public Release – November 2016

Prepared by:

**SARAH LUTMAN**  
*Principal, Lutman & Associates*

**JESSICA CLARK**  
*Principal, Dot Connector Studio*

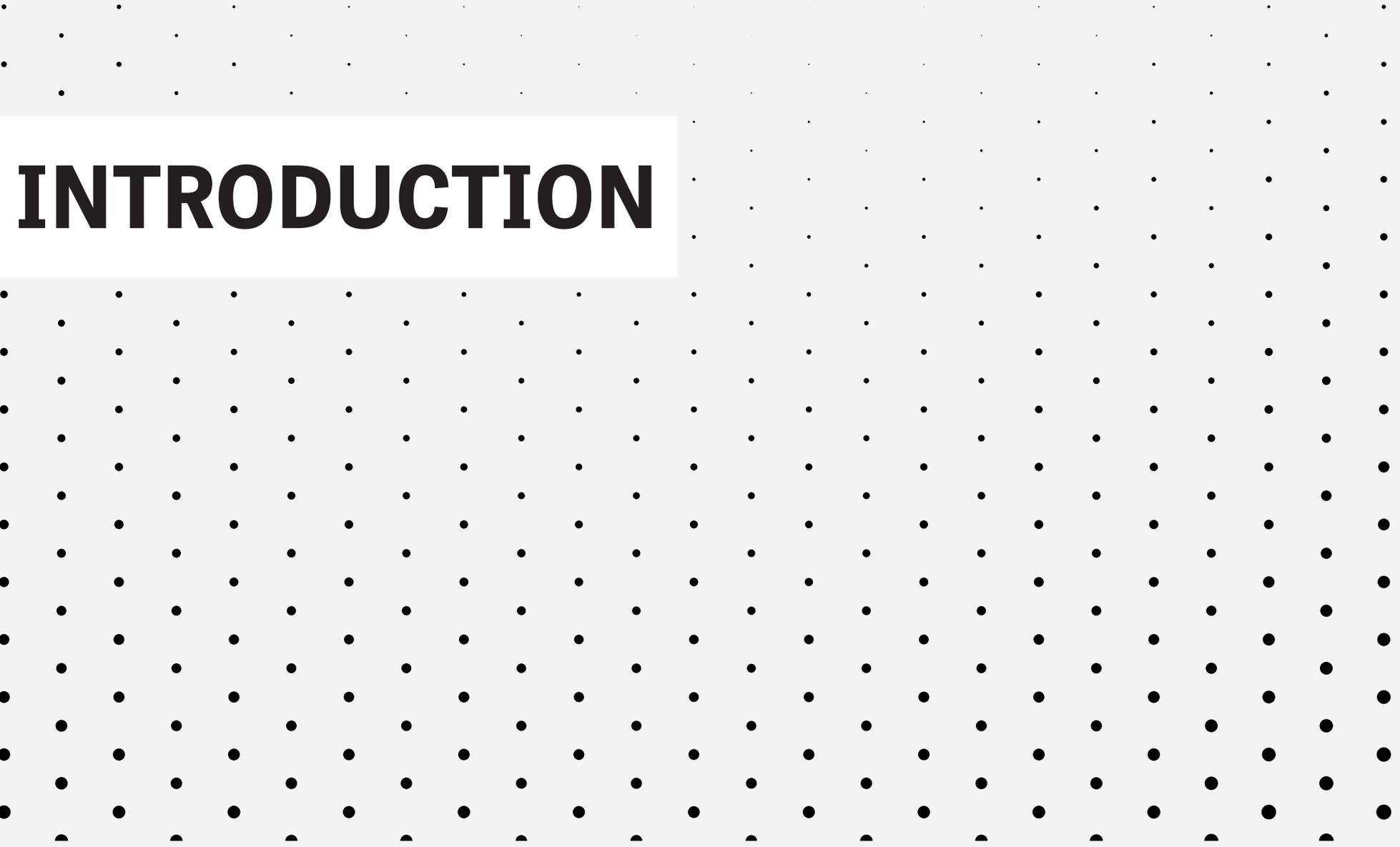
**ANGELICA DAS**  
*Senior Associate, Dot Connector Studio*



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# INTRODUCTION

**Podcasting and other forms of on-demand digital audio are growing. Edison Research reports that, based on a survey conducted in January and February 2016, an estimated 155 million Americans over 12 had listened to some form of online radio in the preceding month, and 57 million had listened to a podcast.**

The runaway success of the podcast “Serial,” which originated within the public radio show “This American Life,” helped spark interest in the medium, which is reaching new audiences, giving rise to new voices and creating new revenue streams.

Seeking to accelerate positive change, Knight Foundation made several recent investments to support the advancement of journalism and public information programming delivered through podcasting and on-demand audio formats. This report summarizes initial findings from the experiences of several recent Knight grantees working in this rapidly emerging field: Project Carbon, which comprises grants to NPR and several local public radio stations to build out the digital infrastructure of public radio; Radiotopia, a new podcasting network developed by Knight partner PRX Inc.; WNYC Discover, a mobile podcasting application; and a Knight

Enterprise Fund investment in Gimlet Media, a private podcasting company started by public radio veterans.

The approach to this review was to “learn alongside” grantees by reviewing progress of the grants and investments to date, giving grantees the opportunity to provide insights into their work, and to do this in conjunction with an in-depth look at the broader podcasting context.

The report does not cover some of Knight’s more recent podcast-related investments, including Pop Up Archive<sup>1</sup> to create open-source software for organizing and publishing archival audio content from small and independent producers; RadioPublic, a for-profit public benefit corporation established in partnership with PRX; and a grant to “This American Life’s” Satchel, a tool to facilitate social sharing of podcast audio snippets.

While this report’s primary basis is a particular set of grants, the inquiry into grantee experiences quickly blossomed into larger conversations about podcasting and digital audio writ large, and in particular the ways that journalism and public information producers are more and less equipped to interact successfully with the new digital listening audience.

Indeed, the ground is shifting rapidly. New entrants with large wallets and access to talent, rapid evolution in technical infrastructure and capability, explosive increases in audience uptake, sharply rising revenue and quickly broadening public awareness are all driving change in the on-demand audio world. Grantees are forced to take notice and to take action. Not all are ready.

<sup>1</sup> Knight Foundation’s funding to Pop Up Archive has included both grants and venture capital.

## KEY FINDINGS

The review surfaced several key insights about the early-stage impacts of Knight Foundation's investments, as well as strategic issues to consider around efforts to support quality news and information programming in a digital era. The most significant themes:

- **Knight Foundation's grantees and Enterprise Fund investments have shown success in growing new audiences, particularly among younger cohorts that might not turn to radio.** Digital entrants Gimlet and Radiotopia are experiencing significant year-over-year audience growth. Listeners across digital media also skew to the low 30s—far younger than the average age of an audience member for the public radio broadcast system. These efforts are also giving rise to new voices. Gimlet and Radiotopia are developing new shows, both NPR One and WNYC's Discover app are seen as greenfields to experiment with new content in a way freed from the constraints of public radio broadcasting, and RadioPublic is developing discovery methods to increase the appeal of podcast listening for new audiences who aren't familiar with the format.
- **Several Knight Foundation partners are either reinvigorating old pathways to revenue or illuminating new ones.** NPR One is feeding user registration to local stations, helping potential public media members to replenish an aging audience. In addition to ad sales, Radiotopia has raised significant funds through crowdfunding, events and sponsorships. Gimlet's for-profit model has attracted enough interest to meet investment targets, and ad inventories continue to sell out for major shows.
- **The public radio system, while having made progress, is not yet well positioned for audience-first, digital delivery.** Project Carbon, WNYC's Discover app, and RadioPublic represent significant strides in transitioning the public media system to a digital-first orientation.

Podcasting and on-demand audio today is a fertile field into which many seeds are being planted, and with more or less intentionality. As this report shows, however, these new opportunities face significant headwinds and will demand continued creativity, drive and investment to reach their full potential.

## METHODOLOGY

Knight Foundation worked with Lutman & Associates and Dot Connector Studio to perform this review. Data were collected in spring and summer 2016 through more than 60 face-to-face and phone interviews with grantees, public radio leaders, producers, industry experts, and other stakeholders (see Appendix A for interviewee list); a review of internal grants memoranda, grantee reports and updates, and staff correspondence; and an extensive literature review of the field, including white papers, industry reports, and books related to journalism, technological innovation and adoption, audio production, public broadcasting policy and more.



# KNIGHT FOUNDATION'S INVESTMENTS

## **Knight Foundation has invested in and worked with several major efforts to support journalism and public interest programming delivered via podcasting and to advance the digital transformation of audio content.**

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### **PROJECT CARBON**

Knight Foundation made multiple investments totaling \$4.4 million in Project Carbon, an initiative led by National Public Radio. The grant for Project Carbon was intended to support the development of a seamless digital listening platform across all NPR affiliates and available through all digital devices.

Project Carbon represents an effort to map the public radio system's transformation from broadcast-first to digital-first, encompassing multiple elements of new and necessary shared digital infrastructure for the public radio system. The bulk of the effort by NPR has been directed to the NPR One app, which provides some elements of this infrastructure, while key member stations pursued other component parts.

Several member stations are participating. One collaboration is a joint project by KPCC (Los Angeles), WHYY (Philadelphia) and NYPR (New York City) to develop Loud.ly, a project designed to build new capabilities for audio streaming and delivery, with emphasis on strengthening content management systems, mobile infrastructure and digital revenue interfaces that together facilitate a station's connection to digital platforms. KQED (San Francisco) is working to migrate its digital audio assets, particularly newsroom assets, to the Dalet content management system, enabling nimble sharing and delivery of locally produced audio content via the NPR One app and other digital platforms. (Dalet is a commercial software vendor whose product is used by some of public radio's largest producers.) WBUR (Boston) is implementing NPR's application programming interface and is improving its capacity for

sharing user data among departments such as membership, events, underwriting and content. Minnesota Public Radio (MPR) has led an effort called Public Radio Engaged, a collaboration with other public radio stations and NPR's Carbon Services Identity Platform intended to establish the protocols and tools needed to connect local user data with system-level data related to audience consumption and preferences.

## RADIOTOPIA

Radiotopia is a curated network of podcasts formed to help independent media makers develop audiences and revenue for their work. Formed within PRX Inc., Radiotopia was granted \$1 million from Knight Foundation in November 2015. Radiotopia's lead producers are Roman Mars, originator of the popular podcast "99% Invisible," and Julie Shapiro, executive producer.

The overarching strategy for Radiotopia is to leverage its podcasts as a network in order to benefit independent producers. In the sea of podcasters, it is challenging for independents to differentiate themselves and gain the audience and revenue needed to support themselves. Through Radiotopia's efforts, indie podcasters can receive mentoring on production and on audience expansion and revenue development. They also can participate in networkwide fundraising, promotional and audience engagement activities. In this way, PRX sees Radiotopia functioning similarly to a record label or other talent aggregator that brings visibility and sales to individual producers.

## GIMLET MEDIA

Knight Foundation has made two equity investments in Gimlet Media through the Knight Enterprise Fund, the first in 2014, followed by a reinvestment in 2015. These investments have advanced Gimlet's ability to develop and release additional podcasts for its network.

Gimlet is a for-profit, digital-first media company that produces high-quality, narrative podcasts. Its two founders cut their teeth in public radio; Gimlet's programs fall mainly within the voice, audience target, storytelling style and subject matter that appeal to traditional public radio audience psychographics, with age being the exception.

Gimlet is staking its success on the ability to produce finely honed shows that elevate the craft, in the same way that Netflix and Amazon have been reinventing television for on-demand premium cable viewing. "[P]odcasting still has an association with something that two dudes make in their basement. There's a 'Wayne's World' connotation to it. But I think of them as shows: sleek, produced, where you have people who are good at it doing it," Gimlet co-founder Alex Blumberg told Shan Wang in a 2015 Nieman Lab interview.<sup>2</sup>

<sup>2</sup> Shan Wang, "Out of Many, NPR One: The App that Wants to Be the 'Netflix of Listening' Gets More Local," Nieman Lab, January 11, 2016.

## NEW YORK PUBLIC RADIO'S DISCOVER APP

Knight granted \$250,000 to allow New York Public Radio<sup>3</sup> to further develop and share the Discover app, WNYC's mobile app for on-demand listening. The app delivers curated, personalized playlists that are optimized for offline, time-shifted listening. It is aimed at New York City commuters who listen on mobile devices. Content accessible via Discover includes all WNYC news and programs, along with selected programs from other producers.

## RADIOPUBLIC PBC

Although not reviewed as part of this study, in May 2016, the Knight Enterprise Fund, along with several other investors, including The New York Times and American Public Media, announced an equity investment in RadioPublic, a podcast listening platform launched by PRX. Together PRX and RadioPublic operate as a hybrid enterprise with RadioPublic focused on listeners and PRX primarily serving audio producers.

RadioPublic is a public benefit corporation, a form of corporate organization that embeds a mission while also allowing for equity forms of capital investment. Its mission is “to help listeners discover, engage with, and reward creators of stories, podcasts, and other audio.”<sup>4</sup> RadioPublic is building a podcast listening app for iOS and Android that focuses on discovery of new content. According to founder Jake Shapiro, “We believe podcasting—audio files delivered via the open protocol of RSS—will thrive as an open ecosystem for diverse and creative voices across entertainment, journalism, and communication of all kinds. But we also believe podcasting must evolve to realize its full potential.”<sup>5</sup>

<sup>3</sup> New York Public Radio comprises radio stations WNYC AM and FM, WQXR FM as well as New Jersey Public Radio and the Jerome L. Greene Performance Space.

<sup>4</sup> “Welcome to RadioPublic,” [about.radiopublic.com](http://about.radiopublic.com)

<sup>5</sup> Jake Shapiro, “The RadioPublic approach to podcasts and the future of radio,” [about.radiopublic.com](http://about.radiopublic.com), September 16, 2016.

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# THE CHANGING CONTEXT

**The broader context around podcasting and on-demand audio is heated and dynamic, and looks different to different people.**

**Among the wildly divergent ways interviewees described podcasting:**

*... **reminds me of the launch of satellite radio** and the fear that gripped public radio broadcasters as they imagined millions of listeners gravitating to satellite's vast channel structure, built on a subscription model that felt a lot like "sustaining memberships" in price.*

*... **is like the Wild West.** The space is completely open. It's competitive, but you can stake your claim and succeed.*

*... **is like blogging in the 1990s.** Any person with access to the tools can develop a memorable voice and a large reach. There are hundreds of blogs on every niche subject imaginable. No one had a blog, then everyone had one. The same is happening with podcasts.*

*... **is like premium cable.** Audiences are willing to subscribe and they listen fervently. When they find a new show they like, they'll listen to every episode ever created.*

*... **is like public radio back in the old days.** It's very uneven but it's also very quirky and interesting. There are a few gems and a lot of garbage. It's a place where a generation found its voice.*

*... **is like Netflix or Spotify** where you subscribe to gain access to a very large catalog larger than any you would assemble for yourself.*

*... **is like the moment when newspapers had to be on the web.** Suddenly there's a whole new medium with new competencies and everyone feels they must be in the game.*

**While much ink has been spilled analyzing key developments, discussions with key players in the space—including Knight Foundation grantees and partners—surfaced 10 key themes of particular salience.**

## 1

### THIS IS NOT THE TRADITIONAL PUBLIC RADIO AUDIENCE

The podcasting audience is markedly different from the traditional audience for broadcast public radio. While research is inconsistent, audiences leading the listening surge for digital news, narrative and public affairs content still largely fit the profile of early adopters. As Jesse Holcomb, associate director of research at the Pew Research Center, said, “They’re more likely to be male, young, have higher incomes, be college graduates, live in an urban area.”<sup>6</sup> This held across Knight Foundation grantees and partners, for which the most common average age of a podcast audience is in the low 30s.

The podcast audience is also growing. Knight grantees and partners report continuous and sometimes explosive audience growth. Edison Research survey data shows a fifth of Americans

12 and older (21 percent) have listened to a podcast in the preceding month—up from 12 percent in 2013 (though Edison also notes that podcasting “accounts for only a small sliver of the share of time Americans spend listening to all audio sources”).<sup>7</sup>

In addition to podcast listeners being younger, Edison Research shows that once individuals become a podcast listener, their use of linear radio declines by more than half.<sup>8</sup> “Millennials like to time shift,” a Corporation for Public Broadcasting (CPB) executive observed. Plus, their listening is “rabid,” said one NPR executive. They “listen to a lot.”

This contrasts with the public radio broadcast audience, which Knight partners say today

represents “the core of the core.” Listeners on new platforms are likely to be “new to database” and are not already radio listeners.

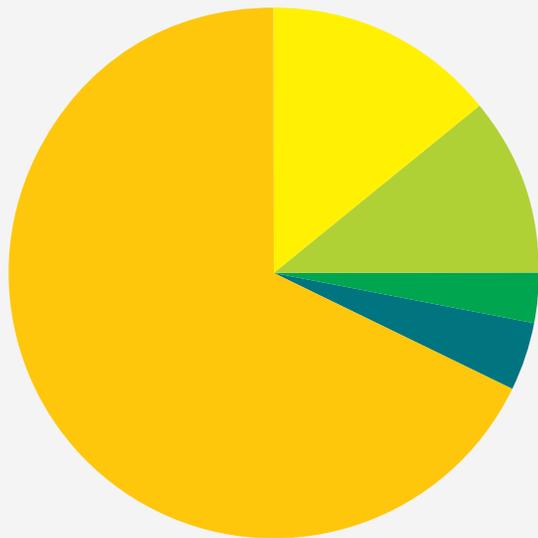
<sup>6</sup> Charley Locke, “Podcasts’ Biggest Problem Isn’t Discovery, It’s Diversity,” *Wired*, August 31, 2015.

<sup>7</sup> Nancy Vogt, “Podcasting: Fact Sheet,” Pew Research Center, June 15, 2016.

<sup>8</sup> Steven Goldstein, “New Data—The Mainstreaming of Podcasts,” *Amplifi Media*, May 26, 2016.

## WHO LISTENS TO PODCASTS?

2011



68 %

WHITE

14 %

AFRICAN-AMERICAN

11 %

HISPANIC

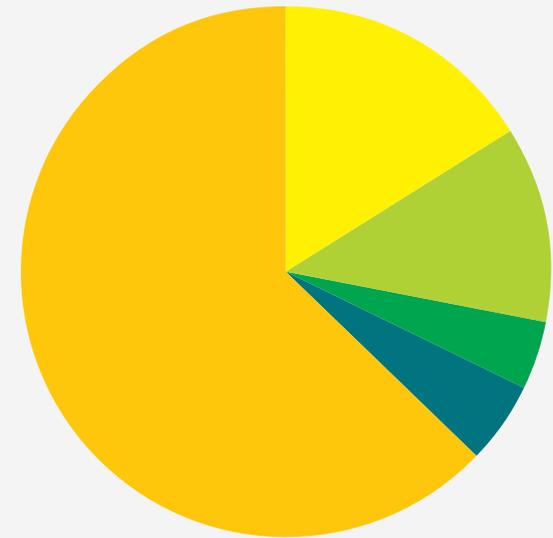
3 %

ASIAN

4 %

OTHER

2016



63 %

16 %

12 %

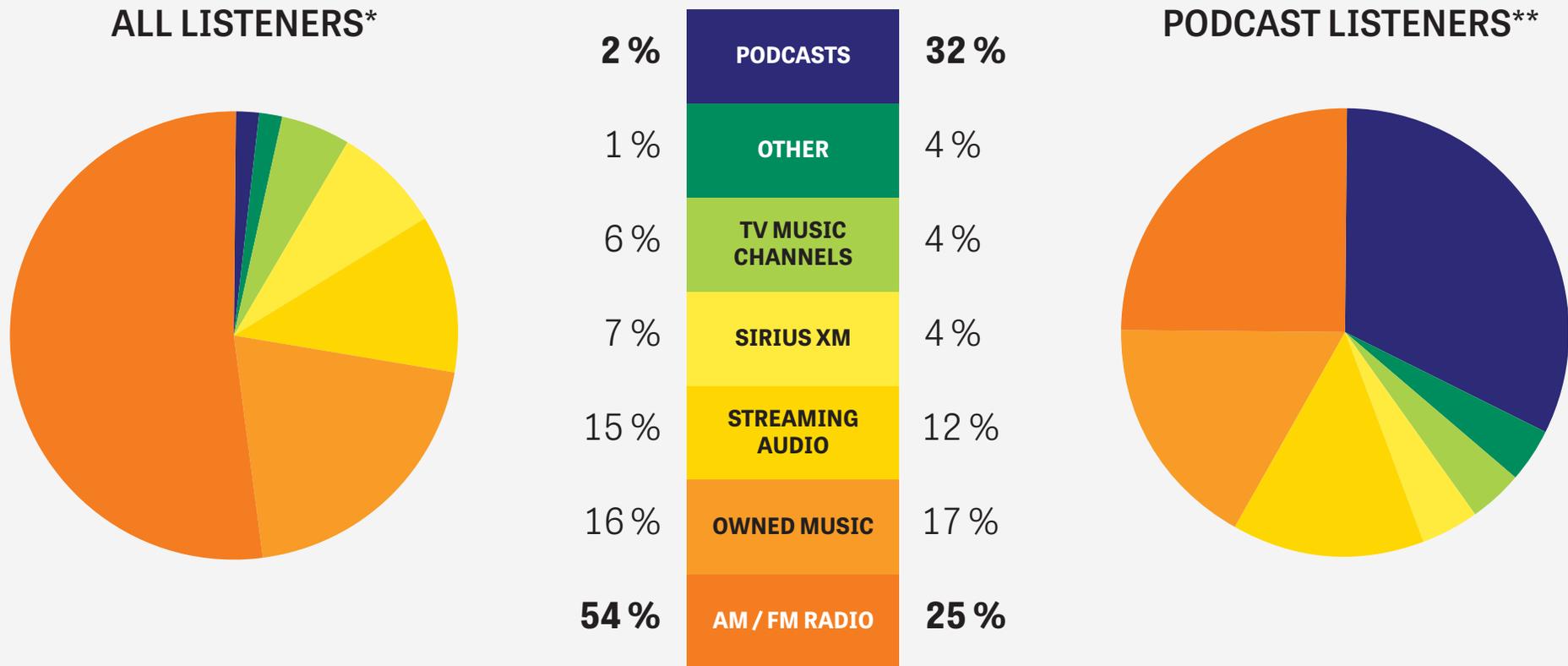
4 %

5 %

Of Americans ages 12+ who listened to a podcast in the preceding month

*The Infinite Dial 2016. Edison Research and Triton Digital.*

## PODCAST USERS LISTEN TO SIGNIFICANTLY LESS RADIO



\*Americans spend an average of 4 hours and 5 minutes each day consuming audio. This graph represents the share of time spent with each. It is based on a nationally representative sample of 2,096 Americans ages 13+ who completed a 24-hour audio listening diary in May 2014.

Source: Edison Research

\*\*Podcast listeners (defined as those who reported listening to a podcast in the preceding 24 hours) spend an average of 6 hours and 8 minutes each day consuming audio. This graph represents the share of time Podcast Listeners spend with each (N = 117). It is based on a nationally representative sample of 2,021 Americans ages 13+ who completed a 24-hour audio listening in fall 2014.

Source: Edison Research

## 2

### AN AUDIENCE-FIRST ORIENTATION IS EASIER FOR EMERGING OUTLETS

Like many media makers and outlets, public radio broadcasters are working to adapt to an audience-first universe. “Radio shows need to please a lot of people at once,” said one media analyst and podcast host. “They are fundamentally for a mass audience.” He contrasted these broadcast realities with podcasting: “Podcasts are things that listeners opt into.” Listeners are in control of when, what and how much they hear, and routes to discovery are different. It is difficult for legacy public radio organizations to serve both their existing audiences, for which paths to revenue also are clear and well established, and the emerging digital audience and less predictable revenue sources.

Station-based producers are finding that their broadcast audiences are not particularly fertile ground for drawing audiences to on-demand content. Many stations and all of the major public broadcasting networks are working to identify and reach new listeners through alternate means, most prominently social discovery, but their efforts are hampered by clunky tools and data collection methods. Gathering and interpreting real-time data can be overwhelming, and much of the most valuable audience data is locked in the black boxes of the major commercial companies that serve up podcasts.

In contrast, podcast-first producers and networks are also digital-first and without legacy broadcast systems or audiences to maintain. They can be far more nimble in developing strategies to capture useful audience data, and in surveying their dedicated audience base and iterating to improve their users’ experience. “In our world I can tell you if and when and how many listening sessions, time of day, device on or not, moving or stationary when a given person was listening,” said a public radio veteran now at a digital media company. “What we’re starting with is a list of things we want to know in order to make decisions.”

Capturing audience data is a key driver influencing public media organizations to develop their own apps and platforms, such as NPR One, Discover and the new RadioPublic app, among others launched or in development. “What we want is an audience experience where we can have a relationship with those people,” said an NPR executive.

## 3

### THE ROLE AND FUTURE OF LOCAL NEWS ARE IN FLUX

One counterintuitive suggestion from interviewees is that local news coverage may be a strong driver for digital consumption of audio. This is not the case for podcasting, although listenership for local newscasts within NPR One is much higher than predicted. There are bright spots such as “Curious City” podcast at Chicago station WBEZ and adventurous experiments from local stations such as West Virginia Public Radio, Austin’s KUT and Santa Monica’s KCRW that show that listeners will download podcasts by local producers if they take advantage of the strengths of the platform. But for the most part it is difficult for such programs to reach a scale where they can become self-sustaining. WNYC reports that its newsroom is working in hybrid formats, producing limited series for on-demand listening that expand and amplify stories that merit more depth and more expansive coverage. This area of exploration is viewed by many interviewees as ripe for innovation and investment.

Another way local news can reach widespread digital audiences is to feature it in the context of a broader national network, akin to the local-national newscasts offered back-to-back on NPR One. An executive from “Reveal” said that about half of the program’s content is reserved for investigative work from independent and local reporters. This underscores the value of partnerships, creates a marketplace for coverage that did not previously exist, exposes listeners to stories from all parts of the country, and offers the potential to create more space for investigative reporting across the dial. The program is carried weekly across 330-plus stations, as well as distributed as a podcast, taking advantage of differing listener habits. Diversity is also a core value of the “Reveal” team, so the emphasis is not just on airing voices from many communities, but also across a range of experiences and identities.

## 4

### DIVERSITY REMAINS A CHALLENGE

It has not escaped the attention of younger and more diverse audio producers that all of the most popular voices in the public media podcasting ecosystem are white, and most of them are also male—“monolithically so,” Charley Locke wrote in a 2015 *Wired* piece titled “Podcasts’ biggest problem isn’t discovery, it’s diversity.”<sup>9</sup> As of mid-2016, only a few of the top-100 iTunes podcasts that come from public media were programs explicitly created to diversify on-air voices, including NPR’s “Code Switch” (ranked 51st); “Snap Judgment” (73rd), a show that emerged from PRX’s Public Radio Talent Quest and is co-produced with WNYC Studios; and “2 Dope Queens” (28th), also from WNYC Studios.

There is a sense that the gender gap in production may be closing. CPB is investing directly in podcasts led by women, said one executive interviewed. Encouraging signs include the success of hosts such as Sarah Koenig (“Serial”) and Krista Tippett (“On Being”), support from key female public broadcasting executives such as NYPR’s Laura Walker and CPB’s Patricia de Stacy Harrison, the rise of podcast curators such as WAMU’s Lauren Ober (“The Big Listen”) and Gimlet’s Brittany Luse (“Sampler”), and the influence of well-regarded leaders such as Julie Shapiro and Anne Wootton. Female podcasters are becoming more organized, meeting up at

gatherings such as the Werk It! event at WNYC and addressing other diversity issues in the process. (For example, see Ober’s list of “57 Black-Hosted Podcasts You Should Probably Listen To.”)<sup>10</sup>

This means that podcasting’s dominance by what’s widely described as “two dudes talking” could also be on the wane—at Werk It!, Walker noted that 22 percent of podcasts are now hosted by women, up from 11 percent in 2013.<sup>11</sup>

From a listening perspective, racial and ethnic demographics are an open question— anecdotally the podcast audience is not particularly diverse, but it is difficult to find hard data on this question. (NPR says that 19 percent of NPR One users are not white vs. 13 percent of its broadcast listeners, according to a December 2015 survey.) Promisingly, the most recent survey research from Edison Research and Triton Digital suggests that podcast audiences “look increasingly like America.”<sup>12</sup>

<sup>9</sup> Locke, “Podcasts’ Biggest.”

<sup>10</sup> Lauren Ober, “57 Black-Hosted Podcasts You Should Probably Listen To,” *Medium*, July 13, 2016.

<sup>11</sup> Laura Walker, “Radio’s Next Incarnation: Join the Creative Disruption,” *Medium*, June 22, 2016.

<sup>12</sup> Tyler Falk, “Podcast Audiences Look Increasingly Like America,” *Current*, August 24, 2016.

## 5

### TALENT IS AT A PREMIUM

The brain drain from public radio to podcasting enterprises has been well documented.<sup>13</sup> Interviewees agreed that the “talent wars” are real.

Three main cohorts are susceptible to recruitment from the inner sanctums of public radio. The first group comprises experienced hosts and producers who feel constrained by the voice, tone, subject matter and orientation of public radio and have creative ideas they are not able to explore within the constructs of their current job responsibilities. The second cohort consists of younger producers and staff members who were initially attracted to public radio but do not see great potential for moving up the responsibility chain to exert more influence over programming. In the third set are the web developers, software engineers and other technical staff members whose job possibilities are plentiful, whose skills are applicable across many industries, and who have employment expectations that public media is challenged to meet (higher salaries, flexible working hours, remote locations, and consistent raises and promotions).

<sup>13</sup> Hot Pod, the weekly newsletter for podcasters, created a spreadsheet to keep track of which staff members from which public radio stations and networks had moved to which podcasting firms. When released in late January 2016, the spreadsheet counted 49 departures. Nicholas Quah, “Hot Pod: Charting the outflow of public radio talent to the new for-profit podcast industry,” Nieman Lab, January 12, 2016

## 6

### A NEW CREATIVE ECONOMY IS EMERGING

The wide-ranging and often freelance community of audio producers that works in and around public radio has latched onto podcasting as an open space for experimenting and for perfecting new skills, styles and techniques. However, for most, podcasting does not pay the bills. Instead, a pattern is emerging that is similar to art, independent music and other creative fields: Many people are creating work for passion or recognition, and only a few are rising to the level of well-compensated professionals.

Listenership is highly concentrated. Half of podcasts are downloaded less than 175 times.<sup>14</sup> Only the top 1 percent of podcasts are downloaded more than 50,000 times per episode—the minimum number that those interviewed for this report cited for a podcast to be attractive to sponsors. One approach has been the formation of podcast networks, such as Knight Foundation partners Radiotopia and Gimlet, which are operating like publishing houses or record labels by aggregating producers with a similar sound or focus, creating fan bases and taste profiles across the selections, and commanding higher rates from advertisers across their portfolio of offerings.

Interviewees confirmed that podcasts are not just a “farm team” for broadcast content but that they attract their own listeners. Successful podcasters can pitch themselves and more—they can recommend other up-and-coming podcasters, elevating their visibility.

The most successful of the podcast hosts who have emerged from the public broadcasting ecosystem cut their teeth in broadcasting and still enjoy wide on-air distribution. Chief among them are Ira Glass of “This American Life,” which started at WBEZ and incubated the podcasting megahit “Serial,” and Jad Abumrad of Radiolab, who is using his success at WNYC Studios to endorse and support the production of other podcast programs. “Planet Money,” another “This American Life” production originally hosted by Alex Blumberg and Adam Davidson, now of Gimlet, has maintained its standing in the iTunes top podcasts since January 2015.<sup>15</sup> The popularity of these podcasts suggests that broadcast is not only a powerful tool for launching and promoting podcasts, but that perhaps a substantial segment of the podcast listeners are merely time-shifting their consumption of on-air shows rather than seeking out digital-first options.

Where will new shows come from that can sustain themselves? A handful of existing organizations serve as training and networking hubs and points of distribution for independent producers who work in and around public radio. PRX’s Radiotopia, Matter.VC, and AIR’s Localore initiative have paved the way for inventive independents to experiment with developing digital-first content and platforms and to learn how to operate in the entrepreneurial mode that is in demand today. However, even these national organizations face challenges in gaining access to resources for productions available to larger networks and stations. They also lack stations’ reach, assets and brand.

<sup>14</sup> From a presentation at Podcast Movement 2016 by Rob Walch, Libsyn’s vice president for podcaster relations.

<sup>15</sup> “NPR—‘Planet Money’ American iTunes Chart Performance,” iTunes Charts, 2016.

## 7

### THE UNDERLYING INFRASTRUCTURE IS INADEQUATE

Knight grantees and other public interest players in and near the public radio space are considering how they could collaborate to build a better technical back end for digital audio. As one digital leader said, “The costs of not collaborating are going up and up.” In recent meetings, digital leaders of top stations began meeting to discuss how they might work together to share projects and identify future efficiencies.

According to various interviewees, the dream system might include a public interest app or mobile interface that serves as the point of entry to this content, customizable at the station level, and providing mechanisms for supporting both local and national productions. Areas of need cited by those interviewed include more seamless local-to-national and local-to-local content management systems; negotiated sharing agreements across digital audio platforms; widespread adoption of mechanisms for dynamic sponsorship and advertising as well as donation mechanisms; shared metrics and data capabilities; and targeted resources for production and experimentation, including in local reporting and research and development. NPR One, WNYC’s Discover App, RadioPublic

and PRX’s Dovetail ad-serving platform are all attempts to create needed audience-facing digital infrastructure, but solving the governance, funding, collaboration and interoperability problems remains challenging.

## 8

### THE FIELD NEEDS UNIFIED DATA STANDARDS

Beyond the data challenges faced by the legacy broadcasting system, on-demand audio and podcasting suffer from an industrywide lack of measurement standards to deliver audience insight and enhance revenue development at the macro level.

Certain consumption measures are relatively easy to track, but many of these do not deliver substantial insights for producers or their business operations—and not every producer counts these measurements in the same way. Furthermore, the lack of standardized data means that sponsors must rely on other methods to understand their reach. Advertising sales staff interviewed for this report say that instead of discussing the merit of audio programs, they spend a significant portion of every sales call informing potential buyers about the metrics that are or are not available for podcasts.

Standardization efforts are underway through leading advertising stakeholders, including the Interactive Advertising Bureau. In addition, a group representing more than a dozen stations and networks have offered a set of guidelines, released in January 2016.<sup>16</sup> And, an industry working group named Syndicated Media, with

participants such as PopUp Archive, Acast and PRX, has been working on common efforts to address issues such as RSS.<sup>17</sup>

<sup>16</sup> Tyler Falk, “Public radio outlets publish guidelines for measuring podcast audience,” *Current*, February 2, 2016.

<sup>17</sup> For more information, see [www.syndicated.media](http://www.syndicated.media).

## 9

### SIGNIFICANT QUESTIONS REMAIN ABOUT ADVERTISING

On-air messaging on public radio is regulated by the Federal Communications Commission (FCC) and cannot include calls to action. Messaging is generally delivered in the generic voicing of branding spots that include a business name and tag line. Furthermore, public radio journalists do not voice spots, either live or taped. Public radio spots are short and to the point.

Freed from FCC requirements and with a different audience, podcasting is discovering different forms of revenue generation. Podcast producers, especially independents and small shops, have utilized crowdfunding sites such as Kickstarter or Patreon. For example, PRX had a very successful Kickstarter campaign when Radiotopia launched, exceeding its \$250,000 goal and raising more than \$600,000. Gimlet Media raised its final \$500,000 in investment capital in a similarly successful crowdfunding effort. Many small producers encourage listeners to contribute via Patreon.

Podcasting has also found that new sources of advertising revenue CPMs in podcasting are much higher today than broadcast CPMs in public radio. (CPM is the abbreviation for the cost advertisers pay for each 1,000 people reached.) Many interviewed cited \$18 to \$25 as a CPM range for podcasting, with some much higher. In

a presentation at the 2016 South by Southwest festival, Ira Glass of “This American Life” stated that CPMs for the wildly popular “Serial” podcast were in the \$50 to \$60 range.

The ability to create interesting messages that break from public radio’s regulatory standards and long-standing production values is a key attribute of podcasts that observers say sponsors like. Increasingly common are host-read, rambling advertising spots that are custom-made and often created in a storytelling mode. Sponsors also are attracted to the “fierce loyalty” of podcast listeners and to the fact that they tend to be young, well-educated, and highly paid.<sup>18</sup> As podcasting grows in reach, sales firms expect a shift in sponsorship to include brand advertising, not just calls-to-action and consumer product spots.

One danger of depending on this revenue stream, however, is the volatility of the ad marketplace for this new media form. “Are we in a bubble? Yes and no,” said the co-producer of a hit podcast. “Probably the prices are inflated and are going to have to readjust.”

<sup>18</sup> Data from Midroll Media’s 2016 annual report on audiences, based on a survey of 168,500 listeners to 265 Midroll podcasts. “Podcasts by the Numbers,” Midroll Media, 2016.

## 10

### FEAR OF A PODCASTING BUBBLE?

For some public radio veterans, the Sturm und Drang around podcasting is unpleasantly reminiscent of previous waves of excitement around other distribution platforms, from satellite radio, to station websites, to apps, and beyond. They suggest that broadcast radio has successfully weathered prior disruptions and will continue to serve as the industry's cornerstone for listening and revenue for decades to come.

One veteran researcher suggests that the debate over the value and importance of podcasting is overblown because those involved in producing podcasts are the same ones reporting on the phenomenon and generating related buzz. The discussion is “vastly overwrought,” he said, advising funders, “There’s a lot of hype. The podcast space is so dramatically overheated in the conversation that it can really lead to bad decisions, faulty perceptions, wasted money and distraction from important ongoing things.”

This stance is bolstered by the fact that radio listening remains high. Nielsen’s annual State of the Media report for 2016 notes that “radio leads all other platforms when it comes to weekly reach (93%) among adult consumers—and with new insights available to compare radio to other platforms on a regular basis, it is clear that radio is an integral part of media consumption for

millions of Americans.”<sup>19</sup>

Of course, some competition might offer a healthy corrective to a public radio industry that has been sluggish to innovate. “We shouldn’t think of audio startups as competitors or ‘poachers’ but partners in this space,” wrote Melody Kramer, formerly of NPR.<sup>20</sup> “If public media’s goal is to educate and inform the public, and Gimlet determines a great way for doing that, then how does public media take that information and integrate it into its approach?”

<sup>19</sup> “Audio Today: Radio 2016—Appealing Far and Wide,” Nielsen, February 25, 2016.

<sup>20</sup> Melody Kramer, “Today’s Public Media Fight Misses the Point,” Medium, April 11, 2016.

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# KNIGHT INVESTMENTS: KEY LESSONS

**Knight Foundation has invested in and partnered with diverse players in the podcasting and on-demand audio marketplace. The foundation's efforts address different approaches to providing quality content to listeners who are increasingly seeking digital audio in a mobile-centric environment. While these efforts are distinct and unique in their aims, scope and structure, they have yielded important insights and lessons.**

## **SERVING NEW AUDIENCES AND CREATING NEW CONTENT**

Knight Foundation's grantees and Enterprise Fund investments have shown success in growing new audiences and creating the space for new voices in audio.

Gimlet and Radiotopia in particular have exceeded audience projections. Gimlet is reaching millions per month, many in a younger demographic than the traditional public radio audience. Radiotopia has tripled the number of monthly downloads in the past year. The NPR One app, a part of Project Carbon, tends to reach listeners whose age skews to the low 30s—far younger than the average age of an audience member for NPR's flagship properties. Surveys also show that app listeners are somewhat more racially diverse than public radio listeners.

The extent to which this audience can continue to grow is up for debate. All told, NPR's digital footprint—including through Apple's iTunes—comprises tens of millions of downloads per month. Matt Lieber, Gimlet's co-founder and president, believes that the addressable market for podcasts is far from saturated. Mobile phones are ubiquitous, and discovery is getting easier. Millions more people have heard of podcasting (as a concept) than currently listen, so even closing that gap without increasing awareness would bring a large new audience to podcasting.

Audience growth is also being achieved in new ways as efforts native to podcasting tap the power of their growing networks. Matt Lieber noted that people find out about podcasts first and foremost from other podcasts, and that Gimlet has experimented with ways to promote its new shows within the current ones.

Other successful promotional efforts include deliberately generating buzz via word of mouth, including social media mentions, and through savvy press and media coverage. Similarly, by aggregating podcasts into a network, Radiotopia is able to create a narrative around the group of podcasts and deploy the narrative for more successful marketing, sales and distribution than shows could achieve on their own.

These efforts are also giving rise to new voices. Gimlet is debuting several shows. Radiotopia has grown from 11 programs to 14 and created a contest called Podquest to find new talent. Launched in March 2016, Podquest received 1,537 entries from 53 countries. The contest created excitement in the podcast field and was widely covered by media. Radiotopia's focus on new voices, especially women and people of color, shows the depth of talent and size of audience for this work. By aggregating

podcasts from otherwise less-known producers, Radiotopia is demonstrating that a large number of high-quality producers exist who do not have regular access to other outlets, including public radio, and whose addressable audience is sizable.

This dynamic is especially true among legacy players that feel an urgency around bringing fresh blood to the field. NPR One provides producers with an open field, freed from the tight clocks and standard sound of public radio, and it allows vastly expanded opportunities to include new voices and new forms. NPR One has already proven to be a useful tool for piloting new content with real-time audience data that can inform program development. Examples include Kelly McEvers' in-depth reporting for the "Embedded" podcast, the "NPR Politics" podcast tracking the 2016 election campaigns, and podcasts created by the Code Switch team exploring race and identity. At NYPR, particularly with the launch of podcasting and program development unit WNYC Studios, the Discover app provides an off-air platform for new program development.

## **DEVELOPING NEW REVENUE AND INVESTMENT OPPORTUNITIES**

Several Knight Foundation grantees are either reinvigorating old pathways to revenue or illuminating new ones.

The results across approaches to podcast revenue vary. Gimlet, as a for-profit company, has led multiple successful fundraising rounds. RadioPublic has also managed a successful seed round. Gimlet and Radiotopia have received significant interest from advertisers. Gimlet's model has attracted enough interest to meet investment targets, and ad inventories continue to sell out for major shows. Lieber reports that sponsors are attracted to Gimlet's fiercely loyal, engaged audience, and sponsor renewals are correspondingly high.

Even within the traditional member-based support model for public media, podcasting is surfacing new opportunities. NPR One is feeding user registration to local stations, returning 50 to 80 percent "new to database" names—essentially new potential public media members to replenish a rapidly aging audience.

In addition to ad sales, podcasting efforts have illustrated new revenue opportunities. Radiotopia has raised more than \$600,000 through crowdfunding. Radiotopia has also worked to develop sponsorships, event revenue and other ways to put dollars into the pockets of independent podcast producers.

## READYING THE PUBLIC MEDIA SYSTEM FOR THE DIGITAL PRESENT AND FUTURE

In a sense, all of these efforts represent the ongoing transition of public media to a digital-first orientation. The public media ecosystem has continually pushed to evolve the ways it can meet its mission. But the migration of digital audio consumption to mobile means a new round of digital investment and digital strategizing is needed. The surge of investment in digital media is providing a source of funding that has proved attractive for public radio veterans looking for the opportunity to take entirely new approaches. Both Gimlet Media and RadioPublic are startups that have emerged from public radio. Gimlet is focused on finding and funding high-quality, informative content. RadioPublic, formed as a public benefit corporation, has instituted core elements of the public media mission into its corporate charter.

Project Carbon, in particular, was oriented around the need to transition the broadcast public radio system to the digital preferences of today's audiences. Toward that end, progress has been achieved. A key step has been the successful launch of the NPR One app. The app has been very well reviewed; its functionality is being updated continuously with new features such as a recommendation engine, donation

capability, sharing capability and many new content features.

Project Carbon has also accelerated the ability for various parts of the public radio system to reach audiences digitally. NPR Station Connect has led to more than 100 member stations across the country producing local newscasts for NPR One to serve their local on-demand audio audience. The NPR Developer Center, a part of Project Carbon, has made it possible for NPR One to be available across 30 vehicle makers and via iTunes, Google Play, Windows Phone and Google's Chromecast.

These strides not only improve the audio experience for digital and mobile listeners, but they also assist the public media system in adopting the methods of the digital media age. NPR's accomplished analytics staff has created new tools to derive insight from audience data compiled from NPR One users. The data are far richer and more nuanced than the analytics producers can obtain from other third-party platforms. Similarly, through the Discover app and the development of digital audio content, NYPR leaders believe they have arrived at key insights about both advertisers and audiences.

Despite this important progress, much work remains to be done. Public radio has yet to fully

scope, design and cost a scalable, shared digital infrastructure that can serve the system's major market stations and its leading producers (including NPR). Many of those interviewed acknowledge that the challenge of building an adequate digital infrastructure is, quite simply, both a more major undertaking and a more daunting challenge than they anticipated.

# CONCLUSION

Podcasting and on-demand audio is a rapidly evolving medium, ripe for experimentation and innovation and well suited to creative and far-reaching public interest applications. Many of podcasting's most successful programming is crafted by public radio producers or by people who have recently left public radio for podcasting startups. Yet the public radio system, one of the nation's most utilized and trusted sources of news and information, is not yet well positioned to take advantage of deep shifts underway as the rising, younger audience moves from broadcast to mobile and digital audio platforms. Competitors loom large.

Knight Foundation investments have made some significant strides in this context, but they have also encountered headwinds. While digital upstarts in which Knight has invested are growing audiences and lighting a path to new forms of sustainability, they remain in early stages, with real questions about their full growth potential. Efforts to transform the larger public media system, especially through Project Carbon, have yielded progress and also

illuminated larger challenges in moving the NPR structure toward an adequate digital backbone.

All of this is happening in a dynamic context, whose future may be hard to predict. The demand for quality news and audio content remains firmly fixed across generations. The best model for meeting these demands and the point of sustainability is an open question.

Knight and other grantmakers across the U.S. can benefit from conversations with local and national media makers to identify opportunities for new impact as audiences' listening patterns shift to on-demand. Today's dynamic environment makes timing especially good to bring new voices and new audiences to public interest programming and to help lower barriers to entry so that journalism and public information programming can flourish as this key delivery platform expands.

# APPENDIX A: INTERVIEWEES



## INDIVIDUAL INTERVIEWS

Joaquin Alvarado, CEO, The Center for Investigative Reporting

Chris Bannon, Chief Content Officer, Midroll Media

Jennifer Brandel, Founder / CEO, Hearken

Dana Chinn, Director, USC Annenberg Norman Lear Center Media Impact Project

Harry Clark, Director of Sponsorship, KCRW

Jeffrey Cranor, Co-writer, "Welcome to Night Vale" podcast

Bill Davis, President and CEO, Southern California Public Broadcasting

Nicholas DePrey, Analytics Manager, Innovation Accountant, NPR

Erik Diehn, Vice President of Business Development, Midroll Media

Mikel Ellcessor, Owner, Ellcessor Media & Consulting

Jody Evans, Executive Director, Public

Radio Program Directors Association

Lex Friedman, Vice President of Sales and Development, Midroll Media

Mark Fuerst, Founder, Public Media Futures Forum

Trent Gillis, Chief Content Officer, "On Being"

Anya Grundmann, Vice President for Programming and Audience Development, NPR

Steve Henn, Co-founder, Tiny Garage Studios

Melody Kramer, Founder and CEO, Media Public

Andi McDaniel, Senior Director of Content and News, WAMU

Allen McDuffee, Host/Producer, "Governmentality"

Eric Nuzum, Senior Vice President of Original Content Development, Audible

Lauren Ober, Host / Reporter / Producer, "The Big Listen," WAMU

Diantha Parker, Senior Staff Editor, New York Times

Erika Pulley-Hayes, Vice President, Radio, Corporation for Public Broadcasting

Nicholas Quah, Proprietor and Publisher, Hot Pod Media

Adam Ragusea, Journalist in Residence, Visiting Assistant Professor, Mercer University

Sue Schardt, Executive Director, Association of Independents in Radio

Julie Snyder, Executive Producer, "Serial"

Charles Starr, Comedian and listener

Bruce Theriault, President, Bolder Strategies

Tom Thomas, Co-CEO, Station Resource Group

Laura Walker, President and CEO, New York Public Radio

Irving Washington, Deputy Director, Online News Association

Anne Wootton, Co-founder, CEO, Pop Up Archive

J.J. Yore, General Manager, WAMU

# APPENDIX A: INTERVIEWEES



## KNIGHT PROJECTS: SITE VISIT PARTICIPANTS AND INTERVIEWEES

### Gimlet Media

Matt Lieber, *Co-founder and President*

### KPCC

Alex Schaffert, *Director, Digital Media*

Melanie Sill, *Vice President, Content*

### KQED

Tim Olson, *Vice President, Digital Media and Education*

### MPR

David Kansas, *Executive Vice President and Chief Content Officer*

Steve Nelson, *Program Director, Infinite Guest (former)*

Peter Rasmussen, *Director of Product Development*

Michael Reszler, *Chief Digital Officer, Vice President for Innovation and Digital Content and Strategy*

### NPR

Dianne Brace, *Executive Director of Institutional Giving*

Zach Brand, *Vice President of Digital Media (former)*

Thomas Hjelm, *Chief Digital Officer*

Mathilde Piard, *Programming Project manager*

NPR, *continued*

Israel Smith, *Senior Director, Promotion and Audience Development*

### PRX

John Barth, *Chief Content Officer*

Kerri Hoffman, *CEO*

Julie Shapiro, *Radiotopia Executive Producer*

### WBUR

Tiffany Campbell, *Executive Editor, Digital*

John Davidow, *Managing Director, Digital*

David Moore, *Lead Developer*

William Smith, *Web Developer*

### WHYY

Kyra McGrath, *Executive Vice President and Chief Operating Officer*

Roseann Oley, *Vice President, Institutional Advancement*

### WNYC

Dean Cappello, *Executive Vice President and Chief Content Officer*

Amy Fitzpatrick, *Director of Institutional Giving*

Thomas Hjelm, *Executive Vice President & Chief Digital Officer (former)*

Nathaniel Landau, *Chief Digital Officer (current)*

*We also interviewed industry experts who preferred to remain anonymous.*

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# APPENDIX C: ABOUT THE RESEARCH TEAM



## **SARAH LUTMAN**

is principal at Lutman & Associates, a consulting and program development enterprise.

She tweets about her work @Lutman\_Sarah.

## **JESSICA CLARK**

is founder of Dot Connector Studio, a media production and strategy firm.

Learn more at [dotconnectorstudio.com](http://dotconnectorstudio.com) or follow her on Twitter at @beyondbroadcast.

## **ANGELICA DAS**

is a senior associate at Dot Connector Studio.

**ACKNOWLEDGMENTS:** Many thanks to Knight Foundation for supporting this in-depth look at the field of public interest audio, to Mark Fuerst for his collaboration and insights, and to the many individuals who generously provided their perspectives.

# APPENDIX D: DIGITAL INFRASTRUCTURE GRID



The following chart is a discussion draft—informed by interviews—of the status and current gaps of a shared, scalable digital infrastructure for public radio. This is not comprehensive or definitive—it is intended to spark a discussion.

Element	What commercial solutions are available and in use?	What known projects are in play?	Current status, notes, questions
<b>Content management system</b>	<ul style="list-style-type: none"> <li>• Drupal</li> <li>• WordPress</li> <li>• Django</li> <li>• Brightspot</li> <li>• Others</li> </ul>	<ul style="list-style-type: none"> <li>• None within the Project Carbon stations</li> <li>• PBS Bento</li> <li>• NPR Core Publisher</li> </ul>	<ul style="list-style-type: none"> <li>• Solutions are available, but stations have made disparate choices over time and their solutions are not compatible. For example, NPR Digital Services' CMS is built on Drupal. Others that have tried to work within Drupal have not stayed with it. KPCC and MPR use Rails, an open source solution that stations could come together to customize.</li> <li>• PBS and NPR have both made major investments to create content management systems for their stations to use—Bento for PBS and Core Publisher for NPR. Each serves dozens of stations. Like all services that need to serve many clients, the functionality is uniform across many different stations. These systems are used mostly by midsize and smaller market stations. Larger stations (such as Project Carbon stations) tend to build their own CMS to enable more customization.</li> <li>• The challenges of CMS systems are not unique to public media; for example, most news publishers are working on CMS challenges and opportunities.</li> </ul>
<b>Audio storage, archiving</b>	<ul style="list-style-type: none"> <li>• Many digital asset management (DAM) providers</li> <li>• Dalet</li> </ul>	<ul style="list-style-type: none"> <li>• Loud.ly</li> </ul>	<ul style="list-style-type: none"> <li>• Loud.ly is in the research phase. It is intended to solve audio storage at a public radio system level.</li> <li>• Dalet is one of a number of media asset management systems in use in commercial and public media organizations.</li> </ul>
<b>Audio handling</b>	<ul style="list-style-type: none"> <li>• Large opportunity for development</li> </ul>	<ul style="list-style-type: none"> <li>• Loud.ly</li> </ul>	<ul style="list-style-type: none"> <li>• Loud.ly is in the research phase. It is intended to solve audio handling at a public radio system level.</li> </ul>
<b>Audio player</b>	<ul style="list-style-type: none"> <li>• JW Player</li> <li>• Kaltura</li> </ul>	<ul style="list-style-type: none"> <li>• KPCC, WBEZ, NYPR and WBUR have separately invested in their audio players</li> </ul>	<ul style="list-style-type: none"> <li>• KPCC player is available on Git Hub.</li> </ul>
<b>Personalization engine</b>		<ul style="list-style-type: none"> <li>• NPR One has early version</li> <li>• Discover from NYPR</li> </ul>	<ul style="list-style-type: none"> <li>• NPR, PBS and stations seek to provide better recommendations and services based on user data (numbers of users, their identity and their behavior). NPR One provides initial functionality in this direction. NYPR has invested in Discover, a content recommendation engine also used by WBUR and OPB (Oregon Public Broadcasting).</li> </ul>

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<b>Distribution:</b> Publishing	<ul style="list-style-type: none"> <li>• Various APIs</li> <li>• Associated Press feed</li> </ul>	<ul style="list-style-type: none"> <li>• Public Media Platform</li> </ul>	<ul style="list-style-type: none"> <li>• A coalition of PRX, NPR, PBS and APM produced the Public Media Platform, an API for exchanging rich media among public media organizations. NPR is managing the latest upgrades to the system. It is a major public media project.</li> </ul>
<b>Distribution:</b> Front-end audio aggregation	<ul style="list-style-type: none"> <li>• iTunes</li> <li>• Stitcher</li> <li>• Android app</li> <li>• Other apps and platforms</li> </ul>	<ul style="list-style-type: none"> <li>• RadioPublic (PRX)</li> <li>• Spoke (Tiny Garage Studios)</li> <li>• Pique (WNYC)</li> <li>• Station apps (various)</li> <li>• NPR One</li> </ul>	<ul style="list-style-type: none"> <li>• Pre-launch for RadioPublic, Spoke, Pique. Iteration phase for NPR One. Plentiful distribution of platforms including stations' own websites and apps will continue.</li> </ul>
<b>Distribution:</b> Cars	<ul style="list-style-type: none"> <li>• Apple CarPlay, Ford Sync</li> </ul>	<ul style="list-style-type: none"> <li>• NPR Connected Cars services</li> </ul>	<ul style="list-style-type: none"> <li>• NPR has significant investment in Connected Car operating systems and applications. These get station audio into high-visibility places on car dashboards. This is not something stations can do on their own.</li> </ul>
<b>Distribution:</b> Other	<ul style="list-style-type: none"> <li>• Amazon Echo, messaging services and the like</li> </ul>	<ul style="list-style-type: none"> <li>• NPR audio in Amazon Echo</li> </ul>	<ul style="list-style-type: none"> <li>• Distribution to emerging platforms such as Amazon Echo and messaging services requires robust publishing APIs/tools and business deals that can be achieved only in joint arrangements. Most stations could not provide service robustly to these platforms on their own, certainly not with an integrated local and national service.</li> </ul>
<b>Analytics and testing</b>	<ul style="list-style-type: none"> <li>• Nielsen is trying to capture online in addition to broadcast audio ratings, however this requires a software development kit, such as an Apple podcast player, to be used by all clients.</li> </ul>	<ul style="list-style-type: none"> <li>• NPR One</li> <li>• IAB</li> <li>• Public Radio Engaged</li> <li>• NPR analytics</li> <li>• PBS analytics</li> </ul>	<ul style="list-style-type: none"> <li>• There is a movement toward shared consumption metrics which is expected to advance in coming months. NPR is working on nuanced analytics for programming within NPR One. IAB's members have formed a metrics group to study and publish guidelines this year.</li> <li>• Analytics should also include user behavior data—getting these data back from various places where they are consumed and then adapting and improving services, such as by providing recommended listening based on use or news alerts and taking into account such factors as users' location, preferred platform and interest areas.</li> <li>• NPR has a major investment in analytics and testing on behalf of stations, including a roll-up and analysis service of Google Analytics that looks at station traffic across hundreds of station sites. The service also reviews and shares analysis for stations on, for example, user behaviors, NPR One behaviors and NPR.org behaviors.</li> <li>• PBS has a similar analytics unit that looks at traffic across PBS station sites and usage across over-the-top content, PBS Kids, PBS Learning Media and other units.</li> <li>• NPR coordinated a podcast metrics group in 2016; KQED, MPR, NYPR and others participated.</li> </ul>

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<b>CRM</b>	<ul style="list-style-type: none"> <li>• Salesforce</li> <li>• Allegiance</li> <li>• Team Approach</li> <li>• Others</li> </ul>	<ul style="list-style-type: none"> <li>• None within Project Carbon stations</li> <li>• WGBH's Contributor Development Partnership</li> </ul>	<ul style="list-style-type: none"> <li>• CRM is in better shape than other elements, though there is no shared public media user database with business rules for each station's access.</li> <li>• WGBH has a CRM/marketing automation service for stations. Dozens of stations subscribe; it leverages Salesforce (roundCause NGO Connect), RedPoint and other services.</li> </ul>
<b>User Management</b>	<ul style="list-style-type: none"> <li>• Gigya</li> <li>• Janrain</li> <li>• LoginRadius</li> </ul>	<ul style="list-style-type: none"> <li>• Carbon Services Identity Platform</li> <li>• PBS membership identity project and mVault</li> </ul>	<ul style="list-style-type: none"> <li>• These services are designed to identify and manage users. There is no single sign-on that allows users to seamlessly move between NPR and local stations, and among devices, while saving content and payment preferences.</li> <li>• PBS also has an identity management system that integrates station affiliation. Last year, PBS launched an identity and authorization system called mVault that powers the identity exchange for Passport.</li> </ul>
<b>Sharing</b>	<ul style="list-style-type: none"> <li>• None. But Facebook and Twitter could solve this if they wanted to. SoundCloud provides some useful embedding tools.</li> </ul>	<ul style="list-style-type: none"> <li>• NYPR's audiograms</li> <li>• Public Radio Engaged</li> <li>• NPR's "This American Life"</li> <li>• Satchel</li> </ul>	<ul style="list-style-type: none"> <li>• Through the Knight Prototype Fund, innovation is being further explored (beyond Project Carbon stations).</li> </ul>
<b>Discovery</b>	<ul style="list-style-type: none"> <li>• Google is working on this (audio search)</li> </ul>	<ul style="list-style-type: none"> <li>• Google</li> <li>• Public Radio Engaged</li> <li>• Pop Up Archive</li> </ul>	<ul style="list-style-type: none"> <li>• There is a discovery component within Public Radio Engaged with potential for adoption at the system level.</li> </ul>
<b>Revenue:</b> Dynamic insertion / ad servers	<ul style="list-style-type: none"> <li>• Ad Wiz</li> <li>• Triton</li> <li>• Panoply (on-demand only)</li> </ul>	<ul style="list-style-type: none"> <li>• Dovetail (PRX podcast ad tool)</li> </ul>	<ul style="list-style-type: none"> <li>• Available, but tied to streaming/bandwidth agreements. Decoupling those could give public radio stations more leverage with bandwidth providers.</li> </ul>
<b>Revenue:</b> Membership systems (frictionless payment)	<ul style="list-style-type: none"> <li>• Large opportunity for better development here</li> </ul>	<ul style="list-style-type: none"> <li>• Carbon Services Identity Platform</li> </ul>	<ul style="list-style-type: none"> <li>• Apple takes a 30% cut on in-app contributions. NPR One sends users to a website. Better solutions are needed.</li> </ul>

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<b>Localization</b>	<ul style="list-style-type: none"> <li>• Neustar</li> <li>• IP2Location</li> <li>• Akamai</li> <li>• Others</li> </ul>	<ul style="list-style-type: none"> <li>• NPR One priority but not yet being fully addressed</li> </ul>	<ul style="list-style-type: none"> <li>• Would ensure localization of NPR One and NPR.org for both the network and the stations. Requires UX and development effort on both ends.</li> <li>• PBS also provides localization on, for example, PBS.org, over-the-top content, apps.</li> </ul>
<b>Public radio database and data warehousing</b>	<ul style="list-style-type: none"> <li>• N / A</li> </ul>	<ul style="list-style-type: none"> <li>• NYPR has a data warehousing project underway</li> <li>• MPR has a solution as well</li> </ul>	<ul style="list-style-type: none"> <li>• Every major station will need this, so perhaps one of these existing projects could be looked at to see whether one or more of them is scalable.</li> </ul>
<b>Meta data taxonomy</b>	<ul style="list-style-type: none"> <li>• Gracenote has product in the works</li> </ul>	<ul style="list-style-type: none"> <li>• N / A</li> </ul>	<ul style="list-style-type: none"> <li>• More of a conceptual project than a technical one is to establish shared taxonomy that allows a shared system of tagging content that supports seamless national/local integration.</li> </ul>
<b>App framework</b>	<ul style="list-style-type: none"> <li>• N / A</li> </ul>	<ul style="list-style-type: none"> <li>• NPR One could evolve</li> <li>• Jacobs Media Strategies produces audio apps for many public and commercial stations—not an open framework but a paid service.</li> </ul>	<ul style="list-style-type: none"> <li>• Without station streams, stronger localization and a powerful donation system NPR One falls short of answering stations' needs and requirements. Also, it is likely that over time, additional national and local apps will be built. What is needed is a white label app framework that local stations could adopt.</li> </ul>
<b>Email services</b>	<ul style="list-style-type: none"> <li>• Eloqua</li> <li>• MailChimp</li> <li>• Marketing Cloud</li> </ul>	<ul style="list-style-type: none"> <li>• Marketing Cloud</li> <li>• RedShift (via WGBH CDP)</li> </ul>	<ul style="list-style-type: none"> <li>• Stations have various email marketing tools, and their sophistication varies. WGBH provides a service to stations around email marketing.</li> </ul>



**JOHN S. AND JAMES L. KNIGHT FOUNDATION**

SUITE 3300  
200 S. BISCAYNE BLVD.  
MIAMI, FL. 33131-2349  
TELEPHONE: (305) 908-2600