



EAGLE HILL
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Corporation for Public Broadcasting System Technology Assessment

Executive Summary

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Overview

The public media community faces several challenges, including: the termination of Public Telecommunications Facilities Program (PTFP) federal funding in 2011; rapidly evolving broadcast and production technology trends; and mandatory spectrum repacking for many public television stations following the Broadcast Incentive Auction. To better understand public television and radio stations' technology challenges and needs today and in the future, the Corporation for Public Broadcasting (CPB) commissioned an unprecedented and comprehensive System Technology Assessment. The Assessment sought to understand the production and broadcast technology equipment state and plans for the system's next 2-5 years; prioritize equipment replacement and related financial needs; identify resource gaps that could impede sustainability of the evolving public media system; and offer innovative solutions for bridging, grouping, and comparing gaps among diverse station cohorts.

The backbone of the Assessment was a massive equipment survey that catalogued stations' broadcast and production technology holdings, their replacement plans and timelines, and associated financial needs. Additional questions gathered data on general managers' positions on key technology trends, and their top-down assessment of station finances and constraints.

Throughout this process, Eagle Hill worked with key stakeholders to validate the Assessment's scope, focus, content, and structure. Three facilitated sessions with the project's Advisory Panel (comprising 15 key public media stakeholders and thought leaders) provided key insights, validated project direction, and built buy-in for the project. Throughout the survey run, Eagle Hill also worked closely with stations themselves, as well as more than 25 affinity group organizations to build system engagement, and to identify and address respondent challenges.

A multipronged effort of coordinated communications from CPB, Eagle Hill, and affinity organizations produced an unprecedented response rate of 73% for radio and 92% for television, cataloging more than 60,000 pieces of equipment throughout the system. This level of participation yields a strong measure of credibility to the Assessment results, and provides a solid basis from which to draw analyses and plan solutions that can be used to move the public media system towards a sustainable future.

Key Insights and Recommendations

The Assessment draws from a range of analyses presented throughout the Final Report to identify key insights and recommendations following five themes:

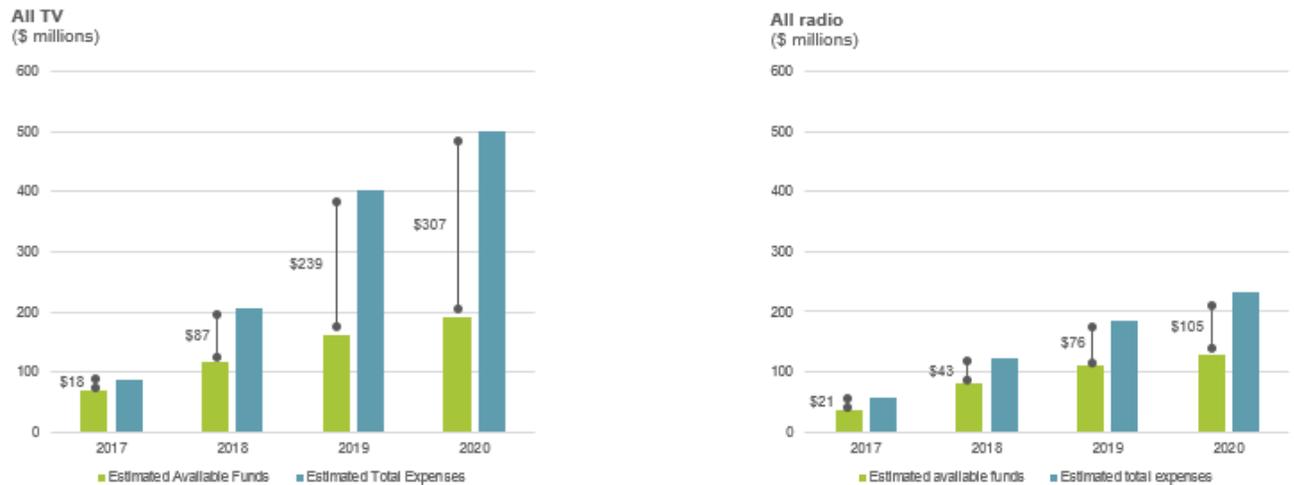
1) Funding deficit

This Assessment moves the gap between projected funds and technological needs from the anecdotal to a data-backed reality. If equipment needs and available funds progress as forecasted, the system will face a cumulative \$412 million shortfall by 2020 (see Figure 1). These findings add urgency to efforts to find efficiencies, add new sources of revenue, and develop robust asks of existing sources of funds—Assessment results provide a strong, credible basis for funding advocacy at national and local levels.



Figure 1

Cumulative Financial Gap Between Estimated Total Expenses and Available Funds for Broadcast and Production Equipment



In the face of this large and growing funding gap, and recognizing the significant challenges of raising funds, analyses also suggest other opportunities to move the system to a more sustainable future:

- 2) Strategic planning
Stations struggle to plan more than 1-3 years out—in terms of both their estimated financial needs and resources, and in terms of planning equipment refreshes in ways that coordinate with their business operations and allow them to stay technologically current. These findings suggest opportunities to help stations improve operational planning and to develop strategic technological replacement plans that minimize risk in the face of financial uncertainties.
- 3) Technological maturity
Stations show interest in new technologies, but face challenges in embracing these trends in ways that effectively support their mission and embrace cost savings while also mitigating cybersecurity risks. Stations could benefit significantly from education around trends, efforts to connect them to existing resources on internet access, and a path to technological maturity that reflects opportunities for improvement while respecting existing variation in station’s maturity and their technological needs.
- 4) System-wide collaboration
The growing funding gap increases the system’s incentives to work together. The system can leverage shared buying power, but also embrace lower-cost initiatives to share operations, and build on existing efforts to share knowledge and personnel.
- 5) People and skills gap preparation
The system has a generous, conscientious, mission-focused, and engaged workforce. However, the system is already grappling with a growing shortage of RF engineers, looming difficulties in attracting and retaining digital expertise, and some stations face serious succession challenges around station leadership. Stations can mitigate these workforce risks by developing talent through efforts like internships and education, as well as through explicit workforce and succession planning.



Findings

More broadly, the Final Report offers insights on licensees' operating model—how stations use production and broadcast technology to deliver on their mission. While many stations are interested in embracing new technology trends, they need support to better understand and more fully synchronize these trends with their equipment planning. For example, many stations express interest in migrating to IP and Cloud-based solutions, but lack a robust cybersecurity infrastructure to help them do so safely. Data also strongly suggest the public media system is accruing technological risk by postponing equipment replacements beyond their optimal end-of-life.

The Final Report also highlights key areas of focus for the system's technology infrastructure. Data show that several equipment groupings face a replacement "cliff" within the next five years. For example, both the television and radio sides of the system will need a significant number of transmitters over the next four years. Some of these equipment groupings draw from a narrow range of vendors, while others draw from a wide number of providers. Both are ripe for station coordination and collective purchase negotiations. Similarly, several equipment areas represent a consistently intensive area of investment, highlighting the advantage of collective purchase agreements or embrace of new technologies to reduce these costs.

Finally, while the sizable gap between needs and resources is a key Assessment takeaway (see Figure 1), the Final Report digs deeper to identify the ways in which restrictions on stations' funding sources make it difficult to harness these assets to support their technological future. Data also highlight a disconnect between the needs projected by general managers' versus those estimated by their engineers—suggesting a need for better integration between stations' business operations and their technologists.

Next steps

These findings offer significant opportunities to help move the public media system towards a sustainable future, but these opportunities are not without their challenges.

First, this Assessment represents a tremendous, system-wide investment in the rich findings presented in the Final Report, and a dataset that may be mined further for follow-on questions. There is an opportunity to share these resources with the system at large, though the raw data will require experienced data analysts to generate robust and meaningful findings.

Second, national level organizations have an opportunity to use this Assessment's data-backed findings to plot a blueprint for system collaboration around: station education in technology and business operations; robust funding asks; and leveraging shared market power. No one organization can (or should) provide a path forward on such a broad range of issues—the national-level organizations have an opportunity to reach consensus on the need for initiatives on these issues, and divide and share ownership of the overall blueprint.

Finally, to operationalize these opportunities, national organizations can reach out to the broader stakeholder community—validating the blueprint and developing specific initiatives. Crucially, this step relies on buy-in from affinity groups and other members of the broader public media system, and initiatives must be simultaneously voluntary, but hold those who volunteer accountable for follow-through.

“ Be the same in ways that make you stronger: allowing you to be different in ways that matter

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Deliverables

The CPB System Technology Assessment deliverables are listed in the table below:

#	Deliverable	Brief Description
1	Final Report	PDF file that contains Eagle Hill's analysis, insights, and recommendations as follows: production and broadcast technology equipment current and future state and plans for the entire public media system in the next 2-5 years (including how TV differs from radio); prioritized equipment replacement and related financial needs; resource gaps that may impede sustainability of the evolving public media system; and innovative solutions for bridging, grouping and comparing gaps among diverse station cohorts.
2	Appendix	PDF file that contains additional data visualizations that Eagle Hill Consulting produced, were not prioritized for analysis as part of the final report, and are included here for completeness. It also contains key learnings from the interviews and pilot that were conducted prior to launching the survey. The Appendix is intended as a reference document from which CPB can draw its own conclusions about the data.
3	Data and Codebook	Excel file with the raw data set, codebook that defines the variables, and notes on how to use the data set.
4	Technology Survey Questions, Strategy & Operations Survey Questions, FAQs, and Glossary	PDF file of the survey questions and support documents for the television, radio, and joint licensee versions of the survey.