

KQED

PUBLIC MEDIA,
SCIENCE
JOURNALISM
AND KQED'S

QUEST

FOR THE FUTURE

Elizabeth Bandy, Ph.D.

On September 12, 2011, representatives of seven public broadcasting stations from around the United States gathered in Omaha, Nebraska, to discuss the future of their nascent science media partnership, the QUEST Regional Hubs Collaborative. **The team leaders from each partner station were not meeting for the first time; however, it might have been their last meeting. In fact, as QUEST's two-year pilot phase came to an end the group was coming together to decide whether or not to go forward at all.**



During the pilot the teams from these stations had embarked on a journey to adopt an innovative model for producing, sharing and distributing multimedia science content, an exciting and challenging undertaking. Their goal was to produce and share audio, video, web and educational science content. To achieve it, the seven hub teams needed to develop production practices and skills in line with advances in digital media technologies and foster new relationships and changes in the workplace culture within each organization.

Reflecting on the scope of the project's innovations, Valentine Kass, who oversaw the project's grant from the National Science Foundation (NSF), referred to QUEST as a "paradigm shift" in how public broadcasters operate and how media can be harnessed to promote science learning outside the classroom. For the QUEST team members, participating stations and funders alike, this paradigm shift required innovation, creativity, visionary thinking and a willingness to take risks, not to mention a great deal of hard work, trust and patience. The QUEST Regional Hubs Collaborative pilot had put all of these qualities to the test, and thus the leadership team gathered in Omaha with a mixture of hope and frustration.

1. Team Leaders from WHYY Philadelphia did not attend the meeting in person but joined in by Skype.

With tensions high, the group settled around a conference table¹ in a cavernous concrete room in the heart of a former warehouse in Omaha's Old Market District. The space was part of Kaneko, a center developed by internationally renowned artist Jun Kaneko and his wife, Ree, to foster and celebrate creativity through design, ideas, performance and innovation. For the project to move forward, the leadership team would need to rely on the relationships they had forged and draw inspiration from their surroundings. Before their two days in Omaha came to an end, the group had to develop a plan that would resolve their frustrations and allow them to realize their vision of delivering high-quality, local, multimedia science content to seven regions of the country. The stakes? Relevance for each individual station and for public media as a whole.

The SEN Experiment



– Sue Ellen McCann,
Executive in Charge, Science

Experimentation, innovation, creativity. These are probably not the first words that come to mind when one considers public media in the United States. Rather, people tend to perceive public media as traditional and trustworthy, providing content for young children and retirees and not particularly relevant or cutting-edge. In any business sector, neither great prosperity nor basic survival provides ideal conditions to foster innovation or creativity. The first can lead to complacency and the latter to maintenance of existing systems.

Throughout the 1980s and 1990s, public broadcasters left behind an era of big-budget documentary projects filmed all over the world and entered a period of shrinking budgets and aging audiences. Moreover, niche programming on a multitude of cable TV channels, followed by the explosion of the World Wide Web, threatened the very premise that public broadcasting provided content not found elsewhere and that wasn't commercially viable.

As public media entered survival mode, many staff members left the system, whether to find greener pastures or due to layoffs, and those who stayed found themselves struggling to get their jobs done with increasingly limited resources. This atmosphere led KQED's Science Executive in Charge Sue Ellen McCann to comment that "public broadcasting had been asleep for years." Serving as one wake-up call, the QUEST project emerged as a direct challenge to that way of existing.

QUEST did not begin as a collaboration of seven stations, however. In 2004, KQED initiated an experiment in multiple media production that became KQED QUEST and later the QUEST Regional Hubs Collaborative. Initially, the QUEST project grew out of several conversations that were taking place within the walls of KQED around 2003. By the following year those conversations had coalesced into the SEN (Science, Environment and Nature) Experiment:

SCIENCE LITERACY + DIGITAL TECHNOLOGIES + CONTENT-BASED PRODUCTION = SEN EXPERIMENT

The project's goals were to develop and test a new model for creating media in a digital world and increase science literacy in the San Francisco Bay Area.

SCIENCE LITERACY

KQED could have chosen any content area for its experiment in multimedia production. Station leaders decided to focus on science and environmental stories for several reasons. First, KQED research had indicated that science was a key area of interest for Bay Area audiences. Moreover, the Bay Area is home to a broad range of scientific research institutes and organizations, companies developing new technologies, natural parks and preserves, and a strong environmental movement, all of which could serve as content for local science stories. Finally, the SEN Experiment was funded by the Gordon and Betty Moore Foundation, a San Francisco-based private family foundation. Moore, and in particular, then Communications Director Doug McConnell and Senior Program Officer Marguerite Bachand expressed a need to address science literacy and the recent decline in science media coverage and had funded a report on the state of environmental journalism.

Science journalism decline. Concurrent with the threats facing the public broadcasting system at the approach of the 21st century, shifting economic models and social changes precipitated a decline in science journalism coverage in the United States. While new forms, such as citizen science, would emerge along with online outlets for science content, these forms cater to and attract those with an interest in science. They have not replaced professional science journalists consistently reporting on innovations, developments, environmental issues and the like through major media outlets. Long-time science and environment writer for the *San Jose Mercury News* and QUEST Managing Editor Paul Rogers described a “heyday” in which science reporters had the budgets to travel the world to cover science and environmental stories, much like the period of prosperity experienced in public media. Also like public media, the news media found themselves facing shrinking profits and shifting audiences with the rise of the Internet and digital media. A loss in revenues from newspaper classified ads combined with ever more media outlets competing for a shrinking pot of advertising dollars led newspapers — the ones that didn’t fold altogether — to decrease staff and even cut science reporting units entirely.

The most recent *Pew State of the News Media* report indicates that the “number of Full-Time Professional News Jobs at Newspapers” has dropped by one-third since 2000. For both newspapers and television news, the state of science reporting is even more dire. Nationwide, the number of weekly science sections in newspapers declined 80 percent between 1989 and 2012, according to a report by the *Columbia Journalism Review*. Similarly, an American Communications Foundation study found an 83 percent drop in the amount of time devoted to environmental coverage on nightly television news broadcasts between 1989 and 2003. This study reports that the decrease in environmental coverage stems from a number of factors, including budget cuts and the increasingly complex nature of environmental stories, which are global in nature and frequently politically charged.

DECLINE OF PRINT AND TELEVISION SCIENCE JOURNALISM

Number of Weekly Science Sections in Newspapers

95

1989

34

2005

19

2012

Source: Columbia Journalism Review

Amount of Nightly Network Environmental News Coverage

774 MINUTES/
YEAR

1989

132 MINUTES/
YEAR

2003

Source: American Communications Foundation

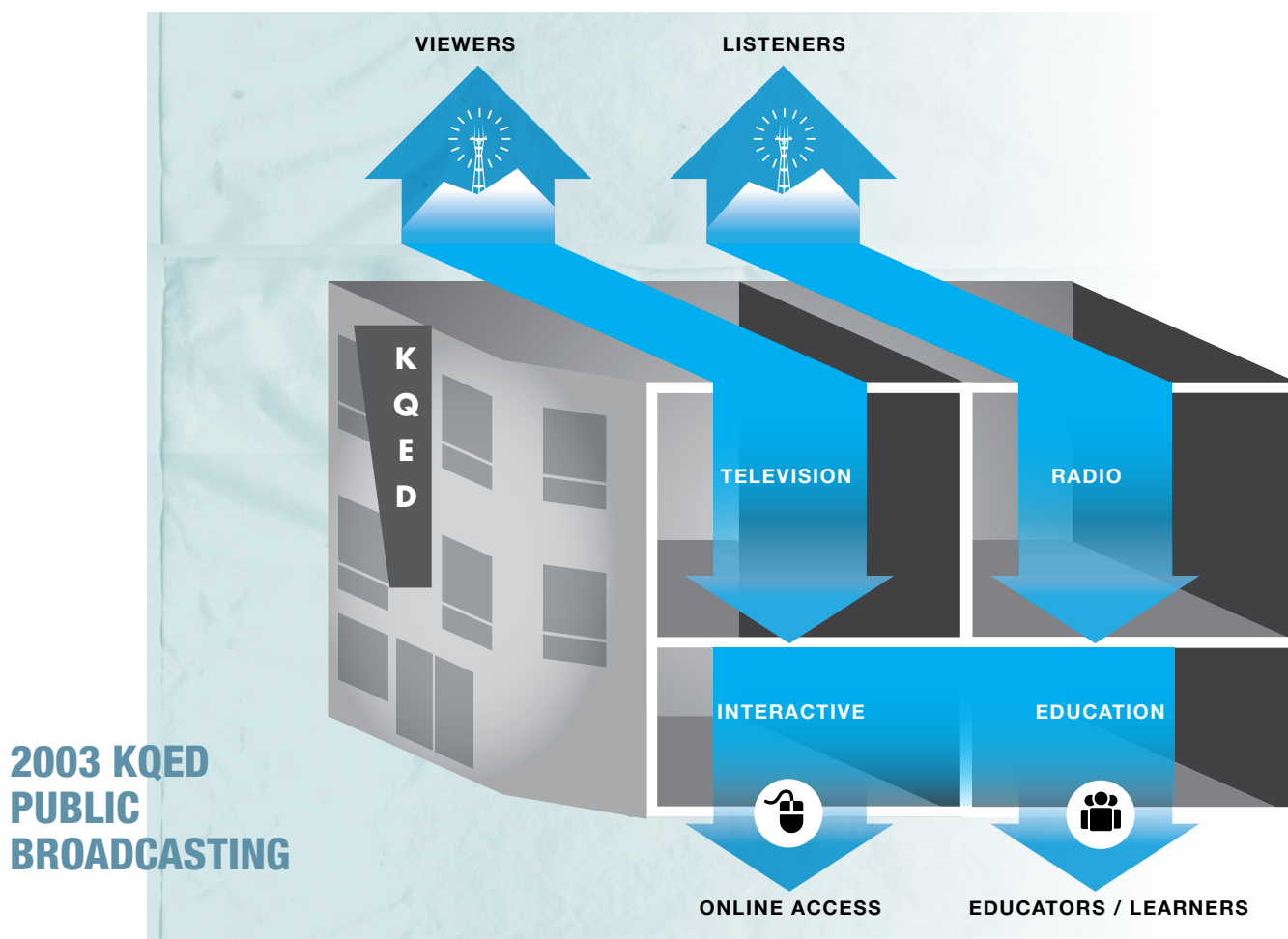
With its SEN Experiment, KQED could address this gap in coverage locally, raising interest in, knowledge of and engagement with scientific and environmental issues among Bay Area audiences. The content area for a new series in place, KQED leaders turned their attention to finding solutions for the threats that had pushed public broadcasting into survival mode.

DIGITAL TECHNOLOGIES

2. In 1998, the FCC required broadcast television stations to switch from analog to digital signals. This Digital Television Transition needed to be completed by 2003 for public stations, with all analog signal broadcasts ending by 2009. This change led some viewers (those without cable and/or with older television sets) to need a set-top conversion box. For the broadcasters, it required expensive technology upgrades.

The evolution of digital media technologies and the internet has brought about dramatic changes in media production, delivery and consumption. In the midst of this challenging environment, public broadcasters encountered yet another difficulty — the high cost of updating systems and technologies to comply with a government-mandated conversion to digital television (DTV) by 2003.² For most people, the DTV conversion occurred seamlessly, with the exception of those who had older television sets and needed to get a set-top conversion box. For broadcasters, the transition was much more complicated. Furthermore, it was just one small piece of the true digital transition taking place, a shift that would require media producers and distributors to rethink their organizational models and even their identities.

To appreciate the shift that was about to take place one needs to understand how traditional broadcast media organizations operate. This figure depicts how KQED was organized at the time the SEN Experiment began.



Under the KQED umbrella, each medium, or “platform” in industry lingo, operated separately. These platforms (television, radio, interactive and education) lived in different parts of the building and had separate staffs, managers, work processes, budgets and timelines. Radio stories tended to cover more immediate issues and have a short production schedule, while TV stories could take months to produce and enjoyed much larger budgets. The interactive and education staff served as support for these

“CONTENT FIRST, PLATFORM SECOND.”

broadcast media, typically receiving radio and TV stories after they had been completed and aired. The interactive staff then posted materials to the station’s website, and education folks created materials to help teachers use the content with students.

This “siloed” organizational structure made sense in an analog world. Videotape, audiotape, teacher’s guide documents and the like were physical products with separate distribution and storage requirements. One cannot splice together an audiotape with a videotape, for instance. In a digital world, however, video content, audio recordings, photographs and even documents are made up of ones and zeros. And the Internet accepts it all. As more and more media content became accessible online, audiences gained more control over their media consumption and shifted away from watching and listening via traditional television and radio broadcasts. Digital media were blurring the lines between platforms, and a traditional broadcast orientation made less and less sense. Thus, KQED’s leadership thought it was time to explore a new approach to content production and delivery.

CONTENT-BASED PRODUCTION

John Boland spearheaded conversations at KQED on how to respond to and capitalize on digital media technologies. In 2002, Boland became the first chief content officer in all of public broadcasting, first at KQED (2002–2006) and then at PBS (2006–2010). Boland created this role, distinct from traditional head of platform positions, to realize his vision of a media organization centered on the principle of “content first, platform second.” This principle represented a fundamental shift in thinking about how to create media — from platform-centric, that is, “What TV show will we produce?” to content-centric, that is, “How will we create and deliver stories about science?” This new approach was the first step on a journey of taking KQED “from public broadcaster to public digital media organization,” Boland’s ultimate vision.



– John Boland, CEO

Boland was quick to point out that KQED was not the only station experimenting with different types of production and the affordances of digital technologies. Still, Mark Erstling, then senior vice president for media strategy and system development at the Corporation for Public Broadcasting (CPB), pointed out that QUEST represented an early foray into digital multimedia production and further identified the project as an example of “the [public broadcasting] system asking big questions about identity,” a debate that continues today. According to Erstling, each station is figuring out whether it is a TV or radio producer and distributor or a multiplatform content provider. The SEN Experiment put KQED at the forefront of this debate, and Boland outlined a number of key factors that made the station an ideal location for an early, content-based production experiment.

First, according to Boland, KQED is one of the few stations in the public media system that houses both radio and television under one roof. More often these platforms are housed at separate locations and are even completely separate entities, such as WNET public television and WNYC public radio in New York. Moreover, KQED has a strong presence in the Bay Area, serving 50 percent of the population per week, which allowed it to experiment with one project while maintaining its existing audience base. In addition to these organizational advantages, Boland explained that the Bay Area’s culture offered KQED “solid community support financially and for experimentation” and proximity to Silicon Valley, where “all of this disruption [in the digital media landscape] is emanating from.” In short, it did not make sense for KQED *not* to experiment with a new content-based production model.

Building the Model

Motivated by a desire to explore cross-platform production and address the need for high-quality science content, the SEN Experiment began with the seeds of what would become the QUEST model. QUEST's content-based production model then evolved through iterative phases of design and implementation. The Omaha meeting of the QUEST Regional Hubs Collaborative, which sought to replicate the full model at the hub stations, represented the fourth phase of QUEST's evolution. Phases one and two, the SEN Experiment, included consecutive six-month periods of research and development and pilot production (2004–2005) funded by the Moore Foundation. According to the project's leaders, this R&D phase gave them the luxury of time to develop a team, form key relationships and refine the concept of the project. This time for learning and the subsequent pilot set up the project to obtain funding through NSF's Informal Science Education (ISE) program (now Advancing Informal STEM³ Learning or AISL) for phase three implementation. With three years of NSF and other funding (2006–2009), the project then ramped up to a full-time team producing a multimedia science series, and KQED QUEST was born.

3.
Science, Technology,
Engineering and Math

The project's leaders and team members faced multiple hurdles as they explored what it meant to make and distribute media in the digital world. During the development and implementation of this new model, the team grappled with core questions of identity and culture, organizational structure, technical processes and collaborative working relationships. Fortunately, the organization had the right people and supports in place to take advantage of the opportunities and address the challenges that arose.

ATMOSPHERE FOR EXPERIMENTATION

Experimental projects like QUEST create new opportunities, but they also present uncertainty, risk and the possibility of failure. For such projects to succeed, John Boland explained that “people in authority have to give permission and encouragement,” offering staff the space and confidence to try new things and the faith that their efforts will be rewarded. Boland attributes much of the success of QUEST to the fact that they had the “right leader in place” with KQED's Science Executive in Charge Sue Ellen McCann. According to Boland, McCann “transformed herself” into the kind of manager the project needed, exploring new territory and learning new skills. In fact, among the funding organizations, KQED leadership, hub station leaders and project staff members, there is a clear consensus that McCann has been QUEST's MVP. Words used to describe her included “visionary,” “pioneer,” “insightful,” “patient” and “calm.”

When the opportunity to lead a new KQED science project emerged in 2003, McCann, at the time executive producer, television, volunteered for the role. Though she worked in television at KQED, McCann had experience producing in multiple media, as well as a lifelong interest in science. McCann spearheaded the SEN Experiment and QUEST project from its inception through the Regional Hubs Collaborative Pilot. Asked about her leadership style McCann remarked, “I tried to be as inclusive as I could be because I didn't know everything, didn't have the best ideas and didn't expect to.”

**“PEOPLE IN
AUTHORITY
HAVE
TO GIVE
PERMISSION
AND
ENCOURAGEMENT.”**

One person she relied on heavily in her new role was KQED Vice President of Digital Media and Education Tim Olson. When the SEN Experiment began, Olson was the director of interactive, and he and McCann agreed they made a great team. McCann explained Olson's contributions to the project as follows:

“He was in charge of Web strategy and was sitting on top of the most disruptive piece of the media landscape. He was way ahead of the curve in terms of understanding the disruption, understanding its opportunities and providing strategy and tactics for moving forward.”

McCann said she was “soaking up what he was saying” and trying to figure out how to execute it. Similarly, Olson saw himself as a provocateur, pushing the team to consider new ways of using technology to create different types of media content. McCann, he said, “had the expansiveness to take his vision and translate it into a framework of core science areas to cover,” as well as the editorial experience to be able to do so.

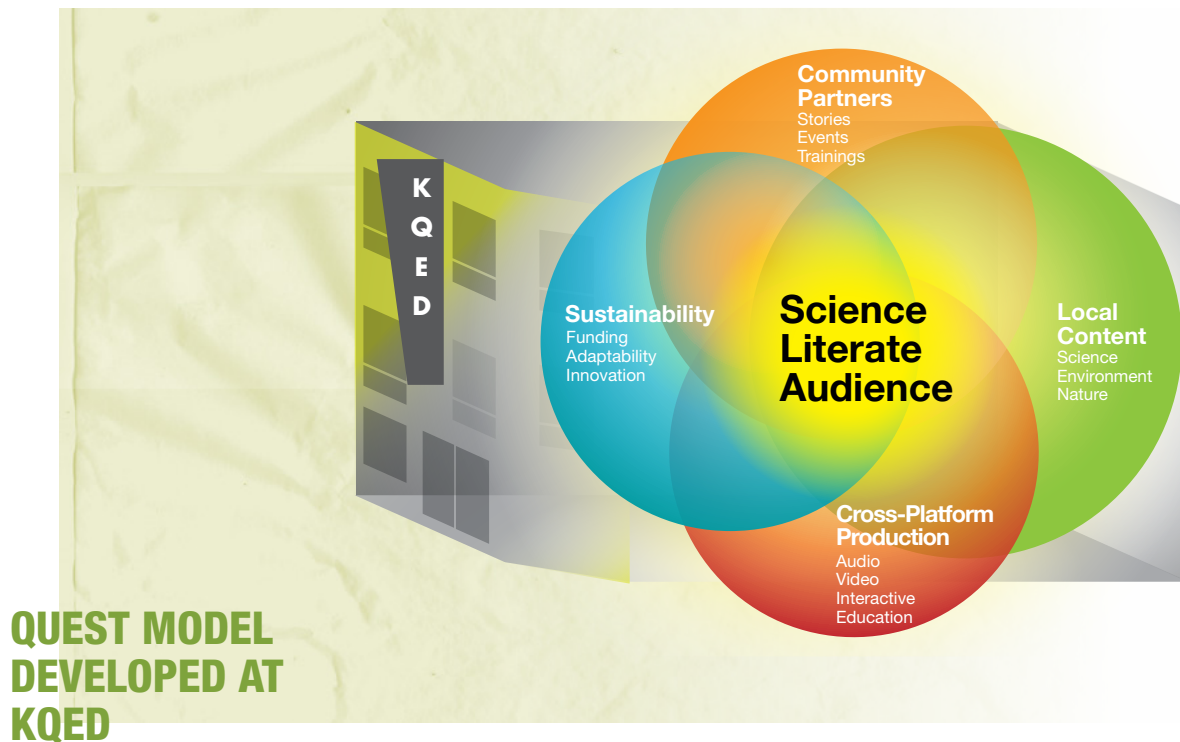
Clearly, Olson and McCann worked well together and brought complementary knowledge and skills to the project. McCann also readily praises her staff and how they responded to the challenges presented by the project. In fact, she added the staff as a fifth element to John Boland's assessment of the four qualities that uniquely positioned KQED to take on the SEN Experiment. She credited the QUEST staffers with being an “intellectually curious group of people” eager to grow beyond their core skills. One QUEST staff member, KQED Senior Interactive Producer Craig Rosa, added that the team, made up of half existing KQED folks and half folks from outside public media, offered “a mix of experience and new ideas that really felt exciting.” As Boland pointed out, though, the staff needed the right kind of leadership from McCann to feel comfortable applying that curiosity and taking risks.

McCann created an atmosphere that fostered experimentation and innovation by putting her faith in her staff, commenting, “If you hire people to do a job, let them do it.” When staff members faced challenges, she expected them to come to her for help so that they could find solutions together. QUEST staff members confirmed this approach, explaining McCann gave them ownership of the project, which allowed them to try new things and shape what the project would become. McCann also encouraged the staff to trust one another. She set up the expectation that even though they would face difficulties and uncertainty and step on one another's toes, they would work through issues together. Most importantly, “she stuck with the process,” according to Rosa, and even if something did not work out, “the boom was never lowered” in terms of repercussions for the staff.

Beyond removing fears of failure and rewarding innovation, McCann fostered an environment of learning and adaptation for the project team, an effort strongly supported by ongoing evaluation. As a condition to funding, first the Moore Foundation and then NSF required an external evaluation; thus, McCann reached out to Rockman, et al, a research and evaluation firm located in San Francisco. The Rockman team brought to the project deep experience in informal science learning and media project evaluation. Over the past ten years, research questions and foci have evolved with the project, providing insights and allowing for reflexive growth as the QUEST model evolved.

THE QUEST MODEL

Fully realized, the QUEST model depicted here includes four interconnected elements: local content, cross-platform production, community partners and sustainability, all of which revolve around the heart of the model, a science literate audience.



Interestingly, the audience did not appear in earlier versions of the QUEST model even though the central goal of the project had always been to foster science literacy among audiences. When one discusses the QUEST project with staff members and leaders alike, the emphasis tends to be on the practical working elements of the model. They consider core questions, such as how to work across platforms, how to build mutually beneficial relationships with partners, how to adapt to changing digital media technologies, and how to continue to find financial support for the project. Reflection revealed that the answer to each of these questions was rooted in one element: a shared vision that allowed the other pieces of the model to come together. Those working on, partnering with and funding the project shared a fundamental interest in offering the public relevant, engaging and educational content about science. This shared vision offered the QUEST team a unifying focus that afforded new ways of thinking and decision making and helped them address challenges.

CROSS-PLATFORM COLLABORATION

When the SEN Experiment began, no one knew exactly what a cross-platform team would look like or how it would function. To explore the possibilities of collaborative, multiple media production, the group would need to

- create team cohesion and shared work practices;
- fold the education staff's input and mission into the production process; and
- adapt to emerging, Web-based production and distribution opportunities and shifting audience-use patterns.

Team cohesion. The first step toward implementing the QUEST model involved bringing the team together physically, culturally and organizationally. During the SEN Experiment phases, McCann essentially borrowed staff from the four production platforms to work on the project. To foster collaboration, staff members gathered for weekly meetings in which they would pitch and discuss story ideas, decide what role each platform would play and address technical issues, but the team members returned to their home departments between meetings. With the launch of QUEST in phase three, a new space was created for the QUEST team to sit together. In this shared space, team members could easily solicit input from one another on a daily basis, as well as talk and socialize informally. To support these new working arrangements, the team created an online database, or wiki, where they could document the progress of each story across platforms. Team members could submit and comment on one another's story ideas and track the status of each piece from production to distribution. These factors contributed to an inclusive workflow in which each team member knew what was happening across the project even as they worked on individual elements.

Of course, it took some time for these new work processes and relationships to develop, and as predicted by McCann, folks did step on one another's toes. With the motto "presume trust," McCann helped staff work through these issues and stay focused on the project's central mission of serving the needs of the audience. According to Olson, this focus on a shared goal over individual platform was key to the team's successful cross-platform collaboration:

"The principle of not being bound to one tool was so important, centered around the need of the audience to be informed. It's a very different undertaking to deliver on that goal than 'we will make radio for 100 years.' It frees the mind to think in different ways."

While the team was uniting around this shared vision, it took some time for KQED's leadership to figure out the best way to reflect this new approach in the organizational structure, that is, the lines of management and authority. An initial attempt to chart the reporting structure for the project displayed a solid or primary line of reporting from QUEST staff members to their original platform head and a dotted or secondary line to McCann, even though she was the head of the project. This arrangement would have tied QUEST staffers most directly to their home platforms rather than to the cross-platform project. Backed by Joanne Carder, vice president, human resources and labor relations, McCann pushed to reverse the reporting structure. She successfully argued that the only way a cross-platform project could be successful was if one executive producer led all of the platforms. The revised chart included a solid or primary line of reporting from QUEST staff to McCann and a dotted line back to each platform head. With this arrangement, each platform head retained a stake in what was being produced and would air on their medium, but the team could work cohesively under McCann's leadership.

Had the initial organizational structure remained in place, the project most likely would have failed. Each department head employed a different leadership style and maintained a varying level of support for the project. Particularly in the crucial early days of the experiment, the platform heads met the project with a mixture of excitement and tension. While the education and interactive groups were excited to be brought into production more directly, evaluation interviews revealed lukewarm support from television heads and tension and even resistance from the radio leadership. This tension stemmed, in part, from a perception that the project would primarily serve television, the platform that already tended to absorb the majority of the organization's resources.

Moreover, the radio team produced more hard news and journalistic pieces than the other platforms, and some folks were concerned that the project would adhere to less stringent entertainment editorial standards.

However, even if all of the platform heads had offered full support for the project, team members may have found themselves wrestling with split loyalties and responsibilities, a circumstance that could have pulled apart the team cohesion and identity necessary for the project's success. Olson indicated that the combination of the team sitting together and working under the same management structure was “key to the cultural transformation” necessary for this new way of producing media because “all were tasked with the same assignment and were clear on the central vision.”

The role of education. Merging the production of radio, TV and web made sense in a digital media environment; however, the inclusion of education as an equally integrated fourth platform was not such an obvious choice. At the start of the project KQED's education department, known then as EdNet, functioned separately from the production arms. Though education staffers used content from TV and radio, most of what was being produced did not fit with their mission at that time of providing educational materials primarily to learners in formal education settings. Producers, in turn, were creating informative content but not actively thinking about learning goals or outcomes, focusing instead on quality storytelling and engagement. With QUEST, KQED put forth what McCann called the “radical idea” that these separate motivations could be merged into one process. Of course, once one shifts emphasis from making media or filling air time to enhancing the science literacy of one's audiences, whether students or the general public, this radical notion seems like the most logical option.

Despite unifying under this shared vision, the transition to including and working directly with education staff from story conception through distribution took time. In its early days, the project maintained a primary focus on TV and radio content, with education and interactive in supporting roles. According to former Education Manager Jessica Neely, it took about a year for education to become an integrated part of the QUEST team. The media producers were not used to considering specific educational goals, and they did not want to wind up producing “instructional” content for classrooms.

The turning point came during a meeting in which QUEST producers each pitched two to three story ideas for possible production. Neely informed the group that she could not develop classroom materials from most of their story ideas because they did not fit California Science Curriculum Standards. This comment surprised producers and opened the door for new understanding and communication across the platforms. After this meeting, the team organized QUEST pieces into content areas, such as astronomy and chemistry, based on formal science education standards. Working together, producers realized that they could easily tweak many of their stories to better serve formal educators' and students' needs. Simultaneously, education staff gained an appreciation for producers' needs and the value of quality storytelling in conveying scientific information to all types of learners.

Exploring interactive media. According to NSF Program Officer Valentine Kass, one of the hallmarks of the QUEST project is that it has always worked to deliver engaging science content through the forms and distribution channels audiences were using. “Science can be complicated to explain and difficult to portray in a way that comes across in an interesting and engaging way,” explained Kass. Over the ten years of the project, delivering informative, engaging science content to audiences

has meant exploring not only new channels of distribution but also new forms of storytelling afforded by online and digital media. While the team produced a weekly half-hour television program and radio stories, they simultaneously experimented with alternative media forms, such as using Google Maps to create nature hikes with points of interest and photographs, called Explorations; creating short-form Web-only videos or webisodes; and distributing content through YouTube, iTunesU, and a network of third-party websites that chose to embed and share QUEST content.

Beyond simply trying out new media forms, the QUEST team remained focused on fostering science literacy. Explanatory journalism is one strategy they have employed to enhance audiences' understanding of scientific developments and issues. Rather than simply reporting the basic who, what, when, where, why and how questions that are present in breaking stories and traditional news stories, explanatory journalism goes deeper, providing thoughtful background into history, science, culture, politics and other facets of stories to give the public a more comprehensive understanding of important topics. For instance, the television episode "Reawakening Extinct Species" provided detailed information about the scientific process, the legal ramifications, the ethical debates and the history of extinction as it described new genetic efforts to bring species back that had gone extinct decades or even centuries ago.

Thus, the QUEST team has honed their science storytelling skills and adapted them to a variety of media. As Olson described it:

"The tech was and is always changing. QUEST has continued to evolve with iPads, e-books, new web-based deliverables, etc., but as long as they've kept an eye on the goal of raising science literacy, of serving the audience, they could adapt that same mission to new technologies and tools."

Along with this exploration of new media and storytelling forms, the QUEST team used Web metrics and evaluation data to gain a deeper understanding of who their online audiences were and how they were similar to or different from their more traditional broadcast audiences. They discovered a number of key differences that have influenced how they produce and distribute media.

Web metrics (measurement of online user activity, such as the number of people viewing a webpage or watching a video) demonstrated that online audiences were not watching or listening to QUEST content in conjunction with a broadcast air date. Rather, individual stories have seen a rise in viewers/listeners months or even years after the original broadcast. Evaluation data further revealed that online audiences discovered content based on personal interest, a connection to a recent news story, convenience or by following a link from another webpage. Additionally, many of QUEST's online users were science teachers seeking content to enhance a specific lesson.

Online audiences sought out QUEST content to fulfill specific needs and interests. Moreover, these users tended to be younger than and distinct from the broadcast audience. Armed with a deeper understanding of online audiences and their needs, McCann and Olson successfully argued for a pivotal shift in the distribution of QUEST content. They posted video content online before that content aired in the weekly television program. Some cable networks, like HBO, do offer a few episodes online prior

to their air-date; however, fearing their audiences would be cannibalized by the web, television networks generally consider this practice anathema, even today. With funding from foundations and individuals, the QUEST team had more freedom to experiment with timing because they were not dependent on selling advertising (or underwriting, in the case of PBS) based on broadcast audience rating numbers. In fact, online video viewership numbers have surpassed television audiences for QUEST, but the team views this development positively as they reach and serve more audiences.

COMMUNITY PARTNERS

The next element of the QUEST model, the Community Partners, became part of the project early in its development. At the Moore Foundation’s suggestion, KQED kicked off the project’s R&D phase by assembling representatives from 13 Bay Area science organizations. This gathering became part of a series of roundtable discussions KQED convened with local science print journalists, radio reporters and science educators between June and October of 2004. Through the roundtables the SEN Experiment team gathered feedback from the community on the needs and interest for a digital media science project.

QUEST COMMUNITY PARTNERS

2004

2015

While the information-gathering roundtables did not continue after the R&D phase, the science community partners became a permanent and integral piece of the project. In fact, as early as 2004, California Academy of Sciences Director of Public Programs Carol Tang identified the community partners as the project's fifth platform along with education, interactive, radio and TV. Today, the partner relationships are well established and KQED convenes quarterly partner meetings with 19 area organizations. However, the group faced some hurdles on the road to mutually beneficial partnerships built on strong relationships.

QUEST Reporter Amy Standen recalls how a story meeting with the Gladstone Institutes led to her audio piece entitled “In Search of the Bacterial Garden of Eden.”

We'd been interested in doing a story on Bay Area microbiome research for some time but hadn't yet found an angle when we went to meet with Gladstone for a story meeting in the spring of 2013. That's where I met Katie Pollard, a microbiologist who told an amazing story about how a colleague's field research in rural South Africa had led to surprising questions and insights about the evolution of the human microbiome and the legacy of antibiotics. I started working on the story the next day, interviewing Pollard and one of her colleagues, as well as other well-known microbiome researchers at UCSF and Stanford. The story aired on May third, one of my favorites of the year.

<http://science.kqed.org/quest/audio/in-search-of-the-bacterial-garden-of-eden/>

It was a novel approach for KQED to involve outside partners in one of their projects to the level that they were attempting with QUEST, and it was a new experience for the partner organizations as well. Each organization, including KQED, had partnered with others for the duration of a specific project or grant. In contrast to typical arrangements, these community partners gathered with no specific timeframe, no defined roles for each party and, perhaps most uniquely, no financial relationships. Though all of the parties agreed that the nascent science media project would be valuable to the community, this new and uncertain territory required skillful navigation and open communication. In particular, conversations with partners conducted by the project evaluators revealed two recurring preconceptions that could have derailed the science community's participation in the project.

As one of the largest and most accessed media organizations in the region, KQED enjoys a strong presence and can amass a great deal of influence among Bay Area audiences. For the community partners, science organizations, museums, research institutes, parks and the like, this project offered the potential for unmatched outreach to the public. Many were eager to have their institutions, researchers and events profiled on the air. At the same time, interest in KQED's reach was tempered by an underlying belief that when it comes to communicating science to the public the media get it wrong. Too often these professionals witnessed complex research and findings misrepresented or reduced to sound bites. Furthermore, some partners felt that KQED was stepping into *their* arena; that is, creating educational materials about science. Craig Rosa, who was a community partner representative for The Tech Museum of Innovation before he became a QUEST staffer, characterized the partners' perspective as, “You're doing something that doesn't sound like what you should be doing as a media company.” Unaware of these views, the KQED team initially stepped on a few toes when dealing with the partners. To move forward, they had to address these perceptions and build trust among the partners.

“SOME PARTNERS FELT THAT KQED WAS STEPPING INTO THEIR ARENA.”

QUEST Producer Sheraz Sadiq recalls how a story meeting with the Monterey Bay Aquarium Research Institute (MBARI) led to his video piece entitled “Exploring Corals of the Deep.”

This particular story idea originated from MBARI during a site visit in March 2011. It was selected for production by the QUEST editorial team for several reasons, including its “wow” factor: Most viewers would be surprised to learn that stunning corals lived thousands of feet below the ocean’s surface off the Monterey coast. We were given access to hours of high-definition footage of the deep-sea corals captured by MBARI. In addition, we were able to talk beforehand with one of the scientists who led the oceanic survey of the corals to gauge how effective he would be at communicating the findings from the expedition, as well as the impact of ocean acidification on the health of corals. Before the story was selected for production, a QUEST TV producer also contacted another Bay Area marine biologist who agreed to be interviewed on camera to explain the difference between deep-sea corals and their tropical counterparts, providing another key piece of information that could complement and broaden the initial story pitch from MBARI.

<http://science.kqed.org/quest/video/exploring-corals-of-the-deep/>

To begin with, KQED staff realized that they needed to set out clear editorial guidelines for working with partners that would allow the team to maintain journalistic integrity. While partner organizations may serve as subjects or sources for stories, KQED would not guarantee partners air time, and producers would cover any potentially newsworthy issues or controversies that arose with respect to partner organizations. To help the partners understand this aspect of their relationship, QUEST Managing Editor Paul Rogers put together a memo explaining the parameters and responsibilities of a news organization. The implementation of one set of news-based editorial guidelines served the whole team and allowed radio stories to air as news segments.

Rogers also helped with the second community partners’ concern. A seasoned environmental journalist for the *San Jose Mercury News* with a long track record of educating the public about scientific issues, Rogers lent the QUEST team credibility. Rogers first became involved with the project when he was asked to help organize the science journalist roundtable in the R&D phase. Once on the team he served as an invaluable resource for the producers on science issues, sources and storytelling.

It was not enough, however, for the QUEST team to address these preconceptions. They needed to foster ongoing relationships and provide value to the community partners to truly make them the project’s fifth platform. To this end the team adopted three key practices. Realizing that building and maintaining solid relationships took significant time and energy, they hired a full-time staff member to facilitate partner engagement. The QUEST team also instituted regular visits to each partner organization during which producers could learn about the interesting, innovative and important research and activities. Through these meetings QUEST producers could discover possible stories and gain access to experts while also educating partners on the requirements for creating a good science media story. According to Rosa, this manner of working together has led to a win/win for QUEST and the partners:

“We can do a better job of our mission of covering science and environment stories in our region. They know how to work with us to find the best stories. A level of trust has been established, and the project has changed their understanding of what science journalism and media are.”

Major funding was provided by:

National Science Foundation
Gordon and Betty
Moore Foundation
Corporation for Public
Broadcasting
The Amgen Foundation
Richard and Rhoda
Goldman Foundation

Additional support was provided by:

S.D Bechtel Jr. Foundation
Dirk and Charlene
Kabcenell Foundation
William K. Bowes, Jr Foundation
David B. Gold Foundation
Ann S. Bowers –
The Robert Noyce Trust
Vadasz Family Foundation
Wyncote Foundation
Markkula Foundation
TomKat Foundation
George and Jeanette Stuart
Charitable Trust
Morris Stulsaft Foundation
Sherwood Foundation
George Frederick Jewett Fund

Finally, through open dialogue, QUEST staff discovered that many partners were interested in developing their own digital media skills and that some were already doing so in creative and interesting ways. Thus, the group began to use quarterly community partner meetings as a way to share best practices in digital media, with presentations by both QUEST staff and partners who were innovating in the online science media space. Covering topics such as social media outreach, creating place-based media with Google Maps, producing Web slide shows and conducting interviews for audio and video, these media trainings greatly influenced the success and longevity of the community partner relationships. Still, working together in this manner did not come naturally to the KQED team. Olson explained, “It seems obvious in retrospect that we would help our science organization partners learn to use digital and social media, but it was a big pivot. We produce media. Do we *enable* media?” To answer this question in the affirmative, the QUEST team once again turned to the project’s central mission. From the mindset of a media producer, sharing these skills meant creating competition. From the mindset of meeting the science literacy needs of the community, however, this sharing of skills meant more high-quality content reaching more audience members.

SUSTAINABILITY

Funding for projects is always essential, but once again KQED took a number of specific steps toward sustaining the QUEST project, including having a development staff member as part of the integrated QUEST team. At the same time, working with funders influenced the project by fostering ongoing learning and an emphasis on the science literacy needs of the audience.

When asked what she had learned or gained from working with the project’s funders, McCann said the knowledge gained during the Moore Foundation-funded R&D and pilot phases and evaluation helped her shape the first project proposal to NSF. Then, working with NSF deepened her appreciation for and understanding of science learning, as she said:

“While I had been introduced to metrics and evaluation prior to writing the NSF proposal, I didn’t understand KQED was part of a larger community called ‘informal science education.’ That understanding made me realize there was a whole body of knowledge from the ISE field to draw from. It brought evaluation into perspective, and [QUEST] became more of an audience-driven project than it had been in our previous thinking. It made explicit what had been implicit; it sharpened the work we were doing.”

McCann went on to explain that public broadcasters were not used to thinking of themselves as informal educators. Though they understood their work and mission to be broadly educational and informative, they did not have an identity as part of this professional field. NSF brought first to McCann and then to her team a context in which to think and talk about the learning goals and outcomes of the media they created. This context further focused the team on the heart of the model: fostering science literacy among audience members.

LOCAL CONTENT

The final component of the QUEST model, local science content, seems an obvious, conflict-free choice. As a regional public media station, KQED's mission is to serve Bay Area audiences, and QUEST started with a local funder in the Moore Foundation and locally based community science partners. Yet over the course of the project the decision to remain a regional science program has faced pressure from several directions, both internal and external.

National funding source. With a mission to enhance science learning throughout the entire country, NSF rarely funds local science media projects. Fortunately, the QUEST project found a champion in Valentine Kass, who supported the project's bid for funding based on her experience with another local/regional science project. Also called Quest, this prior project featured content produced by public media stations in Maine, Vermont and New Hampshire. Critically, evaluation data showed that this program drew in a larger regional audience than PBS's premier science program NOVA during some weeks. From this data, Kass realized the potential for a regional science project and the importance of place when connecting learners to science content.

KQED QUEST's evaluation data has shown the value of this connection time and again. In particular, educators praise the ability to highlight the local connection to scientific concepts and issues using QUEST content. Still, this factor alone would not be enough for NSF to fund a regional project. According to Kass, QUEST's cross-platform model and robust relationships with community partners made the project unique and innovative, garnering the interest of NSF.

Internal pressures. Despite NSF's willingness to fund a local science media project, as early as 2007 folks within KQED were discussing the potential to take the project to a national audience. QUEST content had enjoyed some national distribution through partnerships with PBS and National Public Radio, and the project had gained two national partners in Encyclopedia of Life and COPUS, a network that promotes the public's understanding of science. McCann felt pressured to figure out how to take QUEST national, but the aim seemed to be to turn it into a national television program rather than a multimedia series. McCann did not believe that was the right move for the project and instead felt it made more sense export the QUEST model outside the building. According to one staff member, McCann had witnessed the transformative effect of the model within KQED and felt it could serve as a powerful change agent at other stations as well.

Reaching out. McCann's instincts proved accurate when, facing the same pressures that drove KQED to experiment with cross-platform production, other stations in the system took notice of what was happening with QUEST. Leaders at two other public media organizations, Malcolm Brett, director of broadcast and media innovations of University of Wisconsin Extension (Wisconsin Public Television and Radio), and David Feingold, assistant general manager, content, of NET Nebraska, expressed interest in the model, sowing the seeds for what was to become the QUEST Hubs Collaborative Pilot.

**“QUEST’S
CROSS-
PLATFORM
MODEL AND
ROBUST
RELATIONSHIPS
WITH
COMMUNITY
PARTNERS
MADE THE
PROJECT
UNIQUE AND
INNOVATIVE,
GARNERING
THE INTEREST
OF NSF.”**

Hubs Collaborative

“ISLANDS OF PRODUCTION.”

Nearing the conclusion of the meeting in Omaha, the idea for the QUEST Hubs Collaborative Pilot developed through a series of phone conferences. During these virtual meetings, leaders from ten public media stations discussed their interest in the QUEST model and the possibility of working together. After months of discussion, the group submitted a proposal to NSF to fund a multistation initiative with two goals: replicate the QUEST model at each member station and pilot a content-sharing collaborative. After implementing the QUEST model, each station would produce science media, which could then be distributed to all members of the network.

With this new phase of QUEST, McCann and her team were doing something quite rare. After years of risk, experimentation and hard work, they were giving away the skills and knowledge they had gained. Moreover, McCann planned to assist the hubs in adapting that learning to their own stations. Doing so would challenge her leadership skills, as well as those of the six hub team leaders. Internally, each hub station would now face similar challenges to those KQED had confronted in the transition to cross-platform production, while simultaneously building collaboration among the member stations. Beyond expanding the reach of the QUEST model, the Hubs Collaborative would continue to develop innovative modes of science media creation and sharing, a risk for participating stations and funders alike.

ATMOSPHERE FOR COLLABORATION

Collaboration is never easy. When separate organizations come together to form a network or collaborative alliance, they must strike a balance between serving each one’s individual mission and working toward an agreed-upon, collective purpose.⁴ To do so, participants need to build relationships and trust and learn to work together effectively, fairly and efficiently. Moreover, the level or depth of collaboration may vary, depending on the needs of the group, and progresses through stages. One theory describes three such stages of increasingly tighter relationships among organizations. In cooperative networks, organizations share information and support one another based on mutual interests but remain wholly separate entities. The hubs would need to reach this stage to complete their first goal of replicating the model. At the midpoint, networks reach the coordination stage in which they share tasks and distribute activities among member organizations as they work toward common goals. Should they reach the stage of full collaboration, organizations must integrate work processes and give up some autonomy to achieve a single shared vision.⁵ Though lacking the scholarly language of networking and collaboration theory, it is this last stage the hub team leaders envisioned reaching for their project — no easy task for entities accustomed to independent operation.

PBS collaborations. Composed of a diverse collection of local television and radio stations, the public media system historically has not fostered integrated collaborations. Most of the time, public media stations function as what NSF Program Officer Valentine Kass called “islands of production” that create unique content for their local audiences and purchase system-wide series, such as *NOVA* or *Downton Abbey*. While multiple stations may create content for a program like *NOVA* with national reach, that show is produced and managed entirely by one station, WGBH Boston. WGBH then hires other stations to produce specific episodes in early-stage, cooperative arrangements.

4. P. Anklam, *Net work: A practical guide to creating and sustaining networks at work and in the world* (Burlington, MA: Elsevier, 2007). R. Gajda, “Utilizing collaboration theory to evaluate strategic alliances,” *American Journal of Evaluation* 25, no. 1 (Spring 2004): 65-77.21eeeeeee

5. N.L. Peterson, (1991). “Interagency collaboration under Part H: The key to comprehensive, multidisciplinary, coordinated infant/toddler intervention services,” *Journal of Early Intervention* 15, no. 1 (1991): pp 89-105.

6.
P. Anklam, Net work.

Over the years a variety of more intensive, multistation collaborations have been attempted, often with mixed and even negative results. The effort to build and maintain a network, what one scholar terms “net work,”⁶ requires skill and knowledge not typically needed by media producers and managers. Across the system, loosely formed relationships have been “easy to unravel” in the face of challenges, commented former CPB Senior Vice President Mark Erstling. He went on to suggest that these experiences have created barriers to collaborations in the system, generating the sense that they cannot work or are not worth the effort.

New directions. Why then did the hub station leaders decide to attempt a difficult and risky collaborative project? Together with the imperative to change internal production processes, the shift to digital and decreasing budgets have created both a need and opportunity for collaboration. Stations often talk about the need to “feed the beast,” that is, to keep the television schedule full of as much new content as possible. The Internet takes this notion to an entirely new level with its many channels and audiences seeking fresh, interesting content on demand. If the participating stations learned to work together, each one could multiply the amount of content available to its audiences and, in this case, become a resource for science media. Ultimately, the hubs would be developing a new model of collective media production and distribution among local stations acting as equal partners. As NSF Program Officer Sandy Welch commented, “[the Hubs Collaborative] has one foot in the ISE⁷ world and one in public media’s future.”

7.
Informal Science Education

“[THE HUBS COLLABORATIVE] HAS ONE FOOT IN THE ISE WORLD AND ONE IN PUBLIC MEDIA’S FUTURE.”

For this reason, both the hub stations and funders felt the project was worth the risk. Even so, NSF and CPB approached the Collaborative with some caution. NSF provided enough funding to support the spread of the model and development of the hubs network for two years, but the group would need to raise additional funds for content production in the second year. To that end, the hubs engaged in a lengthy negotiation process with CPB. In addition to the innovative nature of the project, CPB’s own organizational structure contributed to the back-and-forth between it and the hub leaders.

Much like the stations in the system, CPB organized its departments and funding by media platform and was not set up to manage a cross-platform grant. The project also fell within the realm of station collaborations, further complicating the choice of where the grant would live within CPB. According to Vice President for Education Michael Fragale, CPB’s management eventually created a joint education and media platforms grant, overseen by the Media Strategies and Station Services department. This grant structure allowed CPB not only to support and learn from this collaboration of local stations but also to practice collaboration across internal departments, noted Fragale.

8.
Details of this process can be found in M. Reisman and S. Rockman, KQED Partnership Hub Survey (San Francisco: Rockman et al., 2009).

While CPB staff wanted to support station collaboration, they urged KQED to establish minimum requirements for participation. McCann had been inclined to open membership to any stations willing to make the commitment. Based on past experience, the CPB folks felt that some stations simply would not have the resources required to replicate the QUEST model and produce multimedia science content, which could jeopardize the entire project’s success. With that in mind, McCann asked Rockman to prepare an analysis of each interested station’s relative strengths and weaknesses, including existing resources, the presence (or lack) of the four platforms, local science communities and interest in the project. Evaluators assessed and ranked eight potential hub stations on their likely ability to achieve the project’s goals. No station was barred from participating based on this assessment⁸; however, the two stations ranked lowest chose to drop out of the project early on due to lack of resources and internal support. In the end, seven stations⁹, including KQED, moved forward as members of the pilot collaborative.

9.
KQED San Francisco, WVIZ/WCPN/Ideastream Cleveland, KCTS Seattle, UNC TV North Carolina, NET Nebraska, WHYY Philadelphia, and WPT/WPR/ECB Wisconsin (WEDU Tampa and WTTW Chicago dropped out).

**“THEY WOULD
WRESTLE WITH
QUESTIONS
OF IDENTITY,
CULTURE AND
PURPOSE,
AS WELL AS
EVERYDAY
ISSUES OF
TECHNOLOGY.”**

REPLICATING THE MODEL

On January 24, 2010, leadership teams from the seven hub stations gathered in San Francisco, California, for their first face-to-face meeting. In contrast to the group’s tense gathering in Omaha nearly two years later, the teams arrived in San Francisco filled with anticipation, aware they were breaking new ground for their stations and for public media. During the two-day meeting participants delved into the QUEST model, heard from both KQED staff members and Rockman evaluators about lessons learned during its development, and drafted plans to replicate the model at their own stations. Over the next eight months each hub would create its own cross-platform QUEST team. Along the way they would wrestle with questions of identity, culture and purpose, as well as everyday issues of technology, work processes and sustainability, much as KQED had done before them.

These issues did not come as a surprise to the hub leaders, but the group had made one critical assumption that proved false. The hub teams were attempting to recreate in less than one year what KQED had evolved over five. Unlike KQED, of course, the hubs were not launching an experiment in the unknown. With a successful model from which to work and the knowledge gleaned from KQED’s experiences, it seemed logical that the hubs’ task could be accomplished more quickly. This assumption held true to a degree. The teams discovered, however, that it still took significant time and effort to overcome resistance and change culture, develop skills and foster team cohesion. Moreover, each hub presented its team and leadership with a unique set of opportunities upon which to build and challenges to overcome.

The hubs’ challenges. Formed from the merger of separate public television (WVIZ) and radio (WCPN) stations, Cleveland’s content producers had been working toward cross-platform production for a decade before the project began. According to Senior Director of Content Mark Smukler, QUEST allowed them to continue that process and, more importantly, begin to fold in separate education units. Emerging from years of budget cuts and a scarcity mindset, the stations in Seattle and North Carolina approached QUEST enthusiastically and used it to energize their stations and staff. Still, pared down staffs, especially in education, and no radio outlets hampered their participation. The Philadelphia station achieved buy-in from robust radio and education platforms but struggled to get TV on board. As statewide, dual-license (radio and television) stations, both Wisconsin and Nebraska brought many resources to the project, which turned out to be part blessing, part curse. Made up of four separate entities housed in different locations, a disparate Wisconsin team worked to overcome logistical and organizational challenges. The only hub to secure separate, local funding to support QUEST, Nebraska’s team struggled to meet goals of the Collaborative while also fulfilling their local funders’ objectives.

Leadership. Leaders of the hub teams found themselves facing many of the same issues McCann and her team had confronted in QUEST’s early development. They had the advantage of her support and expressed great appreciation for her leadership. At the same time, circumstances were different, and her leadership approach contributed to frustrations. McCann approached the Hubs Collaborative with her trademark inclusiveness and openness. As she had done with her own QUEST team from the beginning, McCann looked to hub team leaders to take ownership of QUEST at each of their stations. Each hub leader appreciated this autonomy and flexibility to shape the project based on their station’s mission, goals and resources. Even so, they looked to McCann for direction as they grappled with what QUEST would look like and how to justify it to their station heads. McCann’s response? “You tell me.”

As she had with her own staff, McCann had handed the project over to them and trusted them to figure it out. In this case, though, one key ingredient was missing that speaks to the differences between intra- and inter-organization collaboration. McCann was able to give her KQED team the confidence that she would support their experiments, even their failures. With the hubs, she could not offer this shield, the confidence that “the boom would not be lowered” in the words of KQED QUEST staffer Rosa. The hub leaders had to answer to their own senior managers, who were willing to let them try but wanted assurances that the project would benefit their stations. An undercurrent emerged in which some of the hubs’ management seemed concerned that the Collaborative would boost KQED’s reach and reputation instead of — and perhaps even at the expense of — their own.

Preparing for Year 2. Concerns that no additional funding would come through for production in Year 2, not to mention to sustain the project beyond the pilot, fed into fears and uncertainty about the project and eroded full commitment to QUEST at the hub stations. In addition to managing internal cultural shifts, then, the hub leaders found themselves in a tug of war between meeting the goals of the network and keeping their independent station priorities in the foreground, an experience typical of newly formed collaborations.

Even amidst this complex set of issues, each hub team made significant progress toward replicating the QUEST model in Year 1.¹⁰ Still, by the target start date for the content-sharing production phase, none of the stations had a dedicated, cross-platform team prepared to independently produce high-quality multimedia science content. Nor did they have production funding in place. Consequently, the group had to revise their plans for the second half of the project, the content-sharing collaborative pilot.

CONTENT-SHARING COLLABORATIVE PILOT

Heading into this pilot project, members of the QUEST Hubs Collaborative had envisioned an integrated set of QUEST teams that would collectively produce and share multimedia science content, enriching and expanding each station’s offerings. In scholarly terms, they planned to reach *collaboration*, the third and most integrated stage of networking. As Year 1 came to an end it became clear that the stations would not achieve this vision during the pilot phase. By the time negotiations with CPB resulted in funding near the end of 2010, the hubs had lost several months of planned Year 2 production time. Moreover, CPB insisted that KQED take charge of that production. Since KQED had the only complete team and set of processes in place, this requirement made sense, but it led to a series of ramifications that added pressure to already strained relationships and threatened to pull the Collaborative apart.

From cooperation to coordination. This shift to one lead station meant that the hubs would progress from the cooperative work needed in Year 1 to coordinating their work processes and efforts for joint production. Collaboration theory tells us that it made sense for the teams to progress to this middle stage of network integration, but hub leaders and team members alike were disappointed not to achieve their vision of a seven-station team of co-leaders working in full collaboration with one another.

10. See the following evaluation report for more detailed discussions of the Hubs Collaborative: E. Bandy, S. Mushlin, S. Panahandeh and S. Rockman, QUEST Regional Hubs Collaborative Final Evaluation Report (San Francisco: Rockman et al., 2012) Available at http://informal.science.org/reports/0000/0551/QUEST_Hubs_Collaborative_REA_Final_Eval_Report.pdf

From a practical perspective, the decision to place KQED in charge of production shaped both the content and processes for all of the hubs. In planning for the Collaborative, the hub leaders had to work out the details of a shared QUEST. Would it be branded “QUEST” in each location? What would the editorial voice and style of the pieces be? Each station had its own style or signature, and some wanted to use QUEST pieces in existing local programs. Still, the group decided that they would collectively get the most use out of the pieces if they adopted a uniform look, sound and feel. The next step would have been for the hubs to design and agree upon that coherent style. However, when KQED took charge of production, San Francisco’s existing QUEST style and voice, quite literally with the use of its series narrator Andrea Kissick, became the de facto for the entire project.

Behind the scenes, hub team members who were still learning how to work cross-platform now had to master KQED QUEST’s complex work processes while meeting extremely high national production standards. Distance and unfamiliarity further complicated production. Producers at all of the hubs suddenly found themselves reporting to the San Francisco QUEST producers, a circumstance that led to the feeling that the hubs’ plan for egalitarian production and content distribution had become traditional “work for hire.” Rather than contributing to a new model, these team members felt that they had taken on extra work and stress simply to produce content for another station. In turn, KQED’s team struggled to manage and coordinate a diverse web of new colleagues, most of whom they had never met and were only assigned to the project part-time.

Mistrust, misunderstanding and misinformation. One of difficulties inherent in public media collaborations has been the physical distance that separates stations, leading former CPB executive Mark Erstling to comment that “geographic dispersion feeds paranoia.” This phenomenon played out at this point in the Hubs Collaborative, but it had emerged in smaller scale during the SEN experiment as well. When asked what led to their success with the QUEST model, one of the first elements KQED team members mention is having the opportunity to sit together and work in the same space. Even working on different floors of the same building offered enough physical distance to inhibit trust and communication.

“PRESUME TRUST.”

In addition to bringing her QUEST team together in one workspace, McCann had employed a second means to combat the forces that work against team cohesion. Invoking her motto “presume trust,” she asked her team to assume that their colleagues were acting in good faith. McCann tried to inspire the hub staff in a similar manner, but she could only reach so far. With hub teams spread from coast to coast, physical distance and underdeveloped relationships bred distrust, confusion and resentment between the KQED staff and the hub team members, many of whom were not informed why KQED had stepped into the leadership role for the content-sharing collaborative in the first place.

Under these difficult circumstances, the QUEST teams still had to fulfill the promises made to NSF and CPB. They created a wide array of high-quality audio, video, educational and interactive science pieces, as well as a new, joint website to host them. But all those involved were aware that they could not continue to work in such a manner. The hub leaders would have to decide both whether and how to move forward with the project once the pilot ended. It is a testament to all parties, and perhaps the allure of this model and innovation, that they did not simply walk away. Given the critical importance of communication and relationships to the success of networked projects, as well as the challenges posed by physical distance, it is not surprising that three face-to-face meetings would determine the fate of the Hubs Collaborative.

FACE-TO-FACE MEETINGS

The series of face-to-face meetings held in 2011 allowed the QUEST hubs to make great strides in relationship development and trust building; however, simply gathering in the same place would not have been sufficient to resolve the network's issues. Envision for a moment the stereotypical annual corporate retreat often portrayed in the media, one filled with self-congratulatory corporate executives and team-building staff members attempting to cheer (or sing) away employees' concerns and frustrations. As Fragale noted:

“This project showed that for collaborations to work, leaders need to know how to deal with challenges and not be afraid to deal with them.”

All three of the Hubs Collaborative meetings led to progress because organizers provided real opportunities to air concerns and work toward constructive solutions.

QUEST Teams Symposium. The second QUEST Hubs Symposium took place in June 2011 at KQED. In contrast to the project kick-off meeting held for managers from each hub, this gathering brought together QUEST team members from all stations and platforms for the first time. Several members of KQED's team had traveled to each hub for intensive site visits in the project's planning phase. The visits included training on cross-platform production and the QUEST model and gave those staff members present the opportunity to form relationships that would strengthen over the course of the project. Up to this point, however, most of the hub team members had had the chance to meet their counterparts from the other stations in person.

During the teams symposium, attendees shared their innovative and creative cross-platform collaborations, which provided a valuable and rare opportunity for inter-station professional development and showcased the value of cross-platform production. CPB's Fragale recalled one presentation as a powerful example of the “heart and value of QUEST.” In it, the Wisconsin team presented a creative and well-received audio slideshow and corresponding science curriculum to the group. Beyond the value of the content, they described how two team members, a radio reporter and an education staffer, had set out to produce a traditional radio report. Working together for the first time, they had instead collaborated to produce an innovative piece neither would have considered before QUEST.

This gathering took place at the height of Year 2's contentious and difficult production cycle. Thus, although the team members appreciated this opportunity to learn from one another, nerves were frayed and resentment and mistrust were high. Anticipating this circumstance, McCann and her team had consulted with the hub leaders and composed the symposium agenda with an eye toward progress. For much of day one, activities gave participants the chance to develop relationships, share food and highlight each team's accomplishments, all of which generated positive feelings and goodwill. Near the end of that day, participants were given the opportunity to air their concerns and frustrations. Rockman staff moderated discussions of small groups of participants, each of which deliberately included team members from different stations and platforms plus a couple of KQED staff members.

The conversations these small groups held gave team members the chance to hear what colleagues from other stations and different platforms had experienced. Consequently, they learned that some issues were embedded in the project, often as a result of compromises caused by circumstances, and others stemmed from the

unique challenges facing their stations. For their part, the KQED staff heard firsthand the difficulties faced by the teams they had been managing from afar, as well as when their processes had contributed to those difficulties. In turn, hub team members began to understand the challenge of attempting to manage such a diverse and complex set of producers. When it turned out that many of the team members had no understanding of why KQED had taken over the content-sharing production phase, McCann was able to clear up concerns that KQED had wanted to take over and control the project.

Tensions smoothed, day one ended with time for attendees to socialize and develop friendships. Day two then focused on possible solutions to some of the issues discussed and training designed to enhance everyone's cross-platform and collaboration skills. This well-planned process allowed trust and collegial relationships to build among the hub teams. Through this process, team members began to establish a sense of network identity as members of QUEST and not only of their home stations.

Omaha hub leaders' meeting. Armed with a deeper understanding of the challenges facing their individual stations and the Collaborative as a whole, the hub leaders arrived in Omaha. The project was coming to the end of the pilot funding cycle, and the group would need to decide both whether to apply for another grant and what a second phase of the Hubs Collaborative might look like. Given all of the issues they had confronted in the pilot, it took will and courage for this group to sit down and consider a future together rather than walk away at the end of the pilot. Indeed, the issues had proven too costly for one of the hubs, WHYY. Their leaders chose not to attend the meeting in person, although they did sit in virtually via phone conference.

The hub leaders had established strong working relationships through their monthly phone conferences and in-person meetings. Thus, when they gathered around the conference table they dove right into the issues and frustrations each had experienced. McCann opened the conversation by addressing the primary issue, that is, who would control the next phase of the Collaborative. She made it clear that she and KQED did not need to be in charge and, in fact, did not want to be. This perspective aligned with McCann's and all of the hub leaders' original vision for the project, but it is not typical. McCann's successor and KQED QUEST Executive Producer Jason Black explained:

“While everybody clings to things they invest in, Sue Ellen had the vision to know how important [the QUEST model] was to this station and realized how powerful that was. She wanted to give it away, not control it.”

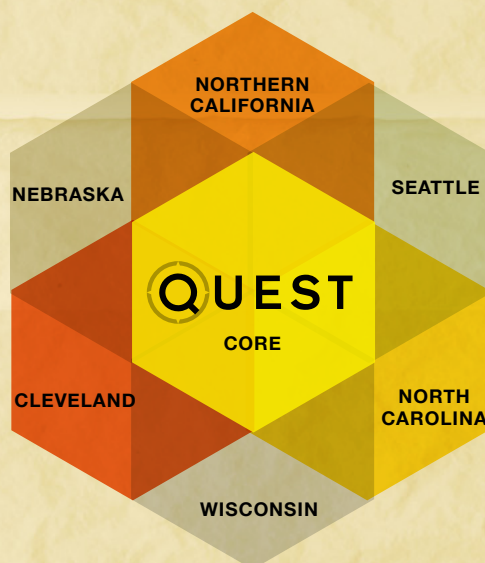
Black went on to call her a “change maker of extraordinary vision.”

Both Black and Erstling reflected that McCann's willingness to completely give over control of what QUEST was and could become to the hub leaders was a turning point for the Collaborative. In conjunction with McCann's opening comments, the group's foresight in hiring a professional facilitator to lead the meeting put everyone on equal footing, paving the way for them to plan a new organizational structure. Their goal was to create a collective, egalitarian operational system. Aided by their facilitator, the group mapped out two models, each with a center and spokes. To represent the pilot, they placed KQED QUEST at the center and the six other hubs as nodes on the spokes. For their future vision, they placed “QUEST Core” at the center and all seven hubs along the spokes. This Core represented a proposed new leadership structure for the Collaborative, which would be managed by a Central Office team that would report to all of the hub leaders.

PILOT VISION FOR QUEST COLLABORATIVE



NEW VISION FOR QUEST COLLABORATIVE



Additional changes to the structure of the project were put forth to address other issues that had emerged during the pilot. First, each hub would hire a Coordinating Producer to provide steady oversight and streamline workflows within each team. These individuals would hold weekly virtual meetings and report to a Lead Coordinating Producer housed within the Central Office. To ensure coherent content standards and voice, a Managing Editor would oversee all QUEST productions from the Central Office. With the outline of workable plan for the future, the hub leaders left Omaha energized and hopeful that they would be able to truly develop a new model for multistation content production and distribution. The next step would be to flesh out the ideas they had sketched and translate them into another NSF AISL grant proposal by the end of the year.

Seattle hub leaders' meeting. To finalize the grant proposal plans, KCTS Seattle hosted the third and final gathering of the Hubs Collaborative Pilot in December 2011. The Omaha meeting had represented a change in direction and renewed optimism for the hubs (with the exception of WHYY, which chose to end their participation with the pilot at this point). Even so, the group had more work to do if they were to design a project that would allow them to reach full collaboration.

The proposed organizational structure for the Collaborative allowed for shared control of the project in two tiers — concentrated within the Central Office and distributed through hub leaders and Coordinating Producers. Yet each hub leader was still primarily thinking of what the project could do for his or her home station, and this mindset would not be enough to hold the Collaborative together. Erstling pointed out that in successful public media collaborations, the leaders have been able to “see the greater good beyond their parochial interests.” Networking scholarship agrees that all members of a collaboration must give up some autonomy in an effort to achieve a shared vision. While all of the hubs had entered the pilot with a desire to help shape the future of public media, their central goal had been to gain cross-platform skills and experience and to secure more science content for their individual stations. To move forward, they would need to coalesce around a goal they all felt was worthwhile and that was in line with each station’s core mission.

Ultimately, the answer lay in the same place it had for KQED several years earlier: the science literacy needs of their audiences. During the Seattle meeting the hub leaders agreed that they wanted to create a set of regional science centers, develop expertise in reporting science and connect to their local science communities. Though science literacy had been a part of the project from the earliest conversations, it had never become the central goal. Driven to propel their stations out of survival mode and into the digital media future, the hub leaders had emphasized building cross-platform production skills and expanding the digital content they offered. With much of that work behind them, they were able to shift their focus to this broader shared vision. A new goal in mind, the Hubs Collaborative would continue...that is, if they could secure another round of funding.

THE HUBS EPILOGUE: COLLABORATION

11. For more details of the hubs' continued progress (and struggles), see the QUEST Summative Evaluation Final Report: http://informal.science.org/evaluation/ic-000-000-010-637/QUEST_Summative_Evaluation_Final_Report

The six stations seeking to move forward as the Hubs Collaborative did receive another two years of funding from NSF to continue their work, ending in the fall of 2014. According to Black, the network reached full collaboration with their new goal and organizational structure during this latest phase of QUEST. Working toward their collective vision, the stations grew their science reporting capacity within their communities.¹¹ As a result, the QUEST regional science centers have reached millions of viewers and listeners, both over the air and online, and collectively have established 80 community science partners in six regions of the country.

Reflecting on the entire project, Kass noted that:

“the QUEST model has been an interesting, exciting and profound process of taking a vision and seeing how it evolves and bringing more people into the fold.”

Bolstered by their progress and achievements, the hub leaders sought to continue that effort with another grant proposal, submitted in January 2014. This proposed phase of the Collaborative would have added four new stations, meant to cover the Northeast, Gulf and Desert regions of the country. Like Kass before her, NSF Program Officer Sandra Welch championed the project and hoped her fellow AISL officers would continue to providing funding for the Hubs Collaborative. Unfortunately, that did not happen. Feedback on the proposal indicated that program officers felt the next phase relied too heavily on continuing the work that had been done with the QUEST model, and NSF AISL grants must generate new knowledge and innovative procedures. At one point, Kass predicted that the effects of QUEST and the Hubs Collaborative would extend far beyond the project itself. While the project has officially come to an end, that prediction is proving to be true.

Back to the Future

The QUEST project began as an experiment aimed at charting a new future for KQED and, more broadly, for the public media system and informal science education. It has delivered on all fronts and continues to do so. QUEST has opened the system and CPB to new ways of thinking about production, educational media and collaboration. All of the former hubs have grown skills and relationships in digital media and science journalism and have more experience with fundraising. Using these skills they continue to develop informal science media offerings and to spread cross-platform production to other content areas in their stations. Moreover, lessons learned with the Hubs Collaborative have been implemented in other CPB-funded collaborations, such as the Local Journalism Centers and the American Graduate project.



QUEST has been a journey into the heart of public broadcasting, encapsulating both tradition and innovation. The journey has demonstrated that public media's future lies in its past and its relevance comes from providing learning opportunities through media and serving the needs of local communities. This goal has always been fundamental to public media's mission, but it lost some emphasis in the face of basic survival. With renewed focus and energy, what continues to evolve is how producers leverage digital media technologies to meet and engage with their communities. Nowhere is this shift more evident than within KQED.

METAMORPHOSIS BY THE BAY

The challenges facing public media are not confined to science content and audiences, and neither is the knowledge gained by KQED with QUEST. In 2010, John Boland returned to KQED as president and CEO, precisely because the station's unique environment would allow him to continue the type of experimentation in content-based media production that had sparked QUEST in the first place. Under his leadership QUEST now serves as an organization-wide catalyst for disruption and innovation. As Tim Olson quipped, "We were the rebels, and now we're the center."

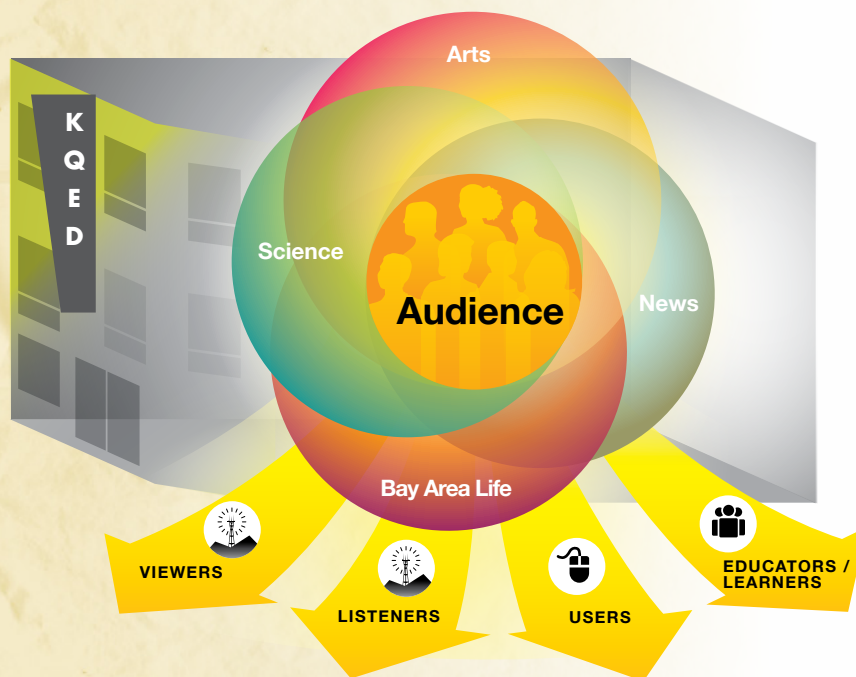
**“WE WERE
THE REBELS,
AND NOW
WE’RE THE
CENTER.”**

– Tim Olson, *Vice President,
Interactive + Digital*

When the QUEST experiment began, Boland had been thinking in terms of putting content before platform. But that change in strategy has turned out to be only part of the story. What has emerged from QUEST has been a more profound transition to audience first, then content, then platform.

In a 2010 presentation entitled "Metamorphosis by the Bay," Boland presented a vision for what KQED Digital Public Media would look like in the year 2020. This new vision places audience at the center of what KQED does and further continues the transformation that started with the QUEST model, eliminating the silos of TV, Radio, Interactive and Education in favor of "vertically integrated teams organized around subject matter." In 2014, KQED reorganized around four new content-based "platforms": Science, Arts, News and Bay Area Life. Each department now produces cross-platform content for all distribution channels, and staff members continue to experiment with the best ways to produce digital content and serve audiences.

2020 KQED DIGITAL PUBLIC MEDIA



“A MODEL, NOT THE MODEL.”

KQED Science. As part of this transition, what had been QUEST has been folded into an expanded KQED Science department that encompasses other projects and, particularly for radio broadcast, emphasizes science journalism and news reporting. In fact, among all news media platforms and outlets, KQED now employs the largest science and environment reporting unit in California, followed closely by the *Los Angeles Times*. Beyond any vision they held back in 2004, KQED Science also includes education staff members who not only contribute to science stories but also produce original, innovative content for classroom use, such as a series of multimedia e-books on earthquakes, energy and multiple science and engineering topics. Similarly, the interactive team has grown from hosting audio and video content to producing original content for the Web, such as the award-winning online series *Deep Look*. Along the way, the KQED Science team members have expanded their professional identities from producers working in a specific platform to cross-platform producers who are part of a professional community of informal science educators. Furthermore, the team and KQED have become members of the Bay Area science community through their ongoing partner relationships and quarterly meetings.

Beyond the QUEST model. KQED Senior Vice President and Chief Content Officer Michael Isip pointed out that while QUEST offered a template and a starting point, it is “A model, not The model.” Across the other content areas, new models are emerging based on the varying needs and interests of their audiences and in response to the ongoing changes in the digital media landscape. As was the case with the hubs, the opportunities QUEST has provided extend beyond the details of any model. Rather, Isip further commented, “What is most compelling to me is the role QUEST has had in changing our culture and organization, and we are still in the midst, or really just starting, our transformation.”

Beyond content. As KQED navigates the transformation from a legacy public broadcaster with 60 years of tradition, the organization is making broad changes throughout not only content production and distribution but also back-end operations. Leaders and staff are rethinking outdated systems and technologies across the finance, human resources and legal departments, recognizing that in today's ever-changing media environment KQED needs to become more nimble and responsive internally so that it can meet the needs of audiences externally.

For KQED, the search for relevance and the future of public media has led to a vision of an audience-centered and responsive, digital public media organization designed for the 21st century. To bring this vision to life, the organization is engaging in broad, ongoing disruption and innovation. The strategies KQED employs to achieve its vision and the opportunities and challenges that result from them will yield new models and ideas and new lessons for KQED and other public media organizations. To document and share these ideas and lessons, QUEST researchers Elizabeth Bandy (the author of this article) and Scott Burg will continue to document and analyze KQED's transformation and will be sharing their findings through a *Medium* blog, "Disrupting Public Media."¹² There, interested readers can follow along KQED's journey.

12.
<https://medium.com/disrupting-public-media>

“THE SEARCH FOR RELEVANCE AND THE FUTURE OF PUBLIC MEDIA HAS LED TO A VISION OF AN AUDIENCE-CENTERED AND RESPONSIVE, DIGITAL PUBLIC MEDIA ORGANIZATION DESIGNED FOR THE 21ST CENTURY.”

ACKNOWLEDGEMENTS

This article would not have been possible without the work and contributions of multiple individuals who shared their insights, reflections and data with me over the course of the QUEST evaluations and the research for this piece. First, I'd like to thank NSF Program Office Valentine Kass who championed the QUEST project and decided its journey was worth chronicling and sharing. I owe a debt to my colleagues at Rockman, et al, who conducted portions of the QUEST evaluations referenced in this article, especially Scott Burg and Saul Rockman, who also lent his thoughtful commentary to this piece. Neither those evaluations nor this article would have been possible if the QUEST team leaders and members at KQED and the other hub stations had not been willing to share both their triumphs and struggles along the way. I deeply value the trust they placed in me and hope the process has proven valuable to them.

Last, but most assuredly not least, I want to express my gratitude to Sue Ellen McCann. As KQED QUEST's leader, she embraced evaluation, allowing us to work as partners, and she has truly been my partner on this article. Sue Ellen gave me access to ten years' worth of documents, emails and notes on QUEST; put me in touch with key staff members at KQED, CPB and NSF; and spent hours with me reflecting on the project's journey. She edited several drafts of the article and even allowed me to include a tiny portion of the praise for her expressed by every person I interviewed. May she continue to be a leader in the quest for public media's future for a long time to come.

Elizabeth Bandy is a media & learning researcher, writer, educator & evaluator. Learn more at bandyconsulting.com and follow @lizbandy on Twitter.