



Experiments in Media Innovation: A Look at the 2009 Knight News Challenge Winners

August 2012

Knight News Challenge: A Media Innovation Contest

The Knight News Challenge is a five-year media innovation contest designed to reward new ideas for gathering, sharing and using local news and information. Knight Foundation launched the contest in September 2006, at a time when the news industry was in great flux, as part of an effort to encourage greater experimentation in the field of journalism and media. Over the first five years of the challenge Knight Foundation has funded 79 innovation projects with \$26.5 million.



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Table of Contents

Introduction and Summary	1
Assessing the 2009 Knight News Challenge Winners	5
Current status of innovations	5
Spread and scale of the innovations	6
Adoption of open source code developed by the innovations	7
Funding attracted by each innovation beyond Knight's support	9
Lessons Learned	10
A need you can feel	10
The wisdom that nurtures innovation	10
Code level practices	11
Cultivating evangelists	12
Individual Winner Profiles	
DocumentCloud	13
Data Visualization	16
Ushahidi	19
Mobile Media Toolkit	23
CMS Upload Utility	26
Councilpedia	28
MediaBugs	31
City Circles	34
Virtual Street Corners	36
Strengthening Media Innovation: Lessons for Knight Foundation	38

Introduction and Summary

Journalism, media, communications and information technology intersect most meaningfully today around a dazzling array of innovations – new ideas put to the test by businesses, nonprofit organizations and different communities of people worldwide. By design, they are highly disruptive. They challenge the traditional exchange and flow of information in society. These innovations come fast and furious, destroying old business models and creating new ones that are often too young to conclusively judge. This innovation dynamic leaves many citizens groping for the information they need to conduct their lives and participate meaningfully in their societies. Yet it also is enabling others to gather information, contribute and express themselves more effectively.

The confusion and the promise of innovation are arguably most pronounced at the community level. There, information itself, access to it and capacity to use it vary wildly from place to place. It is at the local level that Knight Foundation chose to invest in media experimentation through its Knight News Challenge grants. The results from the nine grantees in 2009 are a fascinating mix of media innovation at the crest of change in communities in the U.S. and internationally.

In Bell, California, for example, a new digital tool contributed to the arrest and eventual conviction of a clutch of corrupt local government officials who misappropriated millions of dollars in public funds. There, an online database of primary source documents called [DocumentCloud](#), seeded by a 2009 Knight News Challenge grant, enabled reporters from the Los Angeles Times to more easily do their work. Using DocumentCloud's collaborative web platform, they collected and examined multiple boxes of documents electronically to show the corruption and then share the documents in an easy-to-search format with other journalists. The opening up of primary source documents sparked an investigative reporting feeding frenzy.

On the other side of the globe, in the rural state of Chhattisgarh, India, another innovation, the [Mobile Media Toolkit](#) – seeded with another Knight News Challenge grant – is helping shift news gathering practices. In a state where poor fixed telecommunications infrastructures are failing most citizens, a voice-based news portal, CGNet Swara, trained dozens of individuals to use the toolkit (which includes a series of guides on creating media with mobile technology) so they could create and share audio

Table 1: 2009 Knight News Challenge

Applications	2,323
Winners	9
Total Amount	\$1.9 million

and visual content using their cell phones to dispatch information to citizens and provide organizing help to rural activists on the ground.

Both innovations resulted in new and useful ways to gather and disseminate newsworthy information – innovations tailored to very different news environments but nonetheless scalable for use in different places and situations. In the case of the Mobile Media Toolkit, the Arab news organization Al Jazeera is now using the toolkit to link its journalists on the ground with citizen journalists and its growing mobile communications audience. And DocumentCloud was used by the Chicago Tribune's reporters to better cover the corruption trial of former Illinois Governor Rod Blagojevich, resulting in the release of several source documents that became a repository for new investigative efforts. When a news organization links from its stories to the actual documents, news consumers gain context and the news organization gains credibility.

These were just two of the nine innovations that received funding from the Knight News Challenge in 2009. The other seven innovations range from new ways to visualize data to platforms for crowdsourcing and mapping information in communities:

- **Data Visualization**, a set of tools to help journalists enhance their reporting and convey complex information in new and telling ways
- **Councilpedia**, a wiki to aggregate and synthesize campaign funds given to New York City council members
- **Ushahidi**'s crowdsource platform for information collection, visualization and mapping using the web, SMS, Twitter and email

- **Virtual Street Corners** video conferencing project to put video cameras in storefronts to connect two starkly different Boston neighborhoods, Brookline and Roxbury
- **CityCircles**, a hyperlocal website in Phoenix that provides residents and local businesses along a light-rail line with the means to share news and information
- **CMS Upload Utility**, a tool to help smaller news outlets upload their print stories to the web
- **MediaBugs**, a service to help readers report and correct errors they see in news coverage

Predictably, not all of these funded innovations were successful in reaching their initial goals and achieving significant adoption. After all, the Knight News Challenge is intentionally designed to encourage experimentation with new ideas for gathering, sharing and using local news and information. As with all experiments, sometimes they succeed, other times fail, and still other times morph into something else that may then succeed or fail. The innovations funded are emblematic of the expectations of the program.

Table 2: 2009 Knight News Challenge Winners

Project	Grantee	Innovation	Grant
DocumentCloud	ProPublica and The New York Times	An online database and tool for reporters to annotate, organize and publish primary source documents on the web	\$719,500
MediaBugs	Scott Rosenberg	A service that allows users to publicly document errors they find in the news and submit those reports to news organization for correction	\$335,000
Councilpedia	Citizens Union Foundation of the City of New York, Gotham Gazette	A publicly available online wiki that aggregates and synthesizes campaign fundraising sources for New York City Council members	\$350,000
Data Visualization	The Jefferson Institute	A suite of user-friendly, open source, data visualization modules for journalists	\$243,600
Mobile Media Toolkit	MobileActive Corp.	A toolkit for journalists and news organizations on how to create, share, and secure mobile media using mobile technology	\$200,000
City Circles	Adam Klawonn	A site that connects residents with local businesses surrounding the light-rail line in Phoenix and provides news and information about communities along the rail	\$100,700
Ushahidi	Ushahidi, Inc.	A crowdsource platform for information collection, visualization and mapping using the web, SMS, Twitter and email	\$70,000
Virtual Street Corners	Boston Cyberarts, Inc.	A project to install screens and video conferencing cameras in storefronts to allow daily citizen newscasts and virtual discussions between two Boston neighborhoods	\$40,000
CMS Upload Utility	Joe Boydston	A web-based utility to help newsrooms upload content in batches	\$10,600

Table 3: Breakdown of Project Type Funded (2009 Winners)

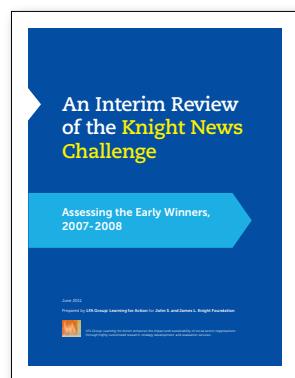
Existing Project Scale Up	Existing Entity New Project	Startup New Entity
Virtual Street Corners	Councilpedia	City Circles
Ushahidi	Data Visualization	CMS Upload Utility
	DocumentCloud	MediaBugs
	Mobile Media Toolkit	

The Knight News Challenge has three simple application rules. Projects must:

- **Distribute news in the public interest**
- **Be tested in one or more local communities**
- **Use open source software**

In 2009, Knight Foundation received over 2,300 applications to the Knight News Challenge. With the help of an outside panel of experts drawn from the intersection of technology, journalism and media, the foundation selected nine winners. These nine grantees and their innovations – whether successful or failing, yet to take off or retooling – offer a wealth of lessons learned.

This report examines the progress of the 2009 winners to date in achieving their specific project goals and in their broader contributions to changing the way news is gathered and disseminated. In many cases, individual projects are still evolving as they continue to influence their targeted field and communities. This report summarizes findings from the work of Arabella Advisors, an independent evaluation and strategy consulting firm.¹ The assessment contains insights that we hope funders, organizations, and individuals working on the future of news and information will find valuable.



This interim review is part of an ongoing multi-year assessment of the Knight News Challenge. It complements an earlier assessment of the 2007 and 2008 winners conducted in

June 2011, as well as an ongoing review of the progress made by 2010 and 2011 Knight News Challenge winners, the findings of which will be shared as results are gathered and analyzed.

Knight Foundation understands that funding innovation means embracing a level of risk that is arguably beyond the typical comfort level of most philanthropic organizations. This in turn requires respectful language for what worked well and what did not when assessing the grantees themselves. As the foundation notes, these were experiments; results were never guaranteed.

In this review, Arabella examined the projects in terms of the outcomes they have achieved in their targeted communities, their influence on the field of journalism and media, as well as their contribution to learning. This framework is offered in the spirit of advancing a positive and constructive dialogue regarding the efforts of those who undertake innovative projects such as those funded through the Knight News Challenge. Bearing that in mind, Arabella's review of the 2009 grantees found that:

- Three of the 2009 winning projects have achieved strong rates of adoption and continue to expand: DocumentCloud, Data Visualization, and Ushahidi.
- Three projects are still active, but have not gained significant traction and have faced declining engagement: Councilpedia, Media Bugs and CMS Upload Utility (although elements of this last project were reworked as part of a new suite of Wordpress tools which have been more widely adopted). One further project faltered in its efforts and has since closed: CityCircles.

¹ Arabella conducted research for this interim assessment. The methods for gathering data included: a review of project reports, project web sites and other available materials; interviews and surveys with Knight News Challenge winners; interviews with field experts that provided an outside perspective on the winners; and facilitated review and reflection with Knight Foundation staff.

- As a media innovation seeded by the Knight News Challenge, 2009 winner DocumentCloud stands out for its widespread adoption among newsrooms and reporters – an achievement that many projects have often struggled with. To date, the platform is used in over 600 organizations, with over 1,800 individual user accounts.
- Of the seven 2009 winners that created open source software as part of their project, three have attracted a large number of code contributors and users: DocumentCloud has been downloaded more than 250,000 times; Ushahidi's platform has been actively deployed over 20,000 times; and Data Visualization's suite of visualization tools are in the top 20 percent to 25 percent of all Drupal modules downloaded.

The lessons learned from the successes, challenges, and shifts in focus of the 2009 Knight News Challenge Winners are detailed in the main pages of this report. Some of the headlines include:

- **A need you can feel** – the importance of resolving a pressing problem for a well-defined audience
- **The wisdom that nurtures innovation** – the advantages of having an experienced institution to house and nurture your innovation
- **Code level practices** – the value of integrating open source code development into all aspects of a project's design, from conception to staffing

- **Cultivating evangelists** – the benefits of having net promoters support adoption and troubleshoot in resistant cultures

As part of this interim review of the Knight News Challenge, 2009 grantees also suggested areas where Knight Foundation itself could learn from some of the winners' successes and travails to improve its support of media innovation. We present their views on how they think the foundation has been helpful to their work and the ways in which it could strengthen its efforts. Among the insights:

- Grantees were mostly satisfied with the Knight News Challenge application and grant agreement processes, but believed the foundation could do more to connect them with additional partners, resources and other news challenge winners.
- In particular, grantees expressed a desire for more regular communication with the foundation to help stay up-to-date on project progress and troubleshoot as needed, and for greater non-financial support, especially marketing, networking, and communications resources to help advance their projects.

In the main pages of this report, we detail our findings to date on the nine Knight News Challenge Winners. We first briefly assess where the grantees stand today in terms of the adoption of their innovations, and then flesh out the lessons learned from all nine grantees in aggregate.

Assessing the 2009 Knight News Challenge Winners

In this section of the report we provide an aggregate overview of how the 2009 Knight News Challenge winners have progressed. Specifically, we look at:

- Current status of the innovations
- Spread and scale of the innovations
- Adoption of open source code developed by the innovations
- Funding attracted by each innovation beyond Knight's support

Current status of innovations

The profiles of each of the grantees are broken down into five categories:

- **Expanding** – projects are active, have achieved strong rates of adoption and are consistently growing in terms of their scale, reach, or product sophistication
- **Maintaining** – projects are active at a level consistent with the original scope of their News Challenge project
- **Active at a lower level** – projects are active, but the level of use has decreased and is limited compared with the original scope of their project (often as a result of implementation challenges)
- **Closed after faltering** – projects are no longer actively being worked on, and faltered as a result of design flaws or implementation and adoption challenges

- **Closed after completion** – projects focused on a discrete activity and time-bound events that were completed as planned

Of the nine 2009 Knight News Challenge grantees, three have reached their original goals, achieved strong rates of adoption and continue to expand: DocumentCloud launched by ProPublica and The New York Times and now housed within Investigative Reporters & Editors Inc., Ushahidi's crowdsource platform, and the Jefferson Institute's Data Visualization project.

Three projects are still active, but have had limited and declining rates of adoption: The Citizen Union Foundation of the City of New York and its Gotham Gazette's Councilpedia wiki, journalist Scott Rosenberg's MediaBugs, and Joe Bodyston's CMS Upload Utility (although elements of this last project evolved into a set of Wordpress tools that have been more widely used). Two projects are no longer active. One faltered and is no longer active – journalist Adam Klawonn's CityCircle's local website. The other project, Boston CyberArts Inc.'s Virtual Street Corners, completed its time-bound activities and closed.

Findings on each project's achieved outcomes and impacts are contained in the cluster reports that follow this section of the report. Here, we aggregate our findings.

Table 4: 2009 Knight News Challenge Projects by Current Status (in alphabetical order)

Expanding	Maintaining	Active – at a Lower Level	Closed – Faltered	Closed – Completed
Data Visualization	Mobile Media Toolkit	CMS Upload Utility	City Circles	Virtual Street Corners
DocumentCloud		Councilpedia		
Ushahidi		MediaBugs		

Spread and scale of the innovations

Innovation involves not simply the invention of a new process or tool but also the adoption of that process or tool by others. Such adoption can happen through spreading or scaling. Specifically:

- **Projects spread** when other organizations wanting the techniques or technology replicate parts of the project or product design
- **Projects scale** when the original organization expands the project to new geographies or to new audiences

Of the 2009 winners, three projects have spread and have done so by designing and releasing their open source code in an effective manner (see Table 5). All Knight News Challenge projects that develop software code are required to be open source, meaning that they must share the software they develop under a General Public License, and any documents, manuals, or instructions under Creative Commons licensing. Ushahidi's mapping tools and the open source code developed by DocumentCloud and the Data Visualization project have been widely taken up by others.

The three projects that have spread through others' use of their own open source code have also scaled to multiple audiences. DocumentCloud's platform is now in use by over 600 newsrooms. The Jefferson Institute's

Table 5: Summary of Adoption of 2009 KNC Winner Projects

Projects Spread by External Entities	Projects Scaled by Grantee
Data Visualization	Data Visualization
DocumentCloud	DocumentCloud
Ushahidi	Ushahidi
	Mobile Media Toolkit

Note: While MediaBugs also technically 'scaled' by opening up its error tracking software nationally, the scaling wasn't successful in attracting a significant new base of users and so it is not included in this list.

Data Visualization tools are regularly used by PBS and its affiliates, and Ushahidi has built partnerships with local organizations in Kenya and other countries to test and deploy its mapping tools. In addition, Mobile Active's Mobile Media Toolkit has also continued to further develop its tools and is being translated into Russian by Transitions Online – an organization working to strengthen journalism in Eastern Europe – to facilitate its distribution in Belarus and Russia.

Adoption of open source code developed by the innovations

The Knight News Challenge includes a requirement that winners use open source code and tools in the development of their projects and that any open source code they create be released publicly. Most projects release and host their code on the site github.com, while others use code.google.com, drupal.org, and wikimedia.org.

Developer engagement with the open source code bases of the 2009 News Challenge projects varies considerably. Seven of the 2009 projects modified or created open source code that was then released. Of these, the code developed by three projects has been widely used. Few if any developers have downloaded, used or modified the code of the remaining four projects.

DocumentCloud in particular has created some of the most downloaded open source software. The organization made a conscious decision at the start of the project that it would release its source code in smaller, usable modules along the way to full product completion, rather than as one set of code released at the end of the product development cycle. To date, in addition to the main DocumentCloud application, eight standalone components have been released to the public.² On Github, one of the main web-based hosting services for software development projects, DocumentCloud has the 8th and 30th most watched code repositories, and the 14th most forked (i.e. copied and modified independently) repository of the more than 3 million publicly available repositories.

Two components of DocumentCloud, Backbone.js and Underscore.js, have become significant component various projects across the web. Backbone.js is a toolkit for building JavaScript applications that helps web developers manage their user interfaces and organize application data without having to save it to a remote server. This module has been used by more than 40 companies and projects, including a number of popular web applications. Among them are Foursquare, LinkedIn, Groupon, Pandora, and Basecamp as well as nonprofit technology groups and other Knight News Challenge winners such as TileMill (an open source mapping application).³ Underscore.js, a JavaScript programming aid, has been adapted by others over 500 times and has over 5,000 people following updates to the code.

Likewise, Ushahidi has released a range of different open source code repositories as part of its crowdsource platform. These include components for analyzing incoming reports from mobile phones, email and the web to find related items, and apps for viewing and creating incident reports remotely as part of an Ushahidi deployment. In total, Ushahidi's platform for information collection, visualization and interactive mapping has been downloaded over 22,000 times.

The Data Visualization project has released five separate modules in addition to translating Google's Visualization API into the Drupal content management system.⁴ Currently, there are 548 sites reporting registered instances of using the Data Visualization tools, putting Data Visualization's set of tools in the top 20 percent to 25 percent of most frequently used Drupal modules.

² These include: CloudCrowd, Backbone.js, Underscore.js, Jammit, Docsplit, DocumentViewer, Pixel Ping and VisualSearch.

³ The community of developers that supports Backbone.js has helped create a suite of tutorials on using the tool and even a book on it, 'Backbone.js on Rails'.

⁴ These include: Timelinemap, KML Content Type, TagMap, Importer and VID.

Table 6: Open Source Code Created by 2009 Grantees

Grantee	Host Site
City Circles	github.com/adamklawonn/CityCircles
CMS Upload Utility	github.com/dkukral/cms_utility
Councilpedia	svn.wikimedia.org/viewvc/mediawiki/trunk/extensions/DataTransfer
Data Visualization	drupal.org/project/gvs
Ushahidi	github.com/ushahidi
Document Cloud	github.com/documentcloud
MediaBugs	code.google.com/p/mediabugs-open/

Source: Arabella's online survey of 2009 grantees, Fall 2011. Updated in May 2012.

The open source requirement of the Knight News Challenge represented a commitment to ensuring that the products developed by grantees have the maximum opportunity for widespread adoption. Some winners, however, faced unanticipated difficulties in building and implementing their

projects as a result of the increased complexities associated with working with open source code. The creation and maintenance of code for digital tools is a time-intensive endeavor that involves documentation, evaluation, iteration, and training to encourage broader community adoption.

Funding attracted by each innovation beyond Knight's support

We looked at the sustainability of projects as evidenced through continued organizational support and funding streams beyond Knight Foundation.

Five of the 2009 Knight News Challenge projects have the ongoing support of nonprofit organizations: Councilpedia and the Gotham Gazette; Data Visualization and the Jefferson Institute; Mobile Media Toolkit and Mobile Active; DocumentCloud and Investigative Reporters and Editors; and a crowdsource platform supported by Ushahidi. Several projects have also received additional funding for their innovations beyond their Knight Foundation grant. Specifically:

- The developers of the Mobile Media Toolkit received additional funding from the U.S. Agency for International Development to implement a complementary project to provide direct technical assistance to independent media organizations in developing countries.
- The Data Visualization project is an ongoing effort of the Jefferson Institute, which received earned income by providing services to news organizations directly, including The Wall Street Journal and the PBS NewsHour, and received additional funds from other philanthropic foundations such as the Rockefeller Brothers Foundation and the Open Society Foundation.

- The developers of the Councilpedia wiki are supported by The Citizens Union Foundation of the City of New York and its Gotham Gazette newspaper, and have raised additional funds through individual donations and special events.
- Ushahidi has formed its own independent nonprofit organization to spread its data visualization and mapping tools and received additional support to build its network and organization, including operational support from Omidyar Network and the MacArthur Foundation.
- The developers of DocumentCloud, initially a joint project of ProPublica and The New York Times, found an institutional partner in June 2011 as a project of Investigative Reporters and Editors, which now supports the operations of the project.
- Boston Cyber Arts' Virtual Street Corner project received small amounts of additional funding from the Black Rock Arts Foundation and the New England Foundation for the Arts. It also received donated equipment from Lo Loca Moda (a social media company) and Provide (a teleconferencing company).

The remaining 2009 Knight News Foundation Winners – CityCircles, CMS Upload Utility and MediaBugs – did not report receiving additional financial support.

Lessons Learned

The 2009 cohort of Knight News Challenge winners includes a broad diversity of projects that reflect the open nature of the contest and its strategy of experimentation at multiple levels within community media ecosystems. This section highlights some of the overall lessons regarding both project design and execution gleaned from the successes and challenges of the winners. Some of the insights confirm well-known principles of innovation, as well as elements of effective project management.

- **A need you can feel** – the importance of resolving a pressing problem for a well-defined audience
- **The wisdom that nurtures innovation** – the advantages of having an experienced institution to house and nurture your innovation
- **Code level practices** – the value of integrating open source code development into all aspects of a project's design, from conception to staffing
- **Cultivating evangelists** – the benefits of having net promoters support adoption and troubleshoot in resistant cultures

Let's explore each of these lessons learned in turn.

A need you can feel

Some of the most successful news challenge grantees built their products or services to address a real problem for a well-defined audience. They succeeded because of this single-minded focus, which provided them with clarity in their goals and an ability to refine their products to meet the needs of target audience

A strong example is DocumentCloud. Its developers identified a clear problem that journalists understood and were struggling to address, namely how to better organize, annotate and search primary source documents. The current practice of compiling piles of documents with scribbled notes and yellow post-its clearly needed a digital replacement. A project team led by journalists and technologists from The New York Times and ProPublica was acutely familiar with culture and needs of newsrooms, which allowed them to design their software with reporters in mind. To this end, the initial appeal of DocumentCloud was its document reader, which allowed reporters to store and organize multiple PDF documents.

Not all the Knight News Challenge experiments were focused on issues that were well understood as pressing problems by a target audience. The MediaBugs project, for example, which allows users to publicly document errors they find in the news and submit those reports to news organization for correction, struggled to convince news organizations the project approached already had in house corrections systems. They felt MediaBugs offered a solution to an issue they had already addressed. And even where existing practices for addressing errors were suboptimal, this wasn't seen as an urgent issue among newsrooms' competing priorities for survival.

Similarly, another news challenge project, CityCircles, which provided hyperlocal news and information tied to the burgeoning community that used Phoenix's new light rail line, struggled to develop a network of participating merchants and commuters. Part of the challenge was that the project initially focused on creating a web-based publishing platform for the Phoenix light rail community, rather than mobile network tools more suited to commuters. The result was CityCircles had a hard time gaining traction from commuters using the rail. The lesson here is that it is critical to have a clear understanding of the needs of a project's audience for a project's overall success.

The wisdom that nurtures innovation

Some of the Knight News Challenge startups benefited from having an institutional home to incubate and grow their ideas. These successful projects drew on the experience, leadership and networks of their existing host organizations to drive their innovations forward. This support ensured that much of the necessary infrastructure (in terms of skills and personnel) was already available to contribute to the growth of the project.

On case in point is Data Visualization, which benefited from being a part of a larger institution, the Jefferson Institute, a Washington, DC-based nonprofit group focused on research in education. The Jefferson Institute helped manage the team's expansion and skill needed at different phases of the project. At the outset, the greatest need was for technical expertise to develop the software modules needed to persuade journalists to use the Data Visualization innovation to enhance their reporting and help convey complex information in ways that readers could understand.

But as the project grew, new skills were required to work with clients and to manage scaling-up efforts. The project team was then able to draw on the Jefferson Institute's network for outreach support alongside the ability to broker partnerships with Christian Science Monitor, PBS NewsHour, The Miami Herald, and The Wall Street Journal.

Similarly, DocumentCloud benefited from being housed within The New York Times and ProPublica, as its project leaders were able to tap the experience within these institutions in establishing necessary elements as the startup increased its capacity. The senior management at ProPublica, for example, provided the DocumentCloud team with legal support to help incorporate, auditors and controllers to help with payroll and book keeping, and acted as fiscal agents until it became a 501(c)3 nonprofit organization. The project could take advantage of these assets at little additional cost and was able to offset activities that are otherwise often challenging for new startups afford.

Building and successfully scaling innovation requires a rare combination of talent: strong tech and programming skills, marketing and outreach, business development and effective project management capacities. Winning projects that were hosted within an existing institutional base were often able to more easily draw on the mix of talent and resources they needed to seed and grow their ideas without incurring significant costs.

Code level practices

Knight News Challenge projects that gained the most traction among developer communities were intentional about certain open source code level practices that helped advance their work. These successful projects intentionally created and released their open source code in stages that allowed other developers to understand how to contribute to it, what the right methodologies were for adapting it in their own work, and how to make it better.

In contrast, when code development was treated as an afterthought and not integrated into the project design, the take up of the code was poor. And when code was released publicly in one large repository, often with little documentation, other developers found it very difficult to use or modify the code.

The upshot: Open source projects that are designed well not only add to the open architecture of the web but also help build a robust community of developments that will contribute back to improve the project. Three useful practices are worth highlighting:

- **Don't always start from scratch**
- **Release early and often**
- **Build in bite sizes**

Here are some examples of each of these useful practices.

Don't always start from scratch

In building their project, the Data Visualization team did not develop their own open source material from scratch but instead brought the open Google Visualization API, which displays basic charts such as line, pie and bar graphs, to the open source Drupal content management system. This allowed the Data Visualization team to leverage the dynamism of both the Google and Drupal communities and pull them together to form a greater support network for their code. Additionally, using Google's API has the added benefit of improving the Data Visualization tools as Google issues new releases. Translating, modifying and making use of existing code can often provide projects with early momentum in developing their initiative, whereas trying to create a community around a new effort can be much more difficult.

Release early and often

Projects gained more traction among open source communities when they released their code in smaller, usable modules as the project developed, not in a single tranche prematurely (before it is sufficiently developed to be useful for other users) or at the end of the project (as an afterthought). For example, the DocumentCloud team made a conscious decision at the start of their project to release their code regularly in this manner. The team also provided detailed documentation and comments that made it easy for others to follow their software and to identify ways to contribute. Open source design works best when projects write code with an eye towards ensuring readability and usability by other open source developers.

Building in bite sizes

Projects that achieved strong use and adoption of their code often built and released their software in individual components, knowing that certain elements had value and a wide range of uses beyond the main focus of their project. In addition to the central DocumentCloud web application for annotating, uploading and sharing primary source documents, the DocumentCloud team created and released eight individual code repositories that help power its main tool. These included specific Ruby on Rails and JavaScript applications for managing servers, extracting text, rendering images and creating PDFs from a variety of file formats. In particular, two components that aid the development of JavaScript applications have been widely used and modified by a range of tech communities and organizations.⁵

Similarly, the Data Visualization team released its open source code in modules that allow users to pick and choose the tools most appropriate to their needs without being burdened with unnecessary features. Following the translation of Google's Visualization API, the team released five additional modules. Of these modules, VIDI wizard (released in October 2010), which helps users determine the right kind of visualization for their data and formats it

⁵ Backbone.js has over 8,200 watchers on Github and has been forked over 1,100 times; Underscore has 5,103 watchers on github and has been forked 534 times.

accordingly, has received significant uptake exceeding the project's expectations. To-date it is actively being used by nearly 230 different sites.

Cultivating evangelists

Many Knight News Challenge winners face a common obstacle: gaining adoption of their product or service in a news industry that is often resistant both to change and to unfamiliar technologies. Newsrooms are often slow to accept new tools or methods. Overcoming this obstacle requires thinking creatively about how to leverage the strengths of a tool and a project team's networks to increase adoption in resistant cultures. Several grantees benefited from advocates and evangelists who championed their products from within news organizations, helping to ease the transition toward new methods and approaches.

Most notably, DocumentCloud has been adopted by several news organizations, including the Chicago Tribune. DocumentCloud benefited from having web-savvy, technically proficient journalists in influential newsrooms that championed their platform as a way to better manage primary source documents. At the Chicago Tribune, for example, Brian Boyer, the news applications editor on the staff of the Tribune, served as an evangelist for adoption within the organization and as a trouble-shooter helping other media organizations address questions about how to best use the platform. Having internal advocates that can bridge the cultural gap between innovations and their target audience and provide quick and easy technical support for potential adopters is a great asset for any project.



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DocumentCloud

Project	Grantee	Innovation	Grant
DocumentCloud	ProPublica and The New York Times	An online database and tool for reporters to annotate, organize and publish primary source documents on the web	\$719,500

When crafting a story for publication, reporters increasingly have to read, synthesize and manage multiple primary source documents, but this collection of documents can be unwieldy and, once the article is written, these resources are usually unavailable to readers or other reporters interested in the material. DocumentCloud was jointly created by the nonprofit investigative journalism organization, ProPublica, and The New York Times, to provide reporters with a solution to this problem by building a platform for annotating, organizing and publishing primary source documents on the web.

The Innovation

DocumentCloud is an online database and platform for source documents that can be easily searched and shared through fields such as topics, locations, people, government agencies, and publication date. Ultimately, it aims to use this easy access to primary source documents as a way to strengthen the quality and credibility of reporting and reader engagement with news and information.

Implementation

The project's initial beta-release, in March 2010, introduced Document Viewer, a tool originally developed within The New York Times that allows reporters to upload and search

through their source documents, as well as highlight and annotate them. The tool also mines key information from the document and presents it in useful forms, for example by extracting the dates from within a document and providing the user with a ready-made timeline. In conjunction with other developed components, the main DocumentCloud application also provides a convenient way for journalists to collaboratively research the same collections of source documents and to show the readers the material they report from instead of only mentioning it.

When DocumentCloud launched, reporters were able to keep private or make public the documents they uploaded. In January 2011, the project opened the document repository to public searches. While reporters were still able to keep their documents private if they so wished, once documents were embedded in stories on a news organization's site they were automatically added to DocumentCloud's search repository and made publicly accessible.

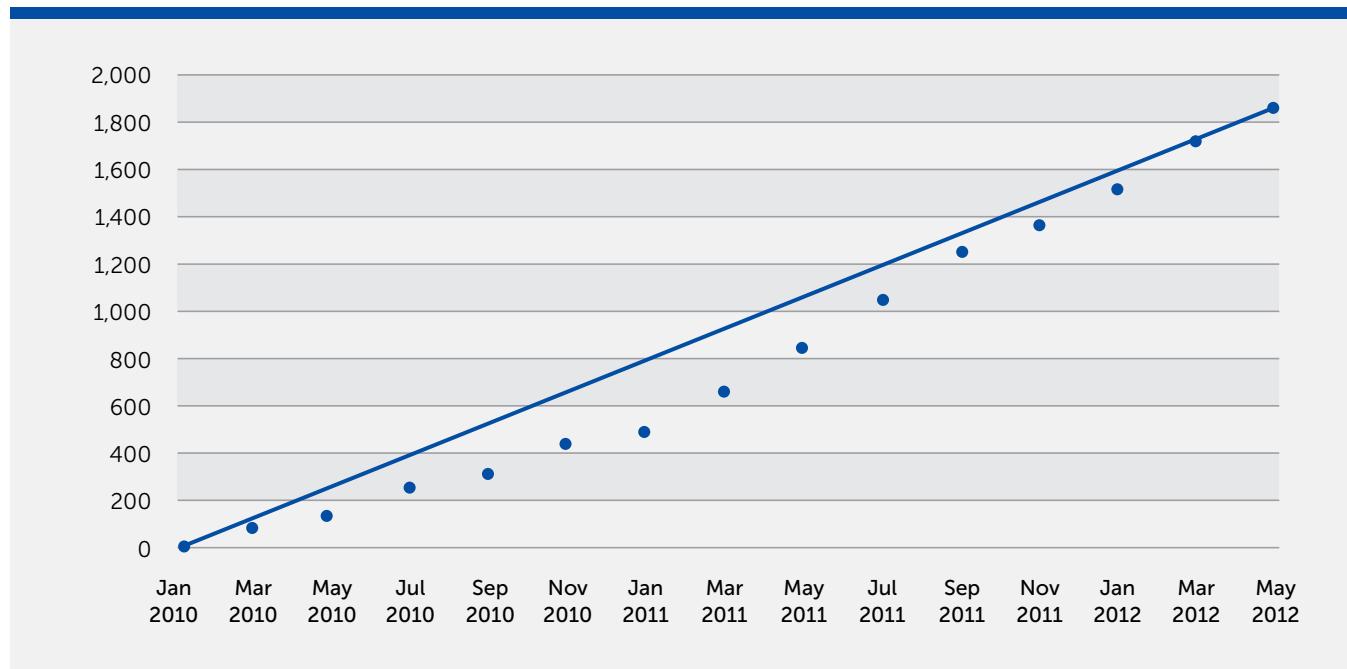
At the start of the project, DocumentCloud was intentional about building and sharing its open source code in smaller, usable modules along the way to full product completion, rather than as one set of code released at the end of product development. To-date, the project has extracted and released eight standalone components that help power its main application, including specific Ruby on Rails and JavaScript applications for managing servers, extracting text, rendering images and creating PDFs from a variety of file formats.

Reach and Outcomes

DocumentCloud has successfully achieved widespread adoption among news organizations and continues to expand. In May 2010, a few months after DocumentCloud's

release, about 2,400 source documents had been uploaded by 278 users from more than 80 organizations. These numbers have increased substantially since then. Currently, over 300,000 documents have been uploaded by 1,844 individual active user accounts in over 600 organizations in total.

Exhibit 1: Total Number of Unique User Accounts



Of the 600 organizations that have used DocumentCloud, a small group of more than 30 organizations have uploaded over 1,000 documents.¹ The most prolific users of the application based on the total volume of documents uploaded include: The New York Times, Anchorage Daily News, ProPublica, the Dallas Morning News, Washington Post, Los Angeles Times and Firedoglake.

DocumentCloud's overall goal was to encourage primary source documents to be openly shared among journalists and used by readers as a way to enhance the quality and engagement of reporting. This broader vision has gradually come to fruition. When it first launched, DocumentCloud was used more commonly to analyze information privately. In 2010, nearly 400 (17 percent) of the documents uploaded on DocumentCloud were made public, whereas about 2,000 (83 percent) were private. In December 2011 this balance shifted with the platform increasingly used to publicly share and collaborate on source documents. Currently, just over 200,000 (about 60 percent) of all documents uploaded are public, whereas the remaining 40 percent remain private.

Aside from news organizations, many nonprofit organizations gather and publicize documents of value to journalists and the public. They use the full spectrum of DocumentCloud tools to upload documents for analysis, share them within their organization and with collaborating partners, share documents privately with experts who can help them interpret the material, publicize a portion of those documents when the project is complete, and annotate posted documents with notes that highlight material added by journalists.

The primary motivation for reporters to use the tool has been to help them easily access and organize their documents. Addressing a practical issue journalists were trying to solve to better manage their source documents has contributed to effective investigations and broader shifts in newsroom practices and reader engagement.

Case in point: The Los Angeles Times uncovered a scandal in the city of Bell, California where part-time city council members were receiving salaries of almost \$100,000 a year. The investigation into the scandal entailed

¹ At the other end of the spectrum there are 244 organizations with five or less documents uploaded.

collecting and examining multiple boxes of documents. DocumentCloud allowed the reporters to organize all of these documents electronically. Once the stories were published, the document viewer allowed readers to examine the documents cited in the articles directly, increasing the credibility of the news reporting. Ben Welsh, the database producer at the Los Angeles Times, noted that usage of DocumentCloud has helped to shift the culture to some extent within the organization to one in which source documents are actually released for longer investigative reports, not just referenced in the stories.

Similarly, the Chicago Tribune used DocumentCloud to upload all of the documents from former Illinois governor Rod Blagojevich's corruption trial. Brian Boyer, news applications editor at the Chicago Tribune, says that DocumentCloud has shifted the way its reporters think about reporting. They are starting to see access to a story's primary source documents as more obligatory, whereas in the past the norm was to only cite documents in news stories without providing access to them.

Beyond the direct use of the application by news organizations, DocumentCloud made significant contributions in the area of open-source code and has cultivated a strong developer community. DocumentCloud's tools have been downloaded over 250,000 times, independently copied and modified by others ('forked') over 1,000 times and attracted nearly 10,000 individuals that have signed up to be notified of changes to the code ('watchers'). On Github, one of the main web-based hosting services for software development projects, DocumentCloud has the 8th and 30th most watched code repositories, and the 14th most forked repository of the more than 3 million publicly available repositories.

In particular, two modules, Backbone.js and Underscore.js, are now critical components of open source projects across the web. Backbone.js is a toolkit for building JavaScript applications that helps web developers manage their user interfaces and organize application data without having to save it to a remote server. This module has been used by more than 40 companies and projects, among them a number of popular web applications such as Foursquare, LinkedIn, Groupon, Pandora, and Basecamp, as well as nonprofit technology groups and other Knight News Challenge winners, such as TileMill (an open source mapping application).² The other module, Underscore.js is a JavaScript programming aid that has been adapted by others over 500 times and has over 5,000 people following updates to the code. If DocumentCloud wasn't open-source or if it operated as a for-profit firm, the Tribune's Boyer believes it could charge "tens of thousands of dollars for [its] product."

In June 2011, the DocumentCloud founders, full-time journalists employed by other organizations, made the

decision to house DocumentCloud within Investigative Reporters & Editors (IRE), a nonprofit organization dedicated to improving investigative journalism, to continue to develop and maintain the platform for the long run. The project has continued to gain traction and sustain interest since that hand-off.

Lessons Learned

DocumentCloud has been highly successful in creating a tool widely adopted and valued by news organizations and in developing open source code that helps power a range of applications on the web. While many News Challenge projects have often struggled to get their media innovations adopted by newsrooms, DocumentCloud found a way to break through that barrier.

The project benefited from a highly talented set of journalists, managers, and skilled, knowledgeable programmers. Aside from the project team's unique composition, there are a variety of factors which contributed to the platform's success that other media startups can learn from.

- **A Need You Can Feel:** DocumentCloud identified a clear need that journalists understood and were searching for solutions to: piles of source documents with scribbled notes and yellow post-its needed a digital replacement.
- **Beta Test in a Native Environment:** The innovation came from the community it was intended to serve. Being embedded in The New York Times and ProPublica infused the DocumentCloud project with an intimate understanding of newsroom culture and provided a real time lab for product testing and honing features that were critical for journalists. One such feature was the importance of secure, private settings for journalists to work on their source documents.
- **Change in Bite-Size Pieces:** The grand vision of sharing primary source documents was built with familiar entry points. Reporters were allowed to upload and annotated files privately, which could then later be made public. Once journalists began to trust DocumentCloud to share materials privately, they became more comfortable using the tool to share documents publicly. Scratching an immediate itch encouraged greater adoption and evolved into support for the broader vision.
- **Lowering the Technical Barriers:** Adoption was made easy because DocumentCloud didn't require newsrooms to maintain any of DocumentCloud's software on their servers or agree to a formal IT use policy. Ensuring users didn't have to host DocumentCloud meant newsrooms with limited technical capacity could still adopt the tools.

² The community of developers that supports Backbone.js has helped create a suite of tutorials on using the tool and even a book on it, 'Backbone.js on Rails'.



Experiments in Media Innovation: A Look at the 2009 Knight News Challenge Winners



Data Visualization

Project	Grantee	Innovation	Grant
Data Visualization	The Jefferson Institute	A suite of user-friendly, open source, data visualization modules for journalists	\$243,600

This project run by The Jefferson Institute, a Washington, DC-based research and education institute, involved the development of a set of open source data visualization tools for journalists to use to enhance their reporting. The amount and availability of data as a news source has grown exponentially, but making sense of such data and communicating it meaningfully remains challenging. This has led to a growing interest in visualization tools that help reporters convey complex information in ways readers can easily understand.

In March 2008, Google released its Google Visualization API, which allows websites to embed dynamically updated charts and graphs on their sites. For many organizations and individuals, relying on Google's API is a simple, effective solution. For others, though, the potential problems of ongoing reliance on Google to support and maintain its API made it a risky solution. The Jefferson Institute was looking for ways it could host visualization tools on its own servers and incorporate them into a content management system. With no solutions that met all of its needs, the organization decided to create its own set of open source tools.

The Innovation

Data Visualization is a suite of user-friendly, open source, data visualization modules for journalists to use as well as an interface for tools to facilitate importing and mapping

data from various sources. The innovation aimed to break down technical barriers that have prevented community news leaders and citizen journalists from using other types of data visualization tools. Ultimately, project staff hopes the tools will empower more people to explore local data, investigate information trends, and share their findings in ways that improve and expand community understanding.

Implementation

Rather than start from scratch, the Jefferson Institute brought the open Google Visualization API, which displays basic charts such as line, pie and bar graphs, to the open source Drupal content management system. In addition, in March 2010 the Jefferson Institute developed and released four separate visualization modules:

- **TimelineMap**, which displays a map with an associated interactive timeline
- **TagMap**, which overlays geo-coded tags on a Google map
- **KML Content Type**, which helps sites display data on Google Earth
- **Importer**, which allows uploading of various types of data files

In October 2010, the Jefferson Institute released an additional module, VIDI, a wizard that helps users format their data and determine the right visualization for the kind of information they're seeking to display. Each module was designed and released with the goal of providing good journalism and highlighting what was possible within the quickly changing field of visual journalism. Jefferson Institute President Aaron Presnall explained, "Our biggest challenge was that journalists and editors do not want data viz tools. They want good journalism. So, we dove into data journalism – because it is an amazingly exciting field where we excel and because we can simultaneously demonstrate the great journalism that the VIDI data viz tools enable."

The Jefferson Institute intended to roll out its new products primarily in Eastern Europe to support its own projects (the Institute also has offices in Serbia), but there was much more interest than anticipated from US news organizations. One of the most noteworthy ways in which its Data Visualization's tools have been used in the US is through its work with Patchwork Nation, a reporting project originally developed in 2008 by the Christian Science Monitor. Patchwork Nation uses demographic, voting and cultural data to cluster and organize communities into "types of place" based on characteristics such as common income levels, racial composition, employment and religion.¹

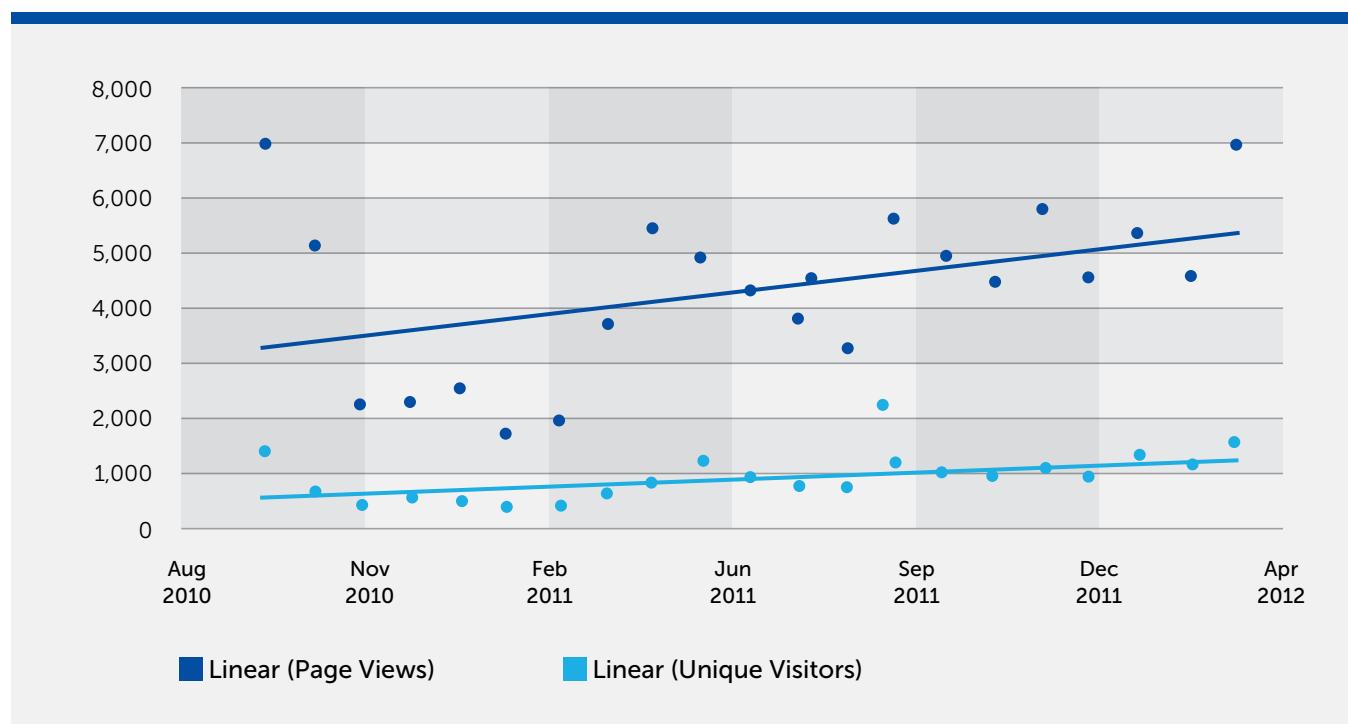
Patchwork Nation now functions as a reporting project of the Jefferson Institute and relies heavily on the Data Visualization tools. Patchwork Nation is used by PBS NewsHour, the Christian Science Monitor, WYNC radio and local PBS affiliates. Through its relationship with Patchwork Nation, Data Visualization received greater visibility and access to massive data sets that have allowed the project to expand its work.

Reach and Outcomes

One way in which to measure the adoption of the Data Visualization tools is through the extent to which the Drupal community has engaged with the tools. In September 2010, two months after the project's demo site was launched, there were 207 registered instances of Data Visualization modules installed on Drupal websites. Currently, there are 548 sites reporting registered instances, with a continuing upward trend, making Data Visualization's suite of tools in the top 20 - 25 percent of the most frequently used Drupal modules.

Additionally, the number of monthly page views and unique visitors to the Data Visualization project demo site shows a similar trend (see Exhibit 2 below). The average length of stay on the site has also remained high at 4 to 5 minutes.

Exhibit 2: Data Visualization Monthly Reach Data



Note: This graph displays trend lines drawn from a regression analysis of the raw data.

¹ Jefferson Institute staff members were introduced to Patchwork Nation members at a Knight Foundation meeting in Miami.

The project's modules, particularly the VIDI data visualization selection tool, are used by a range of news organizations. In the project team's own words, the uptake of its VIDI module "extended beyond our wildest expectations." The VIDI tools have been used by a variety of large outlets, via the Patchwork Nation project. These include: PBS NewsHour (which uses the tools to support a weekly Patchwork Nation blog post), The Miami Herald (to map primary election returns in its news section), The Wall Street Journal (to support the weekly Politics Counts blog), and the radio station WNYC's site (to support maps and charts on all GOP primary states). The tools are also being used by smaller, local civic initiatives, such as PTA activists seeking to engage more efficiently in local school board budget battles.

The Patchwork Nation site itself attracts on average 90,000 page views a month. During the November 2010 US Senate and House of Representatives election, this peaked at 3.5 million page views on Election Day. The Jefferson Institute team expects a large spike in traffic around the November 2012 US Presidential Election coverage. Likewise, the team recently signed an election cycle coverage partnership with American Public Media (APM) in collaboration with the Woodrow Wilson International Center for Scholars. As part of the partnership, APM will embed one of their journalists in the Data Visualization team's group of engineers and a senior data journalist to inform their election reporting.

According to Tom Davidson, a Senior Director at PBS Interactive who has worked to incorporate the Data Visualization tools into PBS news stories, "Data Visualization strikes me as being right at the cusp of becoming a mainstream storytelling tool." One of the main challenges he sees preventing the tools from becoming mainstream is that they still require some expertise in coding and data manipulation; the technology has not yet evolved to the point where that's no longer the case. Within a year or two, however, he would expect more widespread uptake, as the ease of use improves and reporters become more comfortable with the tools.

Lessons Learned

Several factors have contributed to Data Visualization's success to date. Two in particular stand out.

- **An Institutional Home for Growing Ideas:** The project benefited from being housed within the Jefferson Institute, which provided the infrastructure to manage the expansion of the development team's needs and support outreach to attract and manage additional partners. As Aaron Presnall notes, anticipating the skills needed at different points in the project's lifecycle and ensuring proper staffing was crucial to Data Visualization's success. Early on, the project was primarily technical, and the skills staff needed were related to software development. As the project grew, new skills were needed to work with clients and manage scaling-up efforts. Having an organization with these skill sets available and the flexibility to employ them at different times helped the project advance rapidly through its development and initial growth.
- **Leading with an Open Source Mindset:** The project avoided some of the issues other News Challenge winners encountered in working with open source code by building on existing tools (such as Google's API) and creating a suite of open source products that were as generalizable as possible to different groups of people. The VIDI module proved to be particularly valuable in this regard, as it serves as a central wizard with an intuitive interface that allows users to easily manage the full range of functionality available in the other five modules.



Experiments in Media Innovation: A Look at the 2009 Knight News Challenge Winners



Ushahidi

Project	Grantee	Innovation	Grant
Ushahidi	Ushahidi, Inc.	A crowdsource platform for information collection, visualization and mapping using the web, SMS, Twitter and email	\$70,000

This project developed by Ushahidi, a nonprofit technology company based in Kenya, offers an open source software platform to collect, visualize and map citizen reports from large news events. Ushahidi emerged out of efforts to map violence in Kenya following the contested 2008 presidential elections. That experience heightened awareness of the inadequacy of traditional reporting methods and tools for gathering information and citizen input on complex and geographically dispersed news events.

The Innovation

Ushahidi's platform is designed to allow citizens to report on events across geographies using the web, SMS, Twitter, and email. The platform places reports on a website, map and timeline, allowing viewers to track an event across time and geography. Ushahidi received funding from Knight Foundation to further scale its work, partner with nonprofits in Kenya to deploy the platform, and create a cloud-based version of its software.

Implementation

In August 2010, Ushahidi launched the cloud-based version of its platform, Crowdmap.com, which allowed organizations to access Ushahidi over the Internet without having to install it on their own servers. Three months

later, Ushahidi released version 2.0 of its overall software platform (called Luanda), which provided additional features requested by users. These included: tagging certain phone numbers, email accounts or twitter users as 'trusted reporters' that are automatically approved as verified sources; quickly and easily localizing the language used in deploying the platform; and posting or retrieving information from Ushahidi deployments through an API.

On the ground in Kenya, Ushahidi partnered on a project, Uchaguzi Kenya, to monitor the 2010 Constitutional Referendum in collaboration with the Social Development Network (SODNET), the Constitution & Reform Education Consortium (CRECO) and URAIA (Kenya's National Civic Education Programme). The Ushahidi team customized their web and mobile-based platform for citizens and civil society groups to report incidents and problems during the electoral process. They also provided technical training to CRECO monitors and administrators and recruited and managed a team of volunteers. The project was later replicated in Tanzania to monitor the country's national elections.

Ushahidi went on to manage a series of deployments with various partners in Kenya. These included partnerships with:

- **Unsung Peace Heroes and Building Bridges** projects to recognize and reward Kenyans who participate in peace initiatives and promote conflict resolution.

- **Huduma**, a collaboration between SODNET/INFONET, which assists Kenyans reporting on problems with utility services using a customized version of Ushahidi funded by the United Nations Millennium Campaign.
- **Internews Ushahidi**, a project to network Internews-trained journalists throughout Kenya to exchange conflict-sensitive content especially from Nairobi, Rift Valley and Nyanza provinces.
- **Computer Aid International**, which distributes computers in developing countries and works with community organizations in health, agriculture, education and visual inclusion. In partnership with Ushahidi, the project mapped Computer Aid International's activities in Africa and showcased its distribution channels for computers.
- **Sisi ni Amani**, a project to network community leaders working for peace and to facilitate rapid communication between groups and within communities as an early conflict warning system.
- **Voice of Kibera**, a project which uses the Ushahidi platform for Kibera residents and media organizations to speak out on issues that impact their community and inform those with an interest in Kibera. The site aggregates news from Kibera Journal, Pamoja FM, Kibera WorldWide, the Hot Sun Foundation, the blogosphere, mainstream news sources and individuals.
- **Global Giving**, a 10-week project to provide donors with feedback from citizens on whether services provided by specific community organizations in Kenya were meeting local needs.

Other deployments set up the Ushahidi platform to collect reports, but have not been actively maintained:

- **Hatari**, a project to map reports of crime and corruption in Nairobi.
- **Material and Neonatal Medical Field Systems**, to track maternal and neonatal care in Kenya.
- **Piga Nduru**, a project of the Voluntary Youth Philanthropists (VYP) to improve social accountability by encouraging citizens to report incidents of political harassment, conflict and corruption.

- **ICT Fire and Rescue College in Thika, Kenya**, a project that uses Ushahidi's mobile capabilities to provide a dashboard for processing information regarding fire and rescue.
- **Rift Valley Provincial Disaster Risk Reduction Platform**, to centralize disaster planning and response in partnership with the UN Office for the Coordination of Humanitarian Assistance (UNOCHA).

In early 2011, Ushahidi partnered with the Harvard Humanitarian Initiative to review how organizations have incorporated Ushahidi's software and used the platform to advance their goals. Their research resulted in the creation of case studies on Unsung Peace Heroes, Building Bridges and Uchaguzi Kenya and Tanzania. In addition, the team created a set of three toolkits to help interested organizations learn how to effectively use the Ushahidi platform, identify partners and technological resources, and collect and analyze crowdsourced information.¹

Ushahidi has pursued various outreach efforts to other organizations to spread insights learned from its multiple implementations and to encourage contributions. These include organizing developer hackathons where the Ushahidi code base was introduced to interested developers, training on content management and tech tools, and creating the iHub in Nairobi, a space for technology developers and volunteers.

Reach and Outcomes

The Ushahidi platform has been extensively adopted and used worldwide, for example, to monitor elections in Sudan, Mexico, India, and Afghanistan and to map crisis situations after earthquakes in Haiti, New Zealand, and Japan. To date, there have been 30,930 instances of organizations and individuals using the Ushahidi platform. This includes 18,737 uses of Crowdmap, the cloud-based hosted solution, and 12,193 downloads of the Ushahidi platform by external entities.² The launch of Crowdmap.com has helped expand access to the platform with an increasing proportion of new installations using the hosted option instead of the original platform.

The many Ushahidi projects vary widely and demonstrate the adaptability of the platform. Part of the Knight funding was intended to support Ushahidi's work with several nonprofit organizations in Kenya to deploy the

¹ Can be downloaded at: www.Ushahidi.ke. The tools have been widely shared with developers and community organizations, and the toolkit is shared almost on a daily basis with developers and organizations interested in deploying Ushahidi's platform.

² Downloads do not necessarily equate to full deployments of the Ushahidi platform. Due to the way use of the Ushahidi software is tracked, it's not possible to determine whether these are all ongoing active deployments. For more detail on this see: <http://blog.ushahidi.com/index.php/2012/07/10/which-is-better-10000-reports-or-10000-maps-part-12/>. For an earlier report on Ushahidi metrics from early 2009 to March 2011, see "Key Deployment Report", March 2011 by Sarah George.

crowdsource platform. A few of these projects stalled and some are still in the process of getting off the ground, but a few have demonstrated results.³

For example, the Uchaguzi project successfully deployed Ushahidi's platform to help civilians, civil society groups and journalists monitor the Kenyan constitutional referendum electoral process in real time. Over 2,500 messages were received from individual Kenyans and 500 trained election monitors placed at polling stations throughout the country; 1,778 of those messages were received on voting day.⁴ Reports included information on electoral offenses such as intimidation, hate speech, vote buying, polling clerk bias, and voting misinformation. Of the reports, 149 resulted in action taken through the CRECO network. For example, monitors identified posters with incorrect voting colors, which prompted the Interim Independent Electoral Commission to remove the posters.

The Uchaguzi project was later replicated in Tanzania and received a large response, with over 4,000 citizen reports submitted to monitor the October 2010 national elections. The deployment, however, faced major technical challenges due to the time intensive process of manually verifying trusted sources and the use of volunteers with novice computer skills that limited the ability to rapidly process and map information during the election.

Both of these deployments generated useful feedback for Ushahidi's development team on how to improve the platform's functionality. Since then, additional upgrades to the software have allowed for automatic geo-location based on the phone numbers of trusted sources that are identified in advance and the ability to flag messages as urgent/important/not urgent to help with the rapid processing of crowdsourced reports.

Another Ushahidi deployment, Unsung Peace Heroes, was designed to map peace initiatives throughout Kenya and to recognize individuals who participated in reconciliation efforts in the violent aftermath of the December 2007 Kenyan elections.⁵ Developed by Butterfly Works (a Dutch design team) and Media Focus on Africa Foundation, the project collected and posted nominations from individual Kenyans received through SMS reports, email and the web using the Ushahidi platform. Eight winners were chosen from over 500 nominations. National newspapers, TV and radio extensively covered the work of the winners, profiling their efforts towards conflict resolution. Following the project, one of the winners went on to replicate the

Unsung Peace Heroes competition model in his village to allow people to honor leaders within their community.

Beyond the elections, Unsung Peace Heroes led to creation of the Building Bridges project, a new and ongoing effort to recognize and reward Kenyans who participate in peace initiatives and promote conflict resolution in their communities. As part of its initial implementation, the project received more than 16,000 SMS reports, yielding just over 600 submissions. From these submissions, 10 winners were selected. In using the Ushahidi platform, however, the project faced a few challenges, including unreliable internet connectivity. This meant the team had to rely on receiving citizen reports via SMS, which was not well automated and required significant manual effort to make the submissions usable.

Lessons Learned

Ushahidi has been successful in creating a platform widely used to organize, visualize and map crowdsourced information. The team's efforts to scale their platform, release a cloud-based service, and partner with nonprofits to deploy the tools on the ground in Kenya contain a number of useful lessons.

- **Community Capacity:** Ushahidi's platform requires technical acumen to install, launch and maintain. Local organizations using the platform, however, often did not make the necessary provisions to outsource technical assistance to integrate the software into their projects. Organizations that conducted a tech assessment before starting a project were much better placed to understand and determine their internal technology needs, the capacity of their partners and their ability to successfully utilize the software. To help with the challenges of implementing the software, Ushahidi has provided training and demonstrations to prospective testers, organized Ushahidi 101 events, facilitated a space for organizations to match up with local IT talent, and developed its community resources page and user listserv to connect current and potential users.⁶
- **Designing with Bandwidth Constraints:** In several deployments in Kenya, individuals did not often have sufficient bandwidth and consistent internet connectivity to easily upload reports on the Ushahidi platform. With this in mind, many users have encouraged the creation of a 'light' version of the

³ For a review of Ushahidi in supporting post-crisis response see "Independent Evaluation of the Ushahidi Haiti Project", April 2011, Morrow, N. et al. For a review of Ushahidi deployments in Egypt (U-Shahid) and Sudan (SudanVoteMonitor) see 'Do Liberation Technologies change the balance of power between repressive states and civil society?', Meier, P. November 2011, Doctoral Dissertation, Fletcher School of Law and Diplomacy.

⁴ "Uchaguzi A Case Study: Success, Challenges and New Ways Forward", Harvard Humanitarian Initiative (2012).

⁵ For more detail see: Case 1: Unsung Peace Heroes and Building Bridges, Harvard Humanitarian Initiative (2012).

⁶ The resources to connect current and potential users were initially established by Ushahidi community member, Chris Blow.

Ushahidi website to enable low bandwidth users to access the information and mapping systems. More recently, an option was created that allows users to collect data offline and then upload the information later when an internet connection becomes available.⁷

- **Safety and Privacy in the Crowd:** For future projects in high risk security environments, more time should be spent planning to ensure the safety and privacy of individuals using the Ushahidi platform. This might include training volunteers on the importance of privacy, crafting public messages to the media, using back-up volunteers from the diaspora or others who can process information remotely, and establishing backup servers in external location so that operations can continue at all times.

- **Print Still Matters:** In some of the Ushahidi deployments, individuals had difficulty using the Ushahidi platform because of a lack of high-speed bandwidth and their unfamiliarity navigating and interacting with web-based maps (e.g. how to scroll through a map and zoom in and out). In instances where technology and digital literacy skills are limited, printed paper versions of Ushahidi-generated web-based maps play a critical role in helping communities use crowdsourced information.⁸

⁷ This option was created through the addition of the Android application SMSSync.

⁸ An Ushahidi community project has since been created to focus on developing offline to online solutions to address this issue: <https://wiki.ushahidi.com/display/WIKI/Offline+to+Online+App>



Experiments in Media Innovation: A Look at the 2009 Knight News Challenge Winners



Mobile Media Toolkit

Project	Grantee	Innovation	Grant
Mobile Media Toolkit	MobileActive Corp.	A toolkit for journalists and news organizations on how to create, share, and secure mobile media using mobile technology	\$200,000

This project, run by MobileActive, a leading network and resource on the use of mobile technology for social impact, offers a toolkit for journalists and news organizations to create and share mobile content, secure mobile devices and engage audiences using those devices. The use of mobile phone technology has become widespread in the US and abroad: 85 percent of Americans own and use a cell phone, while 50 percent of Africa's population owns and uses a mobile device.¹

Many mainstream media organizations and citizen journalists already use mobile technology for research and reporting. However, the sheer number of tools and applications available makes it difficult to know the most effective way to use them. With individuals consuming more of their news and information on mobile phones, media organizations need to learn how best to disseminate their content and reach their audiences. Yet, determining which tools are likely to serve them best and how to use them correctly to reach the widest audience requires knowledge of the mobile landscape that is often lacking.

The Innovation

MobileActive developed the Mobile Media Toolkit as a resource for media organizations, non-profits, and citizens wanting to use mobile phones to create content and

distribute it on the web and on cell phones. The toolkit is a collection of how-to guides, resources and case studies on how to use mobiles for reporting, news broadcasting, and citizen media participation on different platforms and in various circumstances. It is designed to address a need among media organizations, non-profit groups, and citizen journalists for guidance in identifying the best tools and products for mobile media production. As Katrin Verclas, director of the Mobile Media Toolkit project put it: "citizen media is an area where mobile technology has been very influential, but at the same time there's a lot of confusion about how to best use mobile technology for media purposes. The idea of our project was to lower the learning curve for individuals and organizations wanting to use mobile technology for media."

Implementation

This project began with a range of background research to inform the development of the toolkit, including mapping potential audiences for the toolkit, researching and collecting tools available for mobile journalism (for reporting, dissemination, publishing content and engaging audiences), conducting a gap analysis of areas in which tools were needed, and usability testing of certain tools. MobileActive staff also marketed the toolkit by attending conferences, workshops, and other venues.

¹ According to articles published by Pew and the Guardian: <http://www.pewinternet.org/Presentations/2011/Apr/FTC-> <http://www.guardian.co.uk/technology/2011/jul/24/mobile-phones-africa-microfinance-farming> <http://www.guardian.co.uk/technology/2011/jul/24/mobile-phones-africa-microfinance-farming>

The toolkit was made publicly available at the end of June 2010 following setbacks caused by delays in the initial disbursement of Knight grant funds, as well as staff transitions and limited capacity at MobileActive which affected the initial project timeline. Although the project was delayed by nearly a year in its initial release, Verclas noted in some ways the setbacks due to staffing issues "were a blessing in disguise, because our target audience [journalists, citizen journalists, and media organizations] are now really interested in mobile technology, in a way that they were not a year ago."

In early 2010, as the toolkit was being developed, the U.S. Agency for International Development (USAID) approached MobileActive to provide direct technical assistance to six NGOs in countries in Africa, Latin America and Eastern Europe on the use of mobile for media, governance and accountability. The project was part of USAID's Media Assistance Utilizing Technological Advancements and Direct Online Response (MATADOR) program, which provides short-term assistance to NGOs and independent media organizations in developing countries on the use of new media technologies to enhance their communication and coordination efforts. USAID approached MobileActive for this program as a direct result of their work on the Mobile Media Toolkit. This allowed MobileActive to draw on the research and resources generated for the Mobile Media Toolkit to help the MATADOR project, and in turn, contribute on-the-ground experience and implementations from the project to further develop the Mobile Media Toolkit.

The Mobile Media Toolkit contains resources on how to produce and share mobile media, engage audiences using mobile devices, and establish secure ways of communicating using mobile media. In total, the toolkit includes 79 mobile tools in its database that guide the user through how to perform a variety of functions, ranging from the creation and sharing of audio and visual content using mobile technology to the dispatching of information tailored to on-the-ground activists and organizers via SMS.

The toolkit also offers links to 18 case studies on the effective use of mobile tools in specific circumstances. Each case study describes how an organization employs mobile technology for the purpose of citizen media, and what successes and challenges it has had in that regard. For example, there are case studies on the use of interactive SMS services by a radio station in Afghanistan that allows listeners to access content and participate in programs, and the broadcast of news headlines via SMS by a media organization in Sri Lanka as part of a monthly subscription for users. At the time of this report, MobileActive was continuing to refine the toolkit and introduce new tools in response to user needs and changes in technology.

Reach and Outcomes

The Mobile Media Toolkit website has received an average of 30,000 unique visitors a month, which has remained fairly constant, and time spent on site has averaged around 10 minutes. It is not possible to report directly on the uptake of the tools available on the website, as visitors are not able to download the tools directly from the toolkit and instead are referred to the website of the individual tool vendors themselves. However, the tools database pages on the toolkit make up about one-third of total traffic to the website.²

Following the launch of the toolkit, various organizations approached MobileActive to develop collaborations that have broadened the use of its materials. Recently, MobileActive partnered with Al Jazeera to develop a set of simple mobile guides and tools for its reporters based on the toolkit. With the proliferation of mobile media, Al Jazeera was interested in ensuring greater consistency in the effective use of mobile media by its journalists and in identifying ways to use mobile tools to locate journalists in danger and quickly remove sensitive information from their phones that might put them at risk.

Al Jazeera has internally field-tested and put together a mobile toolkit for its journalists based on the Mobile Media Toolkit. As Cynara Vetch, a Mobile Analyst at Al Jazeera who has been working on the project, summarizes: "the most important thing will be for people to know that these tools are out there...right now, Al Jazeera journalists are isolated in what they do, and have to learn how to do things the hard way."

Additionally, Transitions Online, an organization working on strengthening and improving journalism in the formerly communist countries in Eastern Europe, approached MobileActive expressing interest in using the toolkit. Transitions Online also provided a grant to MobileActive to translate the toolkit into Russian. As MobileActive does little work within Russia itself, the translated toolkit has not been extensively marketed and used.

In an effort to further increase the accessibility of mobile technology, MobileActive plans to pre-load the top featured tools in the toolkit onto a memory card that can then be inserted into a mobile phone and automatically uploaded. This idea won them a finalist position in the Ashoka Changemakers Challenge of Citizen Media: A Global Innovation Competition. Memory cards for Android phones preloaded with journalist security tools have since been handed out at various trainings and events.

MobileActive has collected anecdotal information and stories from individuals and organizations using the toolkit to better understand how its resources and materials are

² The rest of the traffic is comprised of traffic to the case studies and how-to materials pages.

being deployed. For example, '@Verdade', a newspaper in Mozambique with a readership of approximately 100,000, used the toolkit's how-to sections on using social media to engage audiences and mobile reporting preparedness as part of its training program with journalists in the build-up to the December 2011 mayoral elections.³

It remains relatively early in the project's lifecycle to assess the toolkit's ability to reach some of its broader, more ambitious goals to expand access to knowledge about the use of mobile technology, reduce learning costs, and accelerate the effective use of deploying mobile technology. However, there is initial evidence to suggest that the toolkit is poised to further impact how citizen media organizations use mobile phones to deliver news and information, and it has been successful in building key partnerships to facilitate the use of mobile technology by news organizations.

Lessons Learned

The Mobile Media Toolkit project provides a useful set of lessons for others engaged in building shared resources and infrastructure to support journalists in emerging fields of technology.

- **Understanding User Needs:** One factor that contributed to the early success of the Mobile Media Toolkit was the amount of background research done at the outset of the project to help ensure that the final toolkit would be as useful as possible to the target audience. Project staff conducted a gap analysis in areas where relevant tools were missing and tested tools within various categories (e.g. mobile tools for collecting information, engaging audiences and securing mobile communications) to understand their suitability for usage by journalists.

- **Securing Data on Efficacy from Users:** One of the challenges the project has faced has been obtaining information from news organizations about how effective various mobile tools and approaches have proved to be within their organizations. Many organizations do not systematically map the effectiveness of techniques they've employed and, in instances where they do, are often not willing to share the data.
- **Building Effective Outreach:** Efforts by staff to present the toolkit at a variety of professional workshops, including a training workshop for South African journalists on mobile media and conferences such as Highway Africa and Global Voices, helped to market the Mobile Media Toolkit. These conferences also provided staff with leads on news organizations experimenting with disseminating news on mobile phones, which provided useful information for inclusion in the toolkit's resources. Additionally, high profile partnerships with USAID and Al Jazeera helped increase the visibility of MobileActive's work and the toolkit resources.

³ In the build up to the 2009 presidential elections, the newspaper disseminated civic education and voting information to mobile subscribers. A 2010 study on mobile and civic education concluded that the @Verdade's efforts had been particularly effective in increasing voter turnout among women in the elections. See Aker, J., Collier, P., and Vincente, P. (2010) 'Voter Education Using Cell Phones: Evidence from a Field Experiment in Mozambique', paper prepared for the International Growth Center.



Experiments in Media Innovation: A Look at the 2009 Knight News Challenge Winners



CMS Upload Utility

Project	Grantee	Innovation	Grant
CMS Upload Utility	Joe Boydston	A web-based utility to help newsrooms upload content in batches	\$10,600

This 2009 Knight News Challenge project by Joe Boydston, a new media expert at a small newspaper group in Northern California, created a web-based utility to help small newspapers upload, reformat, and publish news content to the web in batches (as opposed to individual stories). Small news organizations can face technical barriers that prevent them from being able to publish their legacy news content online, which often results in text files containing reports for print editions left on hard drives of computers. The CMS Upload Utility project was designed to address some of those barriers by creating free, easy-to-use software that would allow news organizations to send batches of stories to be formatted and published to the web.

The Innovation

CMS Upload Utility was created to help small newspapers with limited budgets and older technology to upload text files online that were developed for their print editions. Although these newspapers often have content management systems (CMS) in place that allow them to organize and publish stories online, it can be time-intensive and tedious to upload content that pre-dated their CMS software and often requires newsrooms to copy and paste the text of individual stories into their web-based CMS. The project team developed software to allow news organizations to upload content in batches (as opposed to one story at a time) into a web-based database, reducing the time and effort required to get legacy content onto the web.

Implementation

Boydston had originally planned to develop both a desktop and web-based application that were compatible with four CMS platforms: WordPress, Mambo, Joomla, and Drupal. A desktop-based proof-of-concept design was initially released to the public in June 2009. However, after conducting usability tests and consulting potential users, Boydston decided that a web-based application would make more sense for both the project itself and for the end user.

Boydston noted several primary advantages of a web-based version of the platform. It was cheaper and easier to maintain. It was also easier to quantify usage patterns by the number, source location, and date of stories uploaded. And it was more efficient to have one web-based version that worked across CMS platforms rather than having separate desktop-based versions for each platform. Thus, the next iteration of the software, released in June of 2010, was web-based, meaning that users did not have to download any software to run the utility. Boydston developed the software to be compatible with WordPress and Drupal but eliminated support for Joomla and Mambo because he did not work with any sites that were using those platforms. He also added support for Blogger, Moveable Type, and Media Wiki.

Although the project did not have a formal budget for marketing, Boydston approached two associations,

the California Newspaper Publishers Association and Suburban Newspapers of America, to inform them of his project. He demonstrated the tool at some of the associations' events and produced articles in their newsletters about the software.

Reach and Outcomes

As of November 2010, 415 users had registered accounts with the web-based utility and 4,116 documents had been uploaded to the site. Eighty percent of all documents uploaded at that time came from 12 users. As of February 2012, there were 498 registered users. Most of the news organizations that have used the tool are part of the California Newspaper Publishers Association and the Local Media association (formerly the Suburban Newspapers of America), with circulations under 25,000. Since February 2012 there has been limited activity on CMS Upload Utility and not much evidence of further adoption. Boydston no longer actively promotes or makes enhancements to the utility, but occasionally provides hands-on assistance for users as requested.

The utility has been useful for some smaller newspapers by helping them create online archives of their pre-digital stories. However, the overall impact of CMS Upload Utility has been limited due to the rapid tech advances that took place during the project's life. The need for the utility as a way to get text files onto the web receded as it became easier for news organizations to upload content through database-driven websites and more commonplace for content to begin its lifecycle in digital format.

Additionally, news organizations tended to use the CMS Upload Utility over the course of a few weeks to upload their archival content and then did not access it again. This pattern was different than what the project team expected. Boydston had thought that news organizations would go back to the tool multiple times to transfer additional files, but instead it generally served only a one-time purpose for them.

To meet the demands of evolving user needs, Boydston developed a suite of 18 different WordPress plugins designed to aid newspapers in publishing their content online. Many of these additional plugins were developed, inspired and based on the CMS utility concepts. As of July 2012, these WordPress applications have been downloaded 10,237 times. Boydston also started the Newspaper Foundation, a nonprofit that advocates for and facilitates the use of open source software at newspapers and hosts the WordPress plugins at no charge for community newspapers. So far, just over 50 publishers have signed up or expressed interest in the WordPress plugins via NewspaperFoundation.org's hosted system. Of these, seven newspapers and two magazines are actively transitioning toward using WordPress as their content management system.

Lessons Learned

The challenges CMS Upload Utility had in securing adoption among newsrooms and the changes Boydston made to the product over time contain useful insights for others working on creating tools for intended use by news organizations.

- **Cultural and Tech Barriers:** One of the biggest challenges faced by the project was the extent to which cultural and technological barriers initially prevented newspapers from adopting the tool. At the outset of the project, Boydston assumed that the utility would benefit anyone in publishing with text files that needed to be transferred, particularly small newspapers. But it turned out that small newspapers didn't have the capacity to get the tool up and running even though the software was fairly easy to use. All of the users of the tool were members of larger newspaper chains that had greater technological capacity. Additionally, and perhaps more significantly, few staff members from small newspapers saw the need for the tool. As Boydston noted, "there is sometimes an animosity that arises between newspaper staff and new people who come in trying to solve problems. There was often the sense among the newspaper staff of 'I've been doing this for years and you kids are coming in with this tool... oftentimes, they didn't see there being a problem in the first place."
- **Pivoting to Meet Needs:** The project was altered various times in the search for ways to help news organizations reformat and publish their legacy content to the web. The first involved dropping the initial desktop-based proof of concept design (released in June 2009) to focus on a web-based application (released in 2010), which meant users didn't have to download any software to run the utility. The second major shift came in October 2010 with Boydston's decision to stop actively maintaining the CMS Upload utility in favor of creating a series of WordPress plugins to aid newspapers in publishing their content online. The shift to re-envision the product – moving away from creating a utility to feed legacy content onto the web to a series of WordPress tools – was the direct result of feedback from potential users and recognition of the difficulties of legacy content management systems in local newsrooms.



Experiments in Media Innovation: A Look at the 2009 Knight News Challenge Winners



Councilpedia

Project	Grantee	Innovation	Grant
Councilpedia	Citizens Union Foundation of the City of New York, Gotham Gazette	A publicly available online wiki that aggregates and synthesizes campaign fundraising sources for New York City Council members	\$250,000

This Knight News Challenge project is run by Citizens Union Foundation of the City of New York, a non-partisan civic organization, and its daily publication on city politics, the Gotham Gazette. Councilpedia is a publicly available wiki that aggregates and synthesizes information about the campaign fundraising sources of New York City Council members.

New York City has an open campaign finance system that details information on campaign funds donated to elected city officials. Both journalists and the public have used these records in the past but have found them hard to work with. Councilpedia was created to solve this problem by providing the public with aggregated and synthesized information and user-generated content about New York City Council members' campaign funding and legislative actions.

The Innovation

Councilpedia functions as a wiki, which allows members of the public to add information (fact-checked by Gotham Gazette staff) about city officials. For example, users can search for politicians' campaign donations or the bills they have sponsored and add information, such as whether a council member introduced legislation at the urging of a particular union. The user can search for a particular council member, click on his/her name, and view a

brief biography of that person and a table listing known contributors to their campaign, including the contributors' occupation, employer, and total donation amount.

The site also includes synthesized data noting how much money for each council member has come from different sectors, such as labor or real estate, how much has come from large donations, and how much has come from local and non-local sources. To view this information, the user can click on sub-categories within a particular council member's biography, such as "real estate contributions 2009" or "attorneys 2009", and see a listing of all contributors to the individual's campaign from that sector.

Implementation

Early on, the site's design as a wiki posed challenges for project staff. Open source options for wiki software were limited at the time the project was getting off the ground. Project staff members selected the MediaWiki platform, used by Wikipedia, as the open source software on which to build Councilpedia.¹

Although project staff felt that MediaWiki was the best option at the time, it proved to have a number of limitations and was not as nimble as they hoped it would be in allowing them to process the vast amount of government data they had to put online. Councilpedia staff

¹ Source: http://www.opensource-it.com/open_source_wiki_software.

members were able to improvise some solutions, but it proved impossible to implement other desired functions, particularly automated functions such as the scraping of live data and categorization of campaign contributions. Further, the method for adding user comments was limited by the MediaWiki platform; staff had envisioned a “track changes” approach that would allow users to follow the progression of comments, but this was not possible within the software.

The project also experienced several other challenges that delayed the site’s launch by nearly a year. Staff had to reenter a great deal of campaign data by hand due to a problem with the Councilpedia software code that overwrote some information on the site when users intended to simply add new information. Additionally, two project staff took new jobs, which caused interruptions until replacements were found. The initial launch date was April 2010, but the site did not go live until February 2011.

Reach and Outcomes

The Councilpedia project team used various forms of outreach to promote the project. The team contacted over 300 journalists working across different New York newspapers, blogs, television, and radio stations and introduced them to the platform. They also used the Gotham Gazette to expose Councilpedia to its readers and highlighted the project on its home page.

On the day that the site was launched, it received 9,844 page views, and that number increased to 14,306 over the first week of its launch. The site averaged 20,000 monthly page views and 4,300 monthly unique visitors over the first two months of its launch, but usage slowed after that. The site currently averages less than 10,000 page views and 2,600 unique visitors per month.

In May 2011, there were 105 ‘readers’ registered as Councilpedia users, meaning that they were eligible to contribute content to the site. That number climbed to 925 by the end of 2011. However, very few readers actually contributed. In total, less than 30 readers posted information to the wiki. As a result, Councilpedia has primarily been used as a reference site where people read the information provided but do not actively contribute to the database.

The Councilpedia project aimed to encourage richer coverage of local political campaigns and greater public participation through crowdsourcing and citizen journalism with the ultimate goal of creating a better informed and more engaged citizenry and a more open and transparent government. But because of the delays in implementation of the project and limited user-generated content, Councilpedia has not resulted in many broader investigations and published stories by the Gotham Gazette or other mainstream media organizations. There have been

only a few instances of reporters using information on Councilpedia for their stories; the site was used in articles on city officials to get campaigns’ financial donation data by various Gotham Gazette reporters and was cited in a New York Post article as the source of information for one city council member’s salary, proposed legislation, and bills signed into law. Other blogs and news sites that have linked to Councilpedia include CapitolTonight.com (Albany), NY1.com, Gothamist and Harlem World.

Gotham Gazette staff hopes that Councilpedia will garner greater attention by readers and contributors as New York City ramps up for city council elections in 2013. As reporters and the public become more interested in city council races, staff expects that individuals will be more eager to seek out information on council members’ voting history and fundraising efforts.

Lessons Learned

The challenges Councilpedia has faced in building their wiki platform and generating and sustaining engagement among readers and contributors provides a useful set of lessons:

- **Designing with Open Source Tools in Mind:** Councilpedia staff experienced a number of unanticipated challenges tied to what proved to be the limited functionality of MediaWiki, the open source software selected for the project. When offering advice to other projects looking to implement something similar, Gail Robinson of Councilpedia made this suggestion: “when using an available open source software such as MediaWiki, one should be cognizant of the limitations of that software from the beginning.... we had some great ideas for Councilpedia that did not happen because of MediaWiki’s many limitations.” It is critical to research a project’s best available options for software and design a tool to function within the chosen software’s limitations in order to avoid unanticipated delays and challenges.
- **The Manual Gap between Data and Insight:** The Councilpedia project also experienced challenges related to the time it took to gather campaign data and make it meaningful and useful for readers. Although the project’s staff was able to automate some of that process by taking data directly from the city’s campaign finance board site, in the end the only way to determine meaningful connections in the data set was to hand code the information. For example, project staff had to manually classify the industries of each campaign donor by researching the donor or donor’s employer. This proved to be a time-consuming process and over 875 hours of staff and intern time were spent adding this initial information into the system. As the 2013 elections ramp up, campaign finance data will be coming in increasingly quickly, and project staff is concerned about their capacity to enter these data.

- **Creating Incentives for User Contributions:** Although Councilpedia was intended to function as a wiki, very few individuals have contributed information to the platform. Part of the challenge was that the project did not design a systematic outreach campaign to solicit user-contributions. Delays in implementation meant that at the time of the wiki's launch, Councilpedia staff were unable to draw on the extra capacity they had intended to use in the form of summer interns to do

much of the on the ground outreach and marketing. The timing of the project's launch, in between a four year local election cycle, also meant there was limited momentum and campaign activity on which to build interest for the wiki platform. Additionally, unlike other robust user-generated sites, Councilpedia did not create a deliberate way to nurture and retain contributors through activities such as in-person meet ups and rewards for lead users.



Experiments in Media Innovation: A Look at the 2009 Knight News Challenge Winners



MediaBugs

Project	Grantee	Innovation	Grant
MediaBugs	Scott Rosenberg	A service that allows users to publicly document errors they find in the news and submit those reports to the news organization for correction	\$335,000

This Knight News Challenge project, launched by former San Francisco Examiner and Salon.com journalist and author Scott Rosenberg, sought to improve fact checking and error correction in news reporting. Research conducted by MediaBugs, including discussions with advisers and reviews of the work of field experts, such as Poynter media critic Craig Silverman and University of Oregon Professor Scott Maier, found that reporters made many more errors than they suspected. Moreover, news organizations' correction policies often made it difficult for readers to inform the organization about an error or know what action the organization took in response. Concerned with this issue and the public's increasing distrust of the media, MediaBugs set out to improve the transparency and responsiveness of news organizations' error correction practices.

The Innovation

Through the MediaBugs website, individuals are able to publicly document errors ("bugs") they find in the news and submit those for correction. These errors are posted on the MediaBugs site, and other users are invited to provide additional information or post comments about the errors. Once an error is reported, MediaBugs notifies the media outlet involved and tries to correct the error by facilitating productive discussions between journalists and the public. It also keeps a public log of whether an error is under discussion, responded to, corrected, withdrawn or unresolved. The process ultimately is designed to make the press more accountable for what it publishes and give the public more confidence in the integrity of its reportage.

Implementation

When MediaBugs launched in April 2010, it focused on attracting media partners to adopt its service in the San Francisco Bay Area, where Rosenberg had numerous contacts from his time at the San Francisco Examiner and Salon.com. The project found, however, that it had tremendous difficulty in getting news organizations to adopt its solution. One primary reason was that news organizations were hesitant to link to a site outside their domain and preferred to rely on in-house solutions. Some news organizations that already had an in-house corrections policy felt that MediaBugs offered a solution to a question that they had already answered – it "didn't seem urgent enough," according to Jeanne Carstensen at the Bay Citizen. However, given limited time and ever-declining organizational resources, creating a robust in-house solution to facilitate error reporting has rarely been a priority for news organizations.

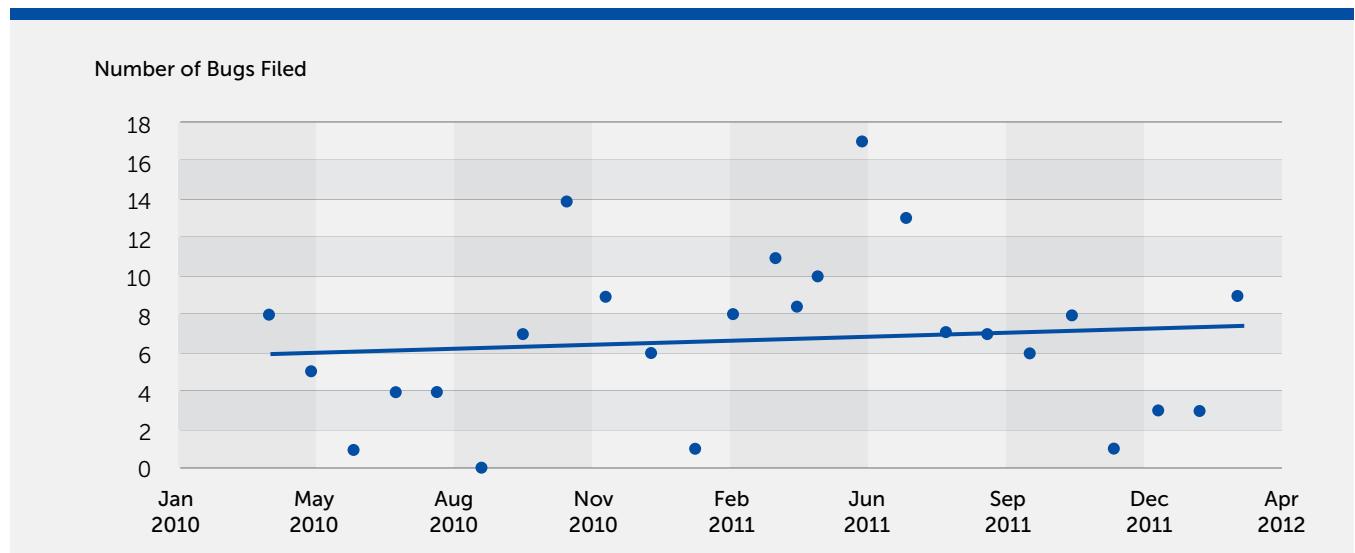
Faced with initial resistance from Bay Area news organizations and the challenges of limited adoption by news-media websites, MediaBugs took a two-pronged approach to increase the use of its service. In October 2010, the project opened up its error tracking software to report on news organizations across the US. The following month, it created a separate advocacy effort to get news organizations to commit to the simple goal of including a "Report an Error" link on every news page of their site. The link would be designed by the news organizations themselves and allow readers to easily submit error reports, even if it did not involve the use of MediaBugs' service.

Reach and Outcomes

To date MediaBugs has struggled to gain traction among news organizations with limited adoption of its error correcting service. As of March 2012, 162 bugs had been filed on the site, at an average of seven a month

(see Exhibit 3.) The most prominent news organizations that use MediaBugs service include: the Yaquina Wavelength, a local newspaper in Lincoln County, Oregon, and the Runner, the student paper of Kwantlen Polytechnic University in British Columbia, Canada.

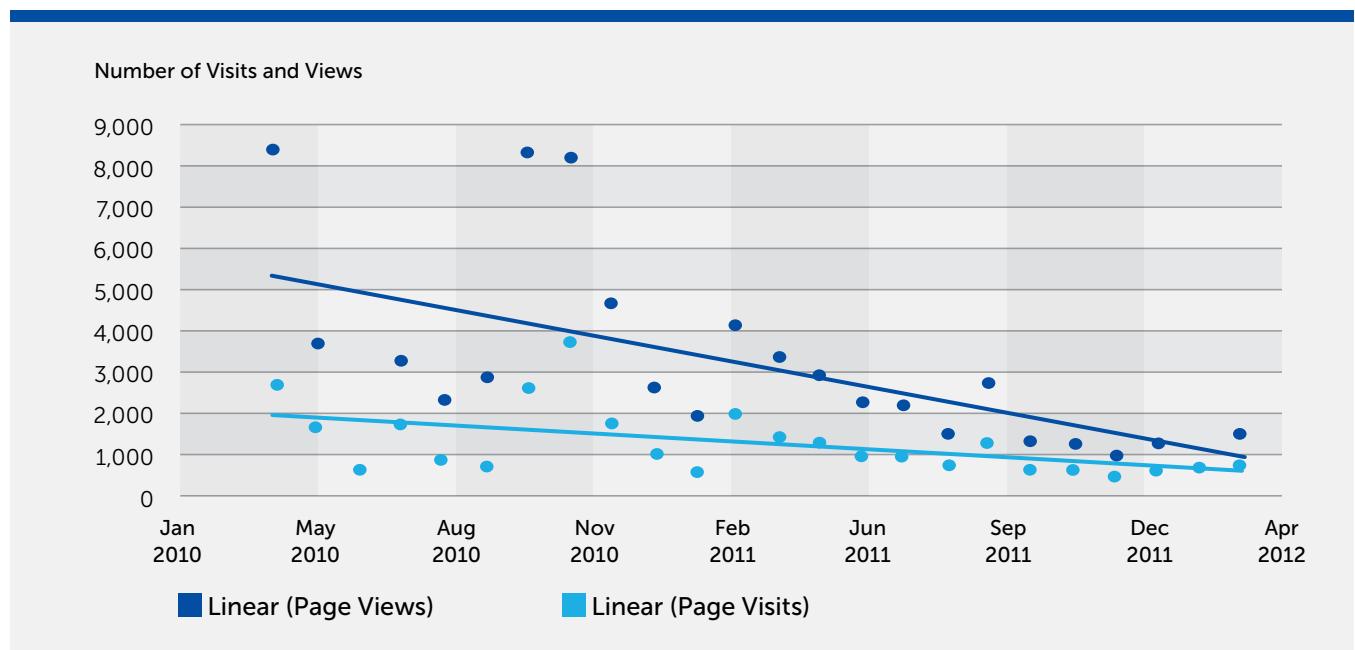
Exhibit 3: Errors Reported on MediaBugs



Since the project's launch, the site has also faced difficulties with declining activity. The number of monthly unique visitors and page views to the MediaBugs site has

decreased from nearly 3,000 uniques and over 8,000 page views in early 2010 to less than a 1,000 uniques and under 2,000 page views in March 2012.

Exhibit 4: MediaBugs Monthly Reach Data



Note: This graph displays trend lines drawn from a regression analysis of the raw data.

MediaBugs continues to operate its site and offer a widget and WordPress plugin that individual bloggers and news organizations can use to incorporate MediaBugs into their sites. There has been minimal adoption of the widget, with less than 10 organizations using it on their site. The WordPress plugin (released in February 2011), has been more popular but has not achieved significant adoption. The plugin has been downloaded 182 times by news organizations, such as the Wavelength, the Runner, and a handful of blogs.

While MediaBugs has faced challenges as a service, the project has contributed to an important though oftentimes ignored conversation about the transparency of news error reporting and correction. The project's advocacy effort – allowing organizations to simply commit to placing a "Report an Error" link on every news page of their sites – led to the creation of the Report an Error Alliance, a separate campaign created by Scott Rosenberg and Craig Silverman to promote the general practice of error reporting.¹ News organizations that join the Alliance have to publically commit to implementing some version of a "Report an Error" feature on their websites. News organizations decide for themselves how a "Report an Error" button functions, e.g. whether it links to the MediaBugs site or its widget, or simply generates a form or an email to send directly to the news organization itself. Currently, nine organizations are members of the Alliance, including The Washington Post, Salon.com, Poynter.org, the Toronto Star, NewsTrust, MediaShift, the Saint Augustine Underground, the Missourian and the Ledger-Enquirer in Columbus, Ohio.

Lessons Learned

The MediaBugs project has struggled to gain much traction for its error correct service. Initial efforts to get news organizations to use the MediaBugs software to facilitate error reporting in the Bay Area did not work, and expanding the effort nationwide has not led to greater use of the platform except by a handful of small newspapers and bloggers. The Report an Error Alliance campaign has been marginally more successful in raising awareness, but as of yet has not seen significant uptake by news organizations.

MediaBugs' experiment in launching a service that required shifts in newsroom practices provides useful lessons for other media startups:

- **A Pain Point Not Visible to Targeted Adopters:** News sites that already had in-house corrections systems felt MediaBugs offered a solution to an issue they had already addressed. Even where existing practices were suboptimal, this wasn't seen as an important enough issue among newsrooms' competing priorities for survival to commit time and resources to it. Additionally, Scott Rosenberg tried to pitch MediaBugs to news organizations as a time-saving tool – rather than combing social media and comment threads for errors, they would all be reported in one place – but this problem still wasn't large enough to attract the attention of newsrooms.
- **Interfering with a Prized Relationship:** News organizations were hesitant to link to an outside site like MediaBugs that mediated their relationship with their audience, and preferred instead to rely on in-house solutions that they believed allowed them to maintain direct contact with their readers.
- **Centralized Solutions in a Distributed World:** With all the disruption happening in tech and social media, getting traction for MediaBugs' centralized platform and data repository – offering a single website to serve multiple disparate partners who already operate their own sites – was a hard proposition, even though MediaBugs wasn't competing with commercial websites for traffic or eyeballs.
- **Fishing with a Large Net:** Faced with limited adoption in its target market, the Bay Area, MediaBugs expanded its error tracking services to report on news sites across the US. While an opportunistic response to attract new news organizations, this expansion limited MediaBugs' ability to engage in the kinds of high-touch outreach that's often needed to cultivate and secure marquee partners for innovations that involve shifts in newsroom practices and culture.

¹ The alliance is organizationally distinct from MediaBugs, though it shares key personnel and similar objectives.



Experiments in Media Innovation: A Look at the 2009 Knight News Challenge Winners



City Circles

Project	Grantee	Innovation	Grant
City Circles	Adam Klawonn	A site that connects residents with local businesses surrounding the light-rail line in Phoenix and provides news and information about communities along the rail	\$100,700

The City Circles project, run by Adam Klawonn, an independent journalist and freelance writer, developed a website to deliver news and information tied to fixed points along the light rail line that runs through the city of Phoenix. Klawonn's project experimented with using new media and the city's new rail line (that opened in December of 2008) as means for providing commuters and other residents of Phoenix with a greater sense of community in their city.

The Innovation

City Circles was designed to give commuters and other city residents an easy way to find information about neighborhoods along the Phoenix Metro Light Rail line. The project developed a web-based publishing platform and a location-based mobile app for organizing and geocoding information around points of interest for individuals who either ride the light rail, live by it or have a business within five blocks of the tracks.

Implementation

The original plan for the project was to develop a general website alongside one formatted for mobile phones. Project staff created both of these sites, but the project did not unfold as planned. It took much longer than expected to find a computer programmer, which delayed the project start by about nine months.

In March 2010, the main City Circles website was released. The same month, project staff began developing podcasts with the information available on the website so users could download and listen to light rail information on the go. A total of 9 podcasts were created between April and July of 2010. To assist with creating new functions and features for the site, City Circles contracted with a local technology company, Integrum Technologies, to build a test suite – a closed environment where other developers (outside the City Circles team) could develop and test new features as part of the project's code with the approval of the City Circles "master" developer.

As the tech space rapidly evolved even during the short life of the project, the City Circles team refocused their efforts on creating an iPhone app. In July 2011, an app was released featuring arrival times for the light rail by station (the project was able to cajole the local transit authority into providing complete schedule information for train arrival times and departures) and showing all public facilities and businesses within five blocks of each station.

Project staff experimented with a few ways to market the tool and attract users, such as through Facebook and Twitter and by holding in-person events along the rail line. An e-newsletter was started, and the team also distributed palm cards to commuters featuring a train map and a description of City Circles' services. Partnerships were also built with local businesses, local media, and independent business groups to generate support for the project, including Local First Arizona (a nonprofit statewide

merchants association), the Arizona State University Young Alumni Association (which served the project's target demographic), Chambers of Commerce along the rail line, and the Downtown Tempe Community (a nonprofit group that partners with the city of Tempe and promotes local businesses).

Reach and Outcomes

City Circles struggled to gain traction and received little uptake among Phoenix commuters and residents. The project's original goal was to have 25 percent of light rail riders become regular users of City Circles (approximately 9,000 people) and to ultimately encourage a new level of civic involvement among Phoenix residents. Following the site's launch, City Circles averaged only 90 visits and 314 page views a month between March 2010 and October 2010, with the average user spending just over 4 minutes on the site. As of October 2010, project staff reported having less than 70 registered users of City Circles.

City Circles had a hard time gaining traction from commuters using the rail, but it was slightly more successful with college students and suburbanites using the train to seek entertainment in downtown Phoenix and Tempe, Arizona. To capitalize on this, the team organized "crawls" along the light-rail route with itineraries and exclusive promotions at participating bars, restaurants and retail stores near the train, which helped improve their visibility with light rail passengers and small businesses around the stations.

The local events City Circles held to generate support for the site were mixed in terms of the level of turnout. In April 2010, the project held an "urban wine walk" along the rail line in partnership with 11 restaurants that was well attended, drawing about 120 people. A similar event held in summer in partnership with 5 local merchants had a much smaller turnout of about 20 to 30 people.

Data available at the time of this report suggest that the City Circles iPhone app has had very limited interest as well, with only a handful of comment streams about it on Yelp and a couple of reviews in the iTunes store.

Lessons Learned

City Circles has had limited adoption since its launch. There are a number of important lessons to be drawn from the project's experience:

- **Building a Skill Tech Team:** One of the main challenges the project faced in getting up and running was finding a skilled programmer. It took nine months to find a programmer, and the project lost a lot of momentum during that time. Klawonn noted that he had anticipated more support from Knight in finding a programmer, and had built this into the project timeline.
- **Mobile First:** The City Circles team was solely focused on building an audience for its web-based publishing platform for organizing and geocoding information around interest points for the Phoenix light rail community in its first year of operation. The assumption was that it would make sense to develop a general web version of City Circles that could then be easily translated and formatted for mobile phones. However, this focus on the web meant the team struggled to keep pace with the increasing use of mobile apps for providing users with location-based information. While the project tried to be nimble and adapt to the changing tech landscape by launching its own mobile app in July, it had already exhausted most of its budget and resources in developing its web version, which left little room for mobile app development and marketing.
- **The Challenges of Securing Local Merchant Partners:** The project team had difficulty building the relationships it had planned to with local merchants and associations. Securing partnerships with local businesses required a great deal of effort, including multiple in-person visits, which consumed much of the project team's time and was not easily scalable. The very problem that City Circles set out to address (building a sense of community and neighborhood feel in Phoenix) also probably contributed to the difficulty the project had in reaching its goals. With local merchants dispersed throughout the city and lacking an overall sense of community with each other, it was likely more difficult to build their support for City Circles.



Experiments in Media Innovation: A Look at the 2009 Knight News Challenge Winners



Virtual Street Corners

Project	Grantee	Innovation	Grant
Virtual Street Corners	Boston Cyberarts, Inc.	A project to install screens and video conferencing cameras in storefronts to allow daily citizen newscasts and virtual discussions between two Boston neighborhoods	\$40,000

This Knight News Challenge project, run by John Ewing with Boston Cyberarts Inc., a nonprofit arts organization, used video conference technology installed in local storefronts to connect the residents of two very different neighborhoods in Boston: the mostly white and upscale Brookline and ethnically diverse and working class Roxbury. The rationale for the project was to bring two important cultural and historical hubs closer together.

Despite our increasing technological capacity in global communications, individuals predominantly interact day-to-day with others who are similar to them. Even within a single city, people from one neighborhood may have little understanding of what life is like for those living in a neighborhood just a few miles away. Virtual Street Corners sought to connect two neighborhoods in and around the city of Boston that historically have been relatively disconnected from each other.

The Innovation

Taking the 66 bus, Brookline and Roxbury are 20 minutes apart, yet Brookline, predominantly white with a large Jewish population, appears worlds away from Roxbury, a historically African-American neighborhood with a growing Hispanic community. The innovation at play in this project was not the creation of new technology, but rather the use of existing video conference equipment in public spaces to facilitate community connections. The cameras were

set up in the storefronts of two local shops near bus stops, allowing passersby in one neighborhood to see and talk to passersby in the other.

Implementation

For the month of June 2010, Virtual Street Corners connected the neighborhoods 24 hours a day, 7 days a week. The project evolved out of earlier participatory public art projects. In 2008, Ewing piloted a version of Virtual Street Corners in the same location but found that the lack of defined programming led to fairly cursory conversations between residents. This time, in addition to the spontaneous interactions between individuals, the project carried out a number of planned events, such as conversations between city council members from each neighborhood, a discussion about crime between policemen from each neighborhood, and speeches from prominent individuals, such as the governor of Massachusetts, Michael Dukakis.

Ewing also hired citizen journalists in each location to provide daily news reports in each neighborhood during the installation to help exchange information and increase the visibility of the project. In addition, the project recruited community organizers in each neighborhood who worked to secure community support for the initiative and find suitable sites for installing the video technology. Ewing also marketed his project by putting posters on donated spaces

on city buses (specifically on Route 66, which connected the two neighborhoods) and performing outreach to the press.

Virtual Street Corners experienced a number of challenges. It proved difficult to find a venue in Roxbury to host the video installation. Residents of the neighborhood questioned Ewing's motives and were cautious about having an outsider coming into the neighborhood. With the help of the local community organizer, the project was able to gain the trust of a local store owner who offered to host the installation and became a key supporter of the effort.

Once the installation was up and running, the implementation faced a variety of technical difficulties. Much of the high-end video equipment was donated, which helped save costs; however, when it came time for installation, Ewing was unfamiliar with the technology and lacked the support needed to troubleshoot problems as they arose. The resulting dropped video calls discouraged participation, and both planned and spontaneous interactions were often interrupted and had to be rescheduled or cancelled.

Similarly, technical difficulties affected the plan to have citizen journalists file daily video reports displayed simultaneously in both neighborhoods. For most of the installation, reports would only show on the screens in one neighborhood or the other, which interfered with the project's goal of allowing pedestrians to share the same experience and generate conversation between the communities.

Reach and Outcomes

The project garnered strong media attention, including an article on the front page of The Boston Globe on its opening day, a segment on the local PBS station and on Canadian Public Radio, and an article in Atlantic magazine. The project was also recognized as one of the top 50 public art projects in 2010 by Americans for the Arts.

Despite some of the technical challenges, a broad set of planned conversations took place on Virtual Street Corners. For example, city councilor counterparts from Roxbury and Brookline met each other; Peace in Focus, a group that uses cameras and photography to teach peace to teens, took photos and interviewed people from each location; and an imam from a mosque in Roxbury discussed religion and religious freedom with a rabbi in Brookline.

While all of these events contributed to the buzz about the project and supported social interaction between residents, there is no data available about the number of people who participated in the project or the type of conversations they had. The project's plan to monitor and capture conversations failed due to technical difficulties, which meant Ewing was only able to record residents interacting with the project during the last couple of days of the installation, even though the intention had been

to record all of it. Still, the project generated excitement among local residents and a few organizations have expressed interest in replicating the project elsewhere, including the Metropolitan Bay Transit Authority, Boston's public transit system. To date, however, there have not been any known replications of the project.

Lessons Learned

The project offers a number of lessons on designing live installations and the challenges of engaging users. Ewing also created a set of practical tips on how to manage public installations for others looking to implement similar efforts.¹

- **Troubleshooting Assistance for Installations:** Live installations are both technically demanding and highly resource intensive, which often necessitates access to resources and personnel who can help troubleshoot 24/7. Securing a high-speed internet connection and a consistent live videoconferencing presence proved technically challenging. Ewing did not have significant experience with the technical equipment used and was solely responsible for resetting audio and video connections when issues arose, which significantly affected the project's implementation.
- **Intensity of Commitment:** The project struggled to retain the handful of freelance journalists, photographers and teachers that acted as citizen reporters by providing daily stories on the installation. These individuals found it difficult to sustain such an intense commitment over the month-long project. Three of the six journalists recruited quit due to other longer term and higher paying commitments that took priority. Without sufficient money to retain skilled labor, the project found it difficult to compete with individuals' full-time employment obligations and family commitments.
- **Designing for Conversations:** The visual design of the interactive experience was critical to drawing people into the installation. The project paid attention to creating a 'window' into another neighborhood through the layout and presentation of the cameras and screen equipment so that passerby would be encouraged to view the installation as more than a simple video chat. In addition, Ewing experimented with various cues to generate social interaction. In the pilot phase of the project, Ewing favored an open-ended approach to the installation design that allowed people to talk about whatever they wished, without any specific prompts. This method, however, resulted in most people at a loss for what to say. In the end, Ewing posed specific questions on the platform and used the citizen journalist reports to spark conversations between residents. Future installations could experiment further with replaying previous clips of conversations and providing historical information to prompt discussions, and installing a periodic countdown next to the live screens (e.g. "we will be live in X minutes") to instill excitement.

¹ Available at www.pbsmediashift.org

Strengthening Media Innovation: Lessons for Knight Foundation

In addition to the lessons learned above, there were several instances where the 2009 grantees suggested Knight Foundation itself could learn from some of the winners' successes and travails to improve its support of media innovation.

Knight Foundation currently provides grantees with opportunities to connect with other News Challenge winners. This happens primarily at the annual MIT Civic Media Center conference held at the Media Lab but also through informal troubleshooting conversations with Foundation staff that can provide technical assistance. Grantees also report benefiting from the imprimatur of the Knight brand in increasing the visibility and credibility of their projects.

When surveyed, 2009 News Challenge winners were generally satisfied or very satisfied with Knight's grant negotiation and application process, but believed the foundation could do more to connect grantees with additional partners, resources and other news challenge projects. Above all, the grantees felt Knight Foundation could further use its own marketing, networking, and communications resources to help projects advance their goals.

Some of the grantees faced a number of unforeseen challenges in developing, marketing, and scaling their projects. Although funding from Knight Foundation was extremely important for each project, these grantees suggested the foundation could play a stronger role in anticipating and meeting these challenges by identifying common obstacles and providing connections to non-monetary resources, such as information about qualified software programmers that projects could potentially hire.

Knight Foundation could facilitate the successful implementation of Knight News Challenge projects by acting as a greater convener and networker of problem-solving ideas and resources. Some of the specific suggestions from grantees included:

- **Improved communication** with the foundation by providing opportunities for more regular communication between foundation staff and grantees through regular check-in calls to help stay up-to-date on the progress of winners' projects and troubleshoot as needed.
- **Attention to marketing needs** by helping grantees plan accordingly for sufficient marketing outreach as part of their project budgeting. Successful winners often emphasized the importance of having a dedicated marketing and travel budget so that project leaders could attend conferences to speak about their product and travel to newsrooms to connect directly with potential users of their product. Additionally, the foundation could further leverage its own networks and communications to assist grantees. Providing this kind of assistance is likely to be especially valuable for startup projects and grantees that do not have strong existing networks or institutional partners.
- **Networking with intentionality** beyond the annual MIT Civic Media meeting by considering additional ways the foundation could connect grantees through smaller gatherings based on common project interests or geography. This would provide a forum in which grantees could share questions and troubleshoot difficulties among the community of winners, and among the wider community of journalists and funders that Knight Foundation can reach. These gatherings, which the foundation has begun to already implement,⁶ could also be complemented by more targeted technical support for projects. The foundation, for example, could create a network of highly skilled programmers and other advisors to answer questions and offer rapid feedback to winners.

Regardless of additional support, grantees suggested that it would be helpful if Knight Foundation was very clear at the outset of each project about the kinds of support it could and would provide. Setting clear expectations at the very beginning of the project (or of the foundation's relationship with the project) will better prepare winners in terms of planning for unforeseen contingencies.

⁶ In April 2011, nine months after being named winners, the 2011 Knight News Challenge grantees gathered in Miami for an informal workshop to discuss progress made and ongoing challenges.