Road to Government 2.0

Technological Problems and Solutions for Transparency, Efficiency and Participation

A Report of the 2012 Aspen Institute Forum on Communications and Society

Greg Ferenstein, Rapporteur

THE ASPEN INSTITUTE

Communications and Society Program
Charles M. Firestone
Executive Director
Washington, D.C.
2013

To purchase additional copies of this report, please contact:

> The Aspen Institute
> Publications Office
> P.O. Box 222
> 109 Houghton Lab Lane
> Queenstown, Maryland 21658
> Phone: (410) 820-5326
> Fax: (410) 827-9174
> E-mail: publications@aspeninstitute.org

For all other inquiries, please contact:

> The Aspen Institute
> Communications and Society Program
> One Dupont Circle, NW
> Suite 700
> Washington, DC 20036
> Phone: (202) 736-5818
> Fax: (202) 467-0790

Charles M. Firestone	Patricia K. Kelly
Executive Director	*Assistant Director*

Contents

Foreword

The Aspen Institute 2012 Forum on Communications and Society (FOCAS) convened in August 2012 in Aspen, Colorado to discuss the movement towards open and innovative governance and develop tangible proposals and recommendations to increase transparency, promote smarter governance and enhance democracy. Sponsored by the John S. and James L. Knight Foundation, the roundtable consisted of media and technology experts, government officials, academics, leading NGO directors and up-and-coming technology innovators with expertise in designing platforms and applications for open governance systems.

This topic has critical importance. American democracy is premised on informed citizens engaging in self-governance. Yet today, many citizens are disenchanted with their governments at all levels and are uninterested or uninformed of the potential opportunities to utilize existing channels that encourage their participation. There is an increasing lack of trust in government, and traditionally closed government systems do not always facilitate active citizen participation. At the same time, governments themselves are strapped for cash and unable to respond to these tensions in constructive ways.

On a more encouraging note, however, there is now a burgeoning "open governance" movement to use information and communications technologies to foster accountability, transparency and trust, to open up traditionally closed systems and to transform governance. Collaborative technologies such as social media are now enabling two-way information channels between citizens and governments, helping to solve problems at the local, state and national levels. Digital technologies also have the potential to reduce costs to governments and citizens, and to create enormous opportunities for more transparent, participatory and responsive governments.

Consequently, we are starting to see some positive steps in the United States. Governments are releasing more and more machine readable data so that NGOs, entrepreneurial for-profits, software designers and the media can model new ways for opening up and using data. Federal and local governments are also working to expand their focus from solely providing government services to an emphasis on two-way communication and feedback loops with citizens.

But there is much work to be done. To advance the effort, the FOCAS Conference aimed to develop and design a series of tangible, meaningful solutions to immediate problems facing the open government movement. Participants chose to focus their pragmatic efforts in the following areas:

• Encourage citizens to get engaged in the democratic process through a common narrative;

• Create more active government service through smarter use of data;

• Develop innovative non-governmental approaches to traditionally governmental projects;

• Build a broad based awareness around data in order to spur demand around information; and

• Help governments procure non-traditional vendors at low dollar amounts.

The following report, written by rapporteur Greg Ferenstein, describes the origins of the open government movement, provides a discussion of meaningful open governance efforts around the world, and then addresses a number of serious shortcomings and subsequent solutions in open and participatory governance. He does an excellent job of synthesizing participant discussions and proposals at the FOCAS Forum.

Of particular note among the innovative proposals is the emerging importance of creating relatable narratives through transmedia storytelling. One of the biggest hurdles that the open government movement faces is communicating the availability of government services and encouraging active citizen engagement. A solution to this problem is to create interactive stories and micro-narratives around available data over multiple media platforms—a process known as transmedia. FOCAS participant Jeff Gomez, Starlight Runner Entertainment Chief Executive Officer, explained that utilizing transmedia techniques helps connect people to one another through a common narrative and provokes discussion, accessibility, realization and ultimately action. The goal is to empower citizens to become part of the story and engage with their communities and government. FOCAS participants agreed that moving forward this technique will be a critical component to advancing the open governance moment.

2012 FOCAS participants made considerable strides in developing tangible proposals for promoting smarter governance and transparency. But the question remains, how do we promote the acceptance, use

and refinement of these tools? Transmedia storytelling is one potential avenue, but other strategies are necessary for a significant impact. Thanks to the generous support of the John S. and James L. Knight Foundation, the 2012 FOCAS Forum was the first of three annual Forums dedicated to the topic of open governance. The 2013 and 2014 FOCAS Forum discussions, along with the accompanying reports, will build on the recommendations and creative solutions developed thus far and look to help answer the critical question of how to encourage the adoption and integration of these tools in citizens' lives.

Acknowledgments

I want to take this opportunity to thank our senior sponsor the John S. and James L. Knight Foundation for making this Forum possible. We give special thanks to John Bracken, Director of Knight's Media Innovation Group, for his leadership and commitment to developing the content of FOCAS, along with Foundation President and Chief Executive Officer Alberto Ibargüen, and Journalism and Media Innovation Vice President Michael Maness, for their leadership, insights and support essential to the success of the 2012 FOCAS. We thank Estonian President Toomas Hendrik Ilves for his valuable contributions during the Forum sessions. And thanks go to Livestream for once again streaming the FOCAS sessions on the web so that the public could participate in the discussions.

We would like to also express our gratitude to our rapporteur, Greg Ferenstein, for his intelligent account of the Forum discussions; and to our participants for their input and expertise on this complicated topic. Finally, I would like to thank the Communications and Society Program staff: Sarah Eppehimer, Senior Project Manager, for her production and management of the Forum, as well her contributions editing this report; Peter Keefer, Digital Media Strategist for his help with the communications aspects of the Forum; and Assistant Director Tricia Kelly for her work to bring this report to fruition.

<div align="right">

Charles M. Firestone

Executive Director

Communications and Society Program

The Aspen Institute

February 2013

</div>

ROAD TO GOVERNMENT 2.0

TECHNOLOGICAL PROBLEMS AND SOLUTIONS FOR TRANSPARENCY, EFFICIENCY AND PARTICIPATION

Greg Ferenstein

ROAD TO GOVERNMENT 2.0
Technological Problems and Solutions for Transparency, Efficiency and Participation

A Report of the 2012 Aspen Institute
Forum on Communications and Society

"The next battle is going to be openness and data."
– Estonian President, Toomas Hendrik Ilves

Technology has profoundly changed the way businesses interact with customers: It helps predict the needs of a consumer before they are even aware they want a product, it allows users to order products from the convenience of a mobile phone, and it can harness the collective IQ of the masses. Governments, too, offer citizens a variety of services.

Yet, the democratic process is much the same in the 21st century as it was in the 20th century. Many government services, from the Department of Motor Vehicles to voter registration, still require in-person visits and paper forms. There is no way to broadly solicit citizen expertise and opinion on proposed laws, and government contracts are still largely procured from expensive, well-connected vendors. Realizing the extraordinary potential of technological advancement, the Aspen Institute Communications and Society Program, with support from the John S. and James L. Knight Foundation, convened accomplished developers, transparency experts and leading government advocates to identify the problems and potential solutions to more open and participatory democracy.

"We have a bias," said Alberto Ibargüen, President and Chief Executive Officer of the John S. and James L. Knight Foundation, "that an informed and engaged citizenry is the most likely indicator of a well-functioning community." The overarching theme of the 2012 gathering of the Forum on Communication and Society (FOCAS) was that information transparency is the key to more innovative and responsive government. In Estonia, the tiny technological powerhouse of Eastern Europe, President Toomas Hendrik Ilves told the participants and online viewers of the conference that citizens in his country enjoy elec-

tronic voting and online medical records. From voting to free speech, merging technology with government allows more citizens to participate in their society in more meaningful ways.

"When it comes to open government, open data seems to be a prerequisite," said Ellen Miller, Co-Founder and Executive Director of the Sunlight Foundation, a transparency watchdog group that develops online tools for monitoring government activity. Opening government faces a variety of barriers. Authoritarian regimes have obvious objections to unfiltered communication among citizens and with the government. In developed nations, the fear of violating privacy and overcoming bureaucratic hurdles has hindered the adoption of more open technologies. Google Executive Chairman Eric Schmidt, noted, for instance, that many federal agencies still are not permitted to use Google Docs, an office suite commonly used by the private sector.

…information transparency is the key to more innovative and responsive government.

This report will briefly look at the existing state of digital governance, the historical impact of technology on democracy and then describe the problems identified by the FOCAS participants. It concludes with three main problem areas and several concrete recommendations:

- **Awareness and Media:** Even if governments can become more open and participatory, there is no guarantee that citizens will be aware or motivated to engage with new opportunities. Nor can we be sure that the media will want to inform their readers about important, but nonetheless unexciting bureaucratic developments. FOCAS participants recommended automatic alert systems for new services, empowering citizens to spread messages through new media channels and working with volunteer programmers who could develop media-friendly software for resource-starved journalists.

- **Procurement:** Many government contracts are won by a small group of well-connected vendors. Yet, in many cases, there are better solutions that are either free or more cheaply available from smaller startups. Participants recommended overhauling the procurement process to favor prize-based competitions and volunteer contributions.

- **Participation:** Policymakers, especially at the federal level, are often overwhelmed with feedback from citizens. Unfortunately, there is no reliable way to filter out the most helpful information or to understand which issues should be prioritized. FOCAS participants recommended developing a system where citizens can indicate their individual expertise and be notified when such advice is needed.

"When it comes to open government, open data seems to be a prerequisite." – *Ellen Miller*

Background

In order to become more efficient, transparent and participatory, governments around the world have embraced technology to varying degrees. According to the 2012 United Nations Survey on E-government,[1] nearly every nation on Earth has adopted some form of digital governance (except the Central African Republic, Guinea and Libya). At the most basic level, countries such as Niger offer online forums for citizen feedback. One rung higher on the digital governance index is a country such as Qatar, which offers printable forms, legal information and answers to common questions about public services.

At the top of the index, mostly in developed North American, European and Asian nations, governments are experimenting in fully online government services (Department of Motor Vehicles), e-participation (online voting and consultation) and open data (accessible medical records).

Such bleeding-edge experiments can generally be categorized as follows:

Crowdsourcing: "Crowdsourcing," a term coined by technology journalist Jeff Howe, is a process for aggregating contributions and expertise from a large population of individuals, most of whom have little knowledge or contact with one another. Perhaps the most famous crowdsourcing example is the online encyclopedia Wikipedia. Over 1.5 million people have contributed to the world's largest encyclopedia, mostly as one-off contributors or copy editors.[2] Such large-scale contribution would have been nonexistent before the era of ubiqui-

tous computing. In government, crowdsourcing has been used by the Obama administration to unearth wasteful spending,[3] giving the "Save Award" to government employees who can find the greatest unnecessary services or costs.

Crowdsourcing has its problems: Because contributions are voluntary, the participating population can be biased, if they even bother to show up in meaningful numbers. For instance, soon after assuming the presidency, President Barack Obama decided to experiment with a crowdsourced version of the interactive townhall and let users of the video-streaming site YouTube submit questions and vote on which ones he would answer. YouTube was overwhelmed with questions about marijuana legalization—thanks to an informal political interest group that has a disproportionately passionate user base online. "It's perceived by many that the forces of drug reform 'hijacked' the White House's Open for Questions platform. Indeed, decriminalization is nowhere to be found in any list of what Americans think are the most important issues facing the country," wrote Howe, in the aptly titled *Wired* article, "Obama and Crowdsourcing, A Failed Relationship?"[4]

In order for crowdsourcing to be successful, participants must be engaged and given direction.

E-participation: E-participation characterizes forms of direct democracy where citizens are somehow involved in the policymaking process, either through voting or giving specific advice to officials. For instance, in the Brazilian city of Bela Horizonte, citizens are given options on how to allocate the budget and vote online for their budget preferences. Very few countries have the technological capacity or political will power for online participation. For instance, Estonia is one of few countries to allow Internet voting, in part because it has a national ID system that safeguards against fraud. As will be discussed in more detail below, privacy concerns have prevented such an ID system in the United States and, consequently, have delayed electronic voting.

Additionally, experiments in collaborative legislation have had difficulty gaining the acceptance of policymakers. Brazil's first attempt at "wiki-legislation"—where citizens crafted a federal bill, much like crowds craft encyclopedia entries on Wikipedia—was met with lukewarm interest.[5] Policymakers felt citizens did not have the requisite legal background to craft sound legislation and did not support the

process. Subsequent trials have been more successful after Brazil incorporated more policy experts into the process.

E-participation holds the promise of year-round direct democracy, but it requires buy-in from both policymakers and citizens.

Civic Programmers: Governments have teamed up with civically minded computer science experts, who often work on a temporary or volunteer basis, to build out technological solutions. Perhaps the best known civic nonprofit is Code for America, a corps of programmers throughout the country who partner with governments on a temporary basis to find low-cost, easily implementable software solutions, mainly for placing governmental services online.

Unfortunately, traditional government procurement laws can preclude civic programmers' contributions. The U.S. House of Representatives, for instance, cannot accept voluntary contributions. Until Barack Obama's first Chief Technology Officer, Aneesh Chopra, amended procurement law for the executive branch, it was also illegal for the White House to accept such contributions.

Additionally, civic programmers who work full time still need a modicum of income to live and eat. Thus, such initiatives still need funding from either local governments or philanthropic donors.

Open Data: Governments warehouse valuable data sets, from weather data to veteran health records that can be utilized by individual citizens and researchers. After Korean Airlines flight 007 was shot down after wandering into Soviet airspace in 1983,[6] President Ronald Reagan liberated the U.S. government's Global Position System (GPS) data for civilian use. Today, GPS powers everything from smartphones to car navigation units, and supports a thriving industry of location-sensitive applications (geo-location apps).

Access alone is insufficient. Governments must release data in ways that can be easily downloaded and run by software. For instance, in order for citizens to track government spending reliably, they need all of the data in one place, rather than hidden throughout countless websites. The DATA Act, currently being considered by the Senate, would place all government spending online, in a format that could be downloaded and visualized by watchdog groups.

In part, transparency requires cultural shifts in governmental practices. The newly appointed federal Chief Information Officer set out guidelines directing executive agencies to develop policies to place all data in an accessible format. While there has been no active opposition to such requirements, getting agencies to reprioritize data can take time.

…transparency requires cultural shifts in governmental practices.

FOCAS 2012 was dedicated to figuring out how citizens and government agencies can advance open-data, civic programming, e-participation and crowdsourcing initiatives.

A Brief Philosophical Primer: Government 2.0 and Government as a Platform

Modern-day open-government initiatives, especially those related to services, have a philosophical foundation in the concept of Web 2.0, a term coined in the early 2000s. At that time, Internet websites were evolving from static pages of information run by administrators to interactive platforms where users could co-develop content and applications in collaboration with others. In his historical recount of the transformation, Tim O'Reilly, owner of O'Reilly Media and director of the first "Web 2.0" conference, notes that Web 2.0 companies had a few notable characteristics: They offered services instead of packaged software, were designed for participation, permitted scalable solutions, had hardware-agnostic software and harnessed the collective intelligence of the users.

The emergence of Wikipedia over the once-dominant Encyclopedia Britannica Online is an illustrative example of the Web 2.0 revolution. Users could co-develop entries in any browser for free. The now famous crowdsourced encyclopedia has thousands of more entries and categories than Britannica ever had (including classroom curricula and breaking news). And the software itself, designed by parent company Wikimedia, is now a popular software template for creating wikis for other uses, such as workplace collaboration.

A few years later, O'Reilly would go on to coin the phrase "Government as a Platform," wherein government could act as a hub of technological collaboration. Authors Daniel Lathrop and Laurel Ruma explain:[7]

> Government is, at bottom, a mechanism for collective action. We band together, make laws, pay taxes and build the institutions of government to manage problems that are too large for us individually and whose solution is in our common interest.
>
> Government 2.0, then, is the use of technology—especially the collaborative technologies at the heart of Web 2.0—to better solve collective problems at a city, state, national and international level…. How does government become an open platform that allows people inside and outside government to innovate? How do you design a system in which all of the outcomes aren't specified beforehand, but instead evolve through interactions between government and its citizens, as a service provider enabling its user community?

One popular incarnation of Government 2.0 is in liberating federal data. Todd Park, President Obama's second and current pick for Senior Technology Advisor, references O'Reilly in his new initiative to release health, energy and education data to the public. In explaining his approach to open data, Park said:[8]

> It's the notion of government taking a public good, which is this data—say weather data or the global-positioning system or health-related knowledge and information—making it available in electronic, computable form and having entrepreneurs and innovators of all stripes turn it into an unbelievable array of products and services that improve lives and create jobs.

Liberating data, alone, is only the first step. Users must be able to access and share it in a way that facilitates broad collaboration. To this end, Park and others in the open-government community, have adopted a philosophy of "human centric" design, which, according to leading design organization IDEO, is a "process [that] helps people

hear the needs of the people and communities they're designing for, create innovative approaches to meet these needs and deliver solutions that work in specific cultural and economic contexts."[9]

For instance, Park mandated that the federal government restructure the layout of federal websites around the expectations of users, rather than the layout of federal agencies. Instead of multiple websites for access to college scholarship and financial information, citizens looking for financial aid should be able to access one website. In this case, it is centered around the user, not the government.

Other notable examples of collaborative governance include data visualization. The city of Palo Alto augmented its transparent budgetary data with rich visualization tools[10] that allow citizens to craft their own ways of understanding the city's budget. Prior to these tools, data might sit collecting virtual dust since no one but the wonkiest of citizens bothered to figure out how to use them. And, even if a small population of users did look up the data, it could not be shared in a way that was accessible to a broad swath of the public.

Or, as IDEO Founder David Kelley once put it, user-centered design "really involves designing behavior and personality into products."[11]

Initiatives for greater online privacy in regards to accessing state services provide another telling example of government-as-a-platform. Instead of adopting a centralized identification system that houses all the login information for any particular user, the U.S. government chose to facilitate the creation of a "trust eco-system" of many online identity providers. For example, one popular identification system is OpenID, a nonprofit that partners with major websites to allow users to sign in with the exact same user name and password, without having to actually provide sensitive information to any of the thousands of websites that accept OpenID logins.

In order to give citizens choice and flexibility for different kinds of identification systems, President Obama's administration began an initiative for the government and the private sector to adopt best practices in security and broad acceptance of popular ID systems: the National Strategy for Trusted Identities in Cyberspace (NSTIC) program.

"Let's be clear: We're not talking about a national ID card," explained U.S. Commerce Secretary Gary Locke. "We're not talking about a government-controlled system."[12]

Last fall, the U.S. National Institute of Standards and Technology (NIST) awarded $9 million to five pilot programs,[13] such as the American Association of Motor Vehicle Administrators, to develop technologies and credentialing frameworks for a variety of common online services.

NSTIC is still in its infancy, but it will adopt a decentralized, collaborative approach to online security.

At FOCAS 2012, O'Reilly's concepts and the philosophy of accessible user engagement served as an often-cited philosophical foundation for the proposed projects and initiatives.

Notable Pockets of Innovation Around the World

The best of e-government is not reserved for the wealthiest nations. Around the world (and in the United States), governments have broken new ground in innovative democracy.

The best of e-government is not reserved for the wealthiest nations.

Estonia. Estonia is arguably the most wired country on Earth: It boasts national electronic medical records, a streamlined digital tax system for businesses and online voting. After liberation from the Soviet Union in 1991, the Estonian government made a concerted effort to redesign government around digital participation. President Ilves says they started with taxes and, by the end of the 1990s around 95 percent of citizens were filing online. In comparison, the IRS estimates that only 28 percent of Americans filed their taxes online in 2000.

However, "e-governance does not mean putting a 1040 taxation form into HTML," argues Ilves. "You have to stop thinking in terms of 19th century bureaucratic rules, where everything is on paper. That ends up meaning redesigning government and how you interact with people."

E-government is about designing systems around the user. For instance, one of the initiatives Ilves is most proud of and believes is the

most disruptive is e-health. In Estonia, "you own your own data," and can easily carry it from doctor to doctor. By giving users control of their data, it removes the "priest-like role of the doctor," he says. The United States is pursuing a similar system, with the so-called "Blue Button" initiative for a one-button download of all health records. Currently, Blue Button is only available to federal health recipients.

E-government is about designing systems around the user.

Additionally, Estonians can vote online. Ilves pointed out that in the last election, 25 percent of citizens voted online, more than any other country that also has e-voting (Switzerland, Latvia and Sweden). Since the early 2000s, the United States military has experimented with systems that would allow overseas service members to vote online, but the Pentagon scrapped it for security concerns.[14]

To get around security concerns, Estonia has a national identification system that acts as verification for voting. "The key issue is identification," Ilves suggests. In Estonia, the vendor is a privately owned business.

Estonia also has an e-schooling system, where any student can check on his or her homework online and any parent can log in as well.

Businesses also report positive experiences with Estonia's e-government. An article from *Der Spiegel* tells the story[15] of a Spaniard, Naphtali Peral, who set up his company in Estonia online in less than half a day, and he tells the newspaper that the record is a mere 18 minutes. Another businesswoman, Eva-Maria, raved about the online conveniences to the BBC[16] last year: "You can report your taxes online so you don't waste valuable time on forms and things. We don't owe our growth to the government but they haven't put any obstacles in our way."

Satisfied with his progress at home, Ilves told FOCAS attendees he is now exporting his mission of open government to nations around the world.

Brazil. Brazil is a leader in participatory governance. Since 2006, the landlocked city of Bela Horizonte has augmented its famous participatory-budgeting process through Internet voting. One-fourth of the participatory budget was allocated to votes coming from online. A platform rich in multimedia allowed citizens to discuss proposed funding options. Research shows that the experiment may result in a more egalitarian distribution of funds, for example, by allocating more funds to clean water and sewage services for poorer residents.[17]

United States Congress. In the United States Congress, Representative Darrell Issa (R-CA) introduced a crowdsourced legislative platform, "Project Madison," that encourages citizen experts to mark up draft bills. The bare-bones platform allows users to vote up and down amended language, which helps filter the best suggestions for his staff to review. According to FOCAS participant and Issa's digital lead, Seamus Kraft, the experiment is already a success. Participants suggested legally specific additions to an online piracy bill that helped the team address barriers that plagued the hotly contested Stop Online Piracy Act (SOPA).

White House. One of President Obama's first acts as president was the creation of a federal Chief Technology Officer (CTO) to oversee the implementation of creative open-government projects. The first CTO, Aneesh Chopra, worked in collaboration with White House Director of Digital Strategy and FOCAS participant Macon Phillips to develop a public-petitioning platform. "We The People" commits an official White House response to activists who gather enough online signatures (the current threshold is 25,000).

More recently, Chopra's successor, Todd Park, launched a fellows program to oversee five new federal projects:

1. A PayPal-like system for foreign aid, which facilitates electronic transfers to foreign countries that better track potential fraud.

2. Private-sector expansion of Blue Button, a one-click download of personal medical information for recipients of federal health care.

3. A small-business-friendly portal for procurement so that non-insiders can compete for government contracts.

4. A reorganization of federal websites around citizen needs, as opposed to organization by department.

5. More open-data sets related to education, energy and security.

California. In San Ramon, California, firefighters work with PulsePoint, a geolocation application that alerts available CPR-certified citizens in the community to an emergency in their area. The application is notable because it combines several key aspects of the ideal open-government project, such as mass-media appeal, crowdsourcing expertise, previously unknown data sets and mobile technology.

Key Problems and Solutions in Open and Participatory Governance

"I live in a world where innovation is considered obvious," said Google's Eric Schmidt, in his opening keynote dinner talk to the FOCAS participants. Governments, he argued, do not view technology with the same lens. There are no incentives for them to improve. In too many government agencies, "failure" is seen as a bad thing, whereas technologists and entrepreneurs tend to see failure as a learning opportunity. As a result, the risk-taking culture necessary for bold innovation does not exist in government.

In more extreme cases, such as authoritarian countries, contended Christine Outram, Director of City Innovation Group, the very implication of an opportunity to innovate is seen as an attack on the government. Concurring, President Ilves noted that opening up government has normative barriers: "It's sort of luddite tendencies, an unwillingness of government to take risk." In his experience, if the government and "cultural traditions" run counter to technological initiatives, the best software in the world will not do any good. People who do not have the same viewpoint will always find issues and legal reasons to shut the initiatives down.

…the risk-taking culture necessary for bold innovation does not exist in government.

With this background, FOCAS participants identified a number of key barriers to open and innovative governance, and proposed some creative solutions.

Public Awareness and Media Engagement

A running theme of the conference was that there is a lack of public awareness of technological initiatives and a general refusal by the media to report the availability of such services. "People don't know what information and services are available to them through the government when they need and want them," said Caitria O'Neill, Founder and Chief Executive Officer of Recovers.org. The marketing capability of the government is limited and thus must rely on the media to broadcast the creation of new services to their readers.

Jeff Smulyan, Chairman and Chief Executive Officer of EMMIS Communications, agreed that most journalists do not have the time to develop stories around data sets, especially given the mainstream media's shrinking budgets and diminished resources.

Solution 1: Media Use of Open Data

Media organizations have a ready-made platform for broadcasting information to a wide audience. At its best, journalists actually use the data in their own stories. *The Chicago Tribune*, for instance, launched a map-enabled Web application to help residents identify "crime on your block, in your community, along your commute and more," using the ChicagoCrime data set developed by FOCAS participant Brett Goldstein, Chief Information and Chief Data Officer in the city of Chicago. As media-reporting website MediaBistro described the *Tribune's* use of crime data:[18]

> It's responsive, it's overflowing with data and it's beautiful. The most recent project from *The Chicago Tribune* news apps team, Crime in Chicago, is a glowing example of the power of data in telling stories—and helping readers find their own stories in context of the big picture.

However, data journalism is time- and expertise-intensive, and most media outlets do not have the resources to afford such projects. Moreover, stories from data journalism do not have the same broad-based appeal as a divisive story about horse-race politics or a celebrity divorce scandal.

As a result, President Ilves pointed out that he is more apt to partner with a nongovernmental organization (NGO) versed in data sets to put the information to use. A good example of one such NGO is Ushahidi. Participant Juliana Rotich, Executive Director of Kenya-based Ushahidi, built an open-source tool for collecting and distributing critical information in a crisis.

During the Haiti earthquake, location reports of damage and stranded victims poured in from witnesses and were relayed to authorities and international rescue teams. Media outlets, from *The New York Times*[19] to *The Washington Post*,[20] have written extensively about Ushahidi's mapping tool, making it one of the few household names in open data. *The Washington Post* even used Ushahidi data to map cleanup efforts during a massive snow storm in 2012.

The technology to aggregate information from different sources and visualize it quickly is now open source, free and available to use. What makes data work for citizens is the response and the decisions that governments and other first-responders make based on the crowdsourced data. Cooperation between volunteer technical communities, first-responders like the Red Cross, and even telecommunications companies like Digicel in Haiti is what proved the Ushahidi software's utility during the Haiti earthquake.

Technology is only a small part of what is needed, the rest is what the noted author Kevin Kelley calls the Technium[21]—organizations that can form an end-to-end cooperative system that can be of service to citizens. If the citizen is at the heart of the design, even better. At the very least, listen to the crowd—it has wisdom and can be a key part of the solution, particularly in rural areas where access is a problem.

What makes data work for citizens is the response and the decisions that governments and other first-responders make…

Solution 2: Transmedia Storytelling

Still, getting resource-constrained media outlets to choose a story about open data or using open-data resources, rather than celebrities or political horse-race coverage, can be difficult. For Jeff Gomez, Chief Executive Officer of Starlight Runner Entertainment, the way to get attention for the "payload" of government services to the masses is through the power of narrative:

> For me, that missile is story. There are techniques to derive a story from data and to package this kind of information in the context of story. In the 1960s, there were adult- and continuing-education night courses scattered throughout Central and South America. But it was *"Simplemente Maria,"* a telenovela, where a down-and-out maid took night classes in order to improve her lot in life, that drove—suddenly—millions of women into these night courses (which had no women in them), fostering the women's movement into Central and South America.… It was a stunning change that was triggered by a soap opera.

Gomez is a leader in a new technique for conveying narratives called "transmedia." This process brings together a number of micro-narratives creating interactive stories over multiple media platforms that are relatable and inspiring. This process helps connect people to one another and provokes discussion, engagement and action. According to Gomez, the thesis of narrative storytelling is not about propaganda, but instead about "reconnecting lost, apathetic, disenfranchised people with their own foundational mythologies, or the values that espoused the preservation of community, the seeking of knowledge and the hunger for freedom common to all human beings."

Transmedia played an important role in empowering unlikely movements over the past year. Within the open-government community, a protest against the Stop Online Piracy Act (SOPA) galvanized a new community of technologists to become civically active, utilizing new forms of media. SOPA "was clearly a watershed moment," said Matt Lira, Director of New Media for House Majority Leader Eric Cantor. "Just as the people who comprised that community kind of awoke to new ways to engage with Congress, I think Congress as a whole awoke to the fact this audience is out there."[22]

SOPA was on the path to ratification in Congress, when a multi-platform campaign against the bill began to take root.[23] A website targeting singer and young pop sensation Justin Bieber first helped the bill gain notoriety. Bieber, who then had the most popular video of all time on YouTube,[24] began his career by uploading videos of himself singing popular songs. Critics of SOPA believed that strict rules in the bill would criminalize such activity as copyright infringement, dampening a growing cultural phenomenon of user-generated art.

Giving an otherwise dry intellectual property law a pop culture anchor helped the protest gain mainstream support. Bieber himself soon caught wind of the argument and called SOPA "ridiculous." The protest of the movement gained momentum, transforming websites into powerful media outlets. Google and Wikipedia both made statements against the bill by "blacking out" their front pages for a day, thus alerting many millions of users to the issue.

All together, the movement seized popular websites, social media and mainstream media with a combination of personalized narratives and the opportunity to become personally involved in the storytelling process. In the end, SOPA was defeated (referred to a committee without the expectations of vote).

These examples of transmedia narratives (multi-platform, personalized, interactive) have the potential to empower previously disconnected communities. During his FOCAS presentation, Gomez described the elements of successful transmedia and elaborated the concept post-conference with an eight-point checklist.

Elements of Successful Transmedia
An eight-point checklist

Jeff Gomez

Step 1. Situational Assessment: We begin with a crisis, and study its root causes, as well as the population's response to it. There are different types of proprietary data-gathering methodologies, which might be used to assess what peoples' perceptions of the issues are and determine what elements are interfering with their ability to respond effectively to the problem.

Step 2. Transmedia Messaging and Innovation: The data is then analyzed so that a core narrative structure can be designed that responds to this interference. The structure is built upon the foundation of this data, so that it will resonate with the majority of the population, and in part emerge organically from them. Elements that are causing interference can be addressed or removed, allowing for clean and engaging communication.

Step 3. Campaign Mythology Text: The core narrative structure in itself tends to be overly familiar and didactic. It can also be provocative, and can be perceived as a counter-narrative by those asserting power over the population. That is not the intention, as the purpose here is not to proliferate propaganda or assert a foreign narrative over the local narrative. So a story or series of stories, built over the core narrative structure, is created that may be analogous to the situation at hand, or otherwise illuminating, engaging and inspirational to the population. This "coating" over the core narrative structure is what we call a "mythology."

Step 4. Campaign Superstructure: In the 21st century, citizens access content from an array of traditional and digital platforms, each of which boasts strengths and weaknesses. So the campaign to introduce populations to vital narratives must be designed to take this into account, with unique story elements disseminated to each media touchpoint as a complete and compelling experience unto itself, yet adding together to form an even more compelling meta-experience. The campaign is designed at this juncture to leverage the partnerships, distribution platforms, talent and budget at hand.

Step 5. Engagement of Visionaries: Asserting our narratives upon foreign cultures can at best be dicey and has often ended in failure or even disaster. Because this narrative system has been derived from the culture, and is reflective of the fundamental human values and sensibilities of its population, we have a stronger foundation here. Now local talent, preferably the finest storytellers in the region, need to be engaged in order to tell the story as effectively as possible. While the core narrative must remain intact, talent will act as co-creators, interpreting the campaign mythology as they wish.

Step 6. Platform Determination & Rollout Design: The campaign's strategic alliances, media relations, sponsors and distribution methodologies are then formalized and the content is designed to best leverage each platform. A timetable is determined, budget established and production process locked in. A release schedule for the content is plotted, and feedback, social-media and dialog elements are designed. Just as importantly, a system of information resources and social services is developed, so that any resulting action taken by the population is supplemented with real world support (to the degree this is possible).

Step 7. Production & Implementation: The story or stories containing elements of the core narrative structure, fleshed out by the campaign mythology, are then produced. Talent is teamed with production firms, media companies, networks and telecommunications companies may assist. Grassroots talent such as street performers, local artists and performers go to work. Content is disseminated over all available traditional and digital media platforms, and feedback is immediately invited. A dialog is activated that validates and celebrates audience participation, and promotes the contribution user-generated content. Citizen storytelling is promoted, both in-community and inter-community, as well as in-country and internationally.

Step 8. Assessment & Arc 2: Throughout the campaign, data is collected on the fly, and impact is measured through a combination of media hits, real world and social-media buzz, activism and movement activation. Implementation is then followed up with a new situational assessment, applying proprietary data gathering methodologies to determine whether feelings have been changed and/or whether calls to action are being signaled or heard. What is learned from this data is then infused into adjustments made to the campaign mythology text and campaign infrastructure, and the process enters into a second or subsequent cycle.

Solution 3: Adopt-a-Data-Scientist

Governments around the country are jumping on the open-data bandwagon: Seattle, New York and Chicago all provide rich, download-able data sets waiting for public consumption. Unfortunately, as Tim Hwang, Founder and Managing Partner of Pacific Social Architecting Corporation, noted, "Even if a member of the public is interested in investigating a question, the costs of cleaning and processing data might be beyond the time and technical skills of a member of the general public."

The Chicago Tribune's crime data is a great model for using open data, but there needs to be a more a sustainable path for consistent use of public data. At FOCAS, a working group of participants proposed, as a solution, the "Adopt-a-Data-Scientist" program. As described:

> Promote the creation of local, self-organized groups of 20 members who will collectively "adopt" a local data scientist, data designer or statistician. Each individual "adopter" commits to donating $100 per month to form a monthly $2,000 stipend, which goes to pay the living expenses, research work and training expenses of their data scientist. These scientists are to be recruited from the communities themselves and are required to investigate questions of interest directed to them by the members collectively. These outputs might be reports, visualizations or even just dumps of data. The projects might only require a day of research to complete or a number of months. The scientists will serve at the pleasure of the members from month-to-month, with longer contracts being signed if desired.

Each data scientist will intern for a three-month residency program at the behest of the adopters. Having such a data-scientist on hand, it is imagined, would link the last mile in the process of open data: from transparency to consumption. "Rather than proselytize data writ large as something the general public should be interested in, the proper method is to teach by example. People become interested in data when it regularly and consistently provides them with insights which are immediately relevant," they suggested.

The group imagines that the Adopt-a-Data-Scientist program will start out with funding from nonprofits or a consortium of nonprofits, with the potential to grow into a self-funded program.

Solution 4: Alert System

Even with a heavy media push, many government services may slip by citizens, especially the underprivileged. The problem is, "I do not know what public information and services are available to me when I need and want them," suggested Caitria O'Neill.

Speaking for another FOCAS working group, O'Neill proposed an opt-in government alert system that would signal citizens as they encounter opportunities for government services, such as moving to a different address. Such a system could also prevent duplicating government services and save on wasted advertising spending. The geo-location-sensitive system would be built out in three phases.

Phase 1: Build a framework for the system. The (very) specific checklist for the framework includes: "A large distributed NoSQL architecture that is cloud-based, that is able to answer spatially relevant queries via a RESTful API," and that is powered by a combination of tools, such as Hadoop, MongoDB and PostGIS. Governmental and nongovernmental data sources can populate the system, and the team recommends public-private partnerships to maximize the available sources.

Phase 2: Develop and gather information about users, what they might use the information for, and what they need. "Units of government gather information about the consumption of services all the time in the normal course of business. They track things like who is obtaining business licenses and for what purpose, who has a driver's license, who receives a particular benefit, and so on. There's nothing new about this and no new systems need be made," suggested Smart Chicago Collaborative Executive Director Daniel O'Neil.[25]

Phase 3: Marketing. The group preferred that the government provide the service but that it be an open platform for others to offer apps to citizens and consumers. They argued that a private-sector solution "will likely not be provided for free or with the same level of integrity." Thus they suggested the platform begin with government and foundation funding, as a fee-for-service solution is unlikely to be developed unless the government acts first.

Precautions must be made as to who governs the data and how active the government will be in targeting and advertising to citizens.

Procurement

Another major barrier to adoption of technologies in government is the procurement process. Governments have very specific rules about how agencies can purchase and use software, which often prevents them from using free and open alternatives to commercial software. Google Docs, for instance, is a completely free alternative to Microsoft Office, and could potentially save taxpayers millions, if more government agencies were permitted to use it.

Google Executive Chairman Eric Schmidt argued that Google Docs has had success in the private sector precisely because it is a Web app built for sharing information among users. However, "If you're a government employee, you can't use our [Google Docs] service to start with. And, even if you were, and you were to start sharing what you were doing, you would get in trouble because of the fiefdoms." He concluded, "The way you break those in a corporation is you fire all of the department heads, which you can't do in government."

The first U.S. federal Chief Information Officer, Vivek Kundra, famously complained that the companies who sell to the government have monopolized the procurement process:[26]

> We almost have an IT cartel within federal IT made up of very few companies that benefit from government spending, because they understand the procurement process better than anyone else, not because they provide better technology.

FOCAS participants had similar experiences. Google's Eric Schmidt said, "The important thing to know about the rules for the government is they don't have very much flexibility. The way our governments work is that laws are highly descriptive of how they have to behave. The employees are unionized, so they have to follow those rules."

From the city of Chicago, Brett Goldstein later added an additional, but not insurmountable, barrier: "One of the challenges we have is we don't have a clean slate. We have hundreds of millions and billions of

dollars that have been invested in these crazy, siloed department-based architectures, which I, pragmatically, can't rip and replace."

Solution: Change the RFP Process, "Requests For Awesome"

Currently, government "RFPs [requests for proposals] are catered towards large, established vendors," said Christine Outram. In reaction, FOCAS participants proposed an alternative to the RFP process with "Requests For Awesome." Instead of buying from the traditional suppliers, cities should be able to buy from programmers and vendors who provide projects that are narrow in scope, have nimble teams and are deployed with an iterative development cycle.

For example, San Francisco experimented with an alternative RFP process by allowing its own civic hackers to tackle the problem of having the notoriously inefficient municipal transit system run on time. City officials were shocked when the volunteer coders completed the entire project in a mere weekend:

> The San Francisco Municipal Transportation Agency had every intention of spending a few years and untold dollars creating its own, more robust version of the tool. But the team hacked together the basic parameters of the SMART Muni app in a 48-hour stretch in late July, fueled by pizza and beer.[27]

Such examples, said Outram, helps even the most technologically averse governments embrace open data. Singapore, for instance, has a culture "driven by fear" of revealing inefficiencies in the government. However, one hacker community got the government to pilot opening up the bus schedules. The city officials were so impressed, she noted, it allowed even more open projects.

FOCAS participants recommended that Requests for Awesome should have three components:

• It should be easy for small businesses to win a bid.
• It should improve the way governments solicit ideas, communicate with citizens and evaluate the impact of projects.
• Failure should be made an acceptable practice.

Macon Phillips of the White House and Waldo Jaquith of the Miller Center noted that this solution may already be underway at the federal level: Chief Technology Officer Todd Park called for a small-business-friendly RFP process, called "RFP-EZ." According to the newly launched White House website:

> RFP-EZ is working to create a streamlined process for the federal government to do business with small high-growth companies. Right now, many of the best tech companies view the process for selling to the government as too long and too complicated. The result is suboptimal for both the government and the companies who potentially miss out on a large market opportunity.

Jaquith noted that the rollout of an RFP-EZ-like system could be piloted in a single city and could be augmented with the help of coders from Code for America, who could make a search-friendly app for interfacing with an RFP process.

Useful Participatory Government

While many of the participants argued that there is too little involvement in e-government projects, Congressman Darrell Issa's Digital Director Seamus Kraft argued that there is a surplus of involvement, just not in ways that the government can capture, quantify and react to. Everything from phones to Tea Party rallies are, technically, feedback.

"I would actually argue that there's way too much feedback in government data. Government just has no idea what to do with it," said Kraft. "If you've ever had the pleasure of being an intern and answering phones, or scanning a member's Facebook or Twitter stream, the feedback is there."

At the moment, there is a not a centralized database to collect opinions and ideas from the masses. Agreeing with this, White House Digital Strategy Director Macon Phillips added, "I don't want to undervalue the people who already are contacting the government." There is "a deluge of communications coming from the public about things they care about. And, we must not let that go into boxes that no one reads."

Citizens are engaged, Phillips said; look at third-party petition sites, such as Change.org. "The problem is," he said, "they can be disconnected from their targets."

Concurring with Phillips and Kraft, former Congressman and Aspen Institute Vice President Mickey Edwards remarked: "Members of Congress are just flooded with input; some of which is quite good, some of which is just totally off the wall. Segregating one from the other is the bigger problem. So it's a very good idea to try to come up with some kind of a platform that makes better systematic use of that input to help you with your decision-making."

Solution 1: Targeting Expertise and Interest

"The United States should have a world-class experience for contacting Congress, and it should be something that makes people feel like what they're doing matters," said Phillips. "And, it should be something that's structured in a way that forces the Congress people and elected representatives to pay attention to it."

To make participatory government more useful, FOCAS came up with a framework for crowdsourcing citizen expertise on policy. In part, the flood of incoming information probably contains a lot of useful ideas that officials overlook. Any solution would have to filter out the most knowledgeable people on a given topic and highlight their ideas. Additionally, the volume of incoming feedback indicates which issues the majority of citizens prioritize. If such a system could sort feedback by issue, the White House and members of Congress would know which issues to prioritize.

"The United States should have a world-class experience for contacting Congress…."
– Macon Phillips

Currently, the White House is experimenting with voluntary petitions, called "We The People," to take the temperature of public interest. In order to take in feedback from all the websites that citizens petition on, Macon Phillips recently spearheaded an initiative to open-source the code base

of We The People, so that hackers can place it in more sites. Eventually, Phillips would like to draw in petitions from not just those in the White House, but also from popular petition websites such as Change.org.

Petitions are, of course, only one method of gauging public interest. Social-media chatter is another way to understand what citizens care about. To date, some companies, such as Twitter and Facebook, attempt to analyze the content of status updates. Facebook, for instance, recently teamed up with CNN for a project that looks at how various demographics responded to the 2012 Democratic and Republican National Conventions.

If the government could similarly scan public social-media chatter for patterns and slice it by issue, it might be a way of measuring what citizens care about, beyond the relatively small, active portion of the population willing to sign a petition.

For crowdsourcing expertise, the group recommended an opt-in system that would allow citizens to alert the government to what their expertise is and what issues they are interested in. For instance, if a bill related to energy came up in Congress or a local legislature, someone interested in energy would be notified via Facebook or e-mail, along with a way to get involved. A certain portion of those alerted might have specific expertise that they could offer in form of a public markup utility or some other feedback mechanism.

A good starting point for citizens to notify government of their concerns and expertise would be voter registration, where citizens are already providing their basic demographic information. A longer form would ask questions related to their preferences and background knowledge. All such information-gathering would be voluntary to protect concerns over privacy.

Solution 2: Underthrow the Government

"There are lots of good things that come when people step aside from government and innovate on the side of it," said Voice of San Diego Chief Executive Officer Scott Lewis, arguing that extra-governmental experiments, like some charter schools, can often perform public services better when run by private citizens. To encourage more nongovernmental civic action, the group proposed an idea to "underthrow" the government. They envision a process whereby great ideas sourced from citizens can substitute for certain government-run and administered services.

Solutions would be gathered through a Twitter-like micro-blogging system that could find, order and rank ideas submitted by citizens. Similar ideas, especially by geography, can be grouped and organized, so that collaborative groups can be formed. Once an idea reaches some threshold of support and moderation, there would be a crowdfunding mechanism for funding the idea. The group referenced Kickstarter, a crowdfunding platform, where entrepreneurs, engineers and artists solicit public contributions in exchange for incentives, tiered by the level of financial support.

The group also referenced Liquid Democracy as a potential idea-ranking system. Liquid Democracy is a crowdsourcing project popularized by the German Pirate Party, whereby ideas are voted up by a wide constituency.[28] In Liquid Democracy, members can offer to transfer their vote to peers who they believe are more knowledgeable on a specific topic. The group notes that a for-profit or media entity might be the best organization for hosting the platform, with "minimal government" influence.

Conclusion

The most advanced forms of digital governance are on the precipice of becoming commonplace. Countries such as Estonia and Brazil prove that participatory democracy, data transparency and online government services can work at scale. Influential American policymakers have shown a willingness to pilot these digital tools in selected federal agencies. And, perhaps more importantly, activists, such as the members of Code for America, have proved that there is both public demand and supply for greater professional involvement with the development of digital governance. But to succeed, activists and policymakers must address key issues.

The most advanced forms of digital governance are on the precipice of becoming commonplace.

States and agencies must embrace the structure of open government as a core mission. This means, as Google's Eric Schmidt noted, agencies must be permitted to be more experimental and collaborative. Data must be accessible by default, rather than by request. The procurement process must give parity to those outside of the typical contracting process and grant legal permissions for free and open-source software. Agencies should be user-centric from step one, working collaboratively with the very citizens they intend to help.

In some cases, this will simply mean hiring more people from the technology sector who are comfortable with the more fast-paced, decentralized nature of technology firms. Indeed, President Obama's Chief Information Officer Steven VanRoekel created a Technology Fellows Program to accelerate the hiring of young talent in federal agencies.[29] In other cases, it will mean gathering policymakers to craft new rules on procurement, transparency and public feedback.

Data must be accessible by default, rather than by request.

To solicit the best ideas and volunteer talent, states and agencies should prioritize community development. Reaching out to new constituencies through social media, local businesses and online groups will provide the necessary talent of citizen experts and civic programmers for the purpose of crafting better legislation, populating databases and building tools. Just as important, agencies will need to work through local and national media to broadcast the release of new tools and the need for help. Media attention and resources are limited, so the government must frame issues (and headlines) in a way that captures readers' attention.

This evolution is not inevitable: Budget cuts threaten open-government funding, and traditional ways of doing business have persisted despite extraordinary advances in technology. Smart, practical steps, combined with new leaders oriented toward technological solutions will provide the pathway forward to a more participatory and open government.

Endnotes

1. United Nations. (2012). *United Nations E-Government Survey 2012: E-Government for the People.*

2. Wikipedia Statistics. (2012, October 20). Retrieved from: http://stats.wikimedia.org/EN/TablesWikipediansContributors.htm.

3. Save Award, The White House. (2012). Retrieved from: http://www.whitehouse.gov/save-award.

4. Howe, J. (2009, April 1). Obama and Crowdsourcing: A Failed Relationship? *Wired.* Retrieved from: http://www.wired.com/business/2009/04/obama-and-crowd/.

5. Ferenstein, G. (2010, September 14). How Brazil is Blazing a Trail for Electronic Democracy. *Mashable.* Retrieved from: http://mashable.com/2010/09/14/brazil-electronic-democracy/.

6. FAA Atellite Navigation—History. (2012, October 20). Retrieved from: http://www.faa.gov/about/office_org/headquarters_offices/ato/service_units/techops/navservices/history/satnav/index.cfm.

7. Lathrop, D. and Ruma, L. (2010). *Open Government: Collaboration, Transparency, and Participation in Practice.* O'Reilly Media, Inc.

8. Ferenstein, G. (2012, June 14). Obama's chief tech officer: Let's unleash ingenuity of the public. *CNN.* Retrieved from: http://www.cnn.com/2012/06/14/tech/web/white-house-tech-officer/index.html.

9. HCD Connect. (n.d.). *HCD Connect.* Retrieved from: http://www.hcdconnect.org.

10. City of Palo Alto Open Budget. (n.d.). *Delphi Solutions.* Retrieved from: http://paloalto.delphi.us/#stackedButton/1/expenseBreakdown,S,3,7.

11. Kelley, D. (n.d.). Video on TED.com on human-centered design. Retrieved from: http://www.ted.com/talks/david_kelley_on_human_centered_design.html.

12. Gross, G. (2011, January 7). White House Officials Push Online Trusted IDs. *PCWorld.* Retrieved from: http://www.pcworld.com/article/216143/article.html.

13. Fontana, J. (n.d.). NSTIC launches pilot programs with $9 million in grants. *ZDNet.* Retrieved from: http://www.zdnet.com/nstic-launches-pilot-programs-with-9-million-in-grants-7000004639/.

14. Gross, D. (2011, November 8). Why can't Americans vote online? *CNN.* Retrieved from: http://www.cnn.com/2011/11/08/tech/web/online-voting/index.html.

15. Hoppe, R. and Puhl, J. (2011, October 21). Estonia Lives the European Dream. *Spiegel Online.* Retrieved from: http://www.spiegel.de/international/skype-and-sensibility-estonia-lives-the-european-dream-a-790293.html.

16. Estonia bucking EU economic trend. (2011, October 6). *BBC.* Retrieved from: http://www.bbc.co.uk/news/business-15197943.

17. Gonçalves, S. (n.d.). *Power to the People: The Effects of Participatory Budgeting on Municipal Expenditures and Infant Mortality in Brazil.* London School Of Economics. Retrieved from: http://www.webmeets.com/files/papers/LACEA-LAMES/2009/714/Sonia%20Goncalves.pdf.

18. Rabaino, L. (2012, September 7). Chicago Tribune News Apps Team Launches "Crime in Chicago" Data Project—10,000 Words. *Mediabistro.* Retrieved from: http://www.mediabistro.com/10000words/chicago-tribune-news-apps-team-launches-crime-in-chicago-data-project_b15211.

19. Giridharadas, A. (2010, March 13). Ushahidi—Africa's Gift to Silicon Valley: How to Track a Crisis. *The New York Times.* Retrieved from: http://www.nytimes.com/2010/03/14/weekinreview/14giridharadas.html.

20. Hesse, M. (2010, January 16). Crisis mapping brings online tool to Haitian disaster relief effort. *The Washington Post.* Retrieved from: http://www.washingtonpost.com/wp-dyn/content/article/2010/01/15/AR2010011502650.html.

21. Solomon, A. (2012, May 11). Such a Long Journey—An Interview with Kevin Kelly. Retrieved from: http://boingboing.net/2012/05/11/kk.html.

22. Ferenstein, G. (2012). Two Victories in One Week, The Internet Flash Lobby Becomes A Political Force. *TechCrunch.* Retrieved from: http://techcrunch.com/2012/07/15/two-victories-in-one-week-the-internet-flash-lobby-becomes-a-political-force/.

23. Ferenstein, G. (2012). Zombie SOPA? Congressman Introduces Pieces Of Defeated Bill, With Support From Former Opponent Issa. *TechCrunch.* Retrieved from: http://techcrunch.com/2012/07/10/sopa-intellectual-property-attache-act/.

24. Madrigal, A. (2012, October 26). Gangnam Style Is Now the Third Most Popular YouTube Video Ever. Here Are Numbers 1 and 2. *The Atlantic.* Retrieved from: http://www.theatlantic.com/technology/archive/2012/10/gangnam-style-is-now-the-third-most-popular-youtube-video-ever-here-are-numbers-1-and-2/264161/.

25. This explanation was given over e-mail to Gregory Ferenstein after the conference.

26. Roberts, B. (2011, July 21). Startup America by stopping the IT cartel. *CNN Money.* Retrieved from: http://finance.fortune.cnn.com/2011/07/21/startup-america-by-stopping-the-it-cartel/.

27. Temple, J. (2011, October 5). SMART Muni app designed over a weekend. *San Francisco Gate.* Retrieved from: http://www.sfgate.com/technology/dotcommentary/article/SMART-Muni-app-designed-over-a-weekend-2328008.php.

28. Meyer, D. (2012, May 7). How the German Pirate Party's "Liquid Democracy" Works. *TechPresident.* Retrieved from: http://techpresident.com/news/wegov/22154/how-german-pirate-partys-liquid-democracy-works.

29. Ferenstein, G. (2011, November 23). Inspired By "Facebook Nation," Obama's Chief Disruptor Brings Startup Culture To The Gov't. *Fast Company.* Retrieved from: http://www.fastcompany.com/1790016/inspired-facebook-nation-obamas-chief-disruptor-brings-startup-culture-govt.

APPENDIX

Road to Government 2.0
Technological Problems and Solutions for Transparency, Efficiency and Participation

Aspen, Colorado · August 5–8, 2012

Forum Participants

Madeleine Albright
Chair
Albright Stonebridge Group

Jed Alpert
Co-Founder and Chief Executive
  Officer
Mobile Commons, Inc.

Hannes Astok
Advisor to the President of
  Estonia
Office of the President of Estonia

John Bracken
Director
Journalism and Media Innovation
John S. and James L. Knight
  Foundation

John Chiang
Controller
State of California

Steven Clift
Founder and Executive Director
E-Democracy.org

Frank DiGiammarino
Former White House Official

Esther Dyson
Chairman
EDventure Holdings

Mickey Edwards
Vice President
  The Aspen Institute
Director
Aspen Institute Rodel Fellowships
  In Public Leadership

Greg Ferenstein
Technology Journalist
TechCrunch

Charles M. Firestone
Executive Director
Communications and Society
  Program
The Aspen Institute

Note: Titles and affiliations are as of the date of the conference.

Brett Goldstein
Chief Information and Chief
 Data Officer
City of Chicago

Jeff Gomez
Chief Executive Officer
Starlight Runner Entertainment

Jordan Greenhall

Dazza Greenwood
Lecturer
MIT Media Lab

Peter Hirshberg
Chairman
Re:imagine Group

Hilary Hoeber
Portfolio Lead
IDEO

Reed Hundt
Chief Executive Officer
Coalition for Green Capital

Tim Hwang
Founder and Managing Partner
Pacific Social Architecting
 Corporation

Alberto Ibargüen
President and Chief Executive
 Officer
John S. and James L. Knight
 Foundation

Toomas Hendrik Ilves
President
Republic of Estonia

Waldo Jaquith
Web Developer
The Miller Center

Marina Kaljurand
Ambassador
Republic of Estonia

Seamus Kraft
Director of Digital
Committee on Government
 Oversight
U.S. House of Representatives

Scott Lewis
Chief Executive Officer
Voice of San Diego

Michael Maness
Vice President
Journalism and Media Innovation
John S. and James L. Knight
 Foundation

Mark Meckler
President
Citizens for Self Governance

Ellen Miller
Co-Founder and Executive
 Director
The Sunlight Foundation

Max Ogden
Computer Programmer
Gather

Daniel X. O'Neil
Executive Director
Smart Chicago Collaborative

Note: Titles and affiliations are as of the date of the conference.

Caitria O'Neill
Founder and Chief Executive
 Officer
Recovers.org

Christine Outram
Director
City Innovation Group

Tiago Peixoto
Open-Government Specialist
World Bank Institute

Macon Phillips
Special Assistant to the President
 and
Director of Digital Strategy
The White House

David Robinson
Visiting Fellow
Information Society Project
Yale Law School

Juliana Rotich
Executive Director
Ushahidi

Eric Schmidt
Executive Chairman
Google, Inc.

Jeff Smulyan
Chairman and Chief Executive
 Officer
EMMIS Communications

Christina Xu
Chancellor
Institute on Higher Awesome
 Studies

Staff:

Sarah Eppehimer
Senior Project Manager
Communications and Society
 Program
The Aspen Institute

Peter Keefer
Digital Media Strategist
Communications and Society
 Program
The Aspen Institute

Note: Titles and affiliations are as of the date of the conference.

About the Author

Gregory Ferenstein is a technology journalist with *TechCrunch*, where he regularly covers policy, education and social science news.

His work has been featured by *The Washington Post, CNN* and *The Atlantic.* He also holds a master's degree in mathematical behavioral science.

The Aspen Institute
Communications and Society Program

www.aspeninstitute.org/c&s

The Communications and Society Program is an active venue for framing policies and developing recommendations in the information and communications fields. We provide a multi-disciplinary space where veteran and emerging decision-makers can develop new approaches and suggestions for communications policy. The Program enables global leaders and experts to explore new concepts, exchange insights, develop meaningful networks, and find personal growth, all for the betterment of society.

The Program's projects range across many areas of information, communications and media policy. Our activities focus on issues of open and innovative governance, public diplomacy, institutional innovation, broadband and spectrum management, as well as the future of content, issues of race and diversity, and the free flow of digital goods, services and ideas across borders.

Most conferences employ the signature Aspen Institute seminar format: approximately 25 leaders from diverse disciplines and perspectives engaged in roundtable dialogue, moderated with the goal of driving the agenda to specific conclusions and recommendations. The program distributes our conference reports and other materials to key policymakers, opinion leaders and the public in the United States and around the world. We also use the internet and social media to inform and ignite broader conversations that foster greater participation in the democratic process.

The Program's Executive Director is Charles M. Firestone. He has served in this capacity since 1989 and also as Executive Vice President of the Aspen Institute. Prior to joining the Aspen Institute, Mr. Firestone was a communications attorney and law professor who has argued cases before the United States Supreme Court. He is a former director of the UCLA Communications Law Program, first president of the Los Angeles Board of Telecommunications Commissioners, and an appellate attorney for the U.S. Federal Communications Commission.

Previous Publications
from the Aspen Institute Forum on Communications and Society

Networks and Citizenship: Using Technology for Civic Innovation (2011)
  Jeffrey Abramson, rapporteur.

Networks and Citizenship addresses two questions: (1) What does citizenship look like in an era of digital networks? and (2) What are the emerging roles of individual citizens and institutions in this changing environment? The report details the use of information and communication technologies to enhance the public sphere, provide access to information (open-source and open-data networks), connect citizens and government, create global networks, globalize and localize citizenship, and use crowdsourcing as a self-governing process.

  48 pages, ISBN: 0-89853-566-8, $12.00.

News Cities: The Next Generation of Healthy Informed Communities (2010)
  Richard P. Adler, rapporteur.

News Cities details the best and worst of times for the news business. The best being the vast expanse of online information sources, from user-generated content to citizen journalists. The worst being the detrimental economic times. In this report, Adler concludes that society needs to encourage more experimentation with new models that provide credible information and encourage engagement, locally and nationally; ensure access to broadband services by all; and make certain people have the education in the multiple literacies they need to function fully as citizens in the 21st century.

  78 pages, ISBN: 0-89853-546-3, $12.00.

Of the Press: Models for Transforming American Journalism (2009)
    Michael R. Fancher, rapporteur.

    Of the Press takes a closer look at ways to save American journalism and local democratic governance in our current financial crisis. With the many technological and behavioral changes taking place, news organizations face shrinking audiences and declining advertising revenue. *Of the Press* offers four areas for improvement: transforming public-service journalism, rebuilding public trust in journalism and journalistic organizations, promoting research, and pushing experimentation and collaboration.

    60 pages, ISBN: 0-89843-521-8, $12.00.

Media and Democracy (2008)
    Richard P. Adler, rapporteur.

    Media and Democracy explores the role of media in enhancing social capital, civic engagement, and democratic involvement. In addition to examining the state of newspapers and journalism against the backdrop of the 2008 presidential election, the report discusses proposed projects for harnessing media to spur civic and global engagement. Among the ideas being implemented are the Online Peace Corps, Groundswell, and the American Dialogue Initiative, as well as ongoing work by the Knight Commission on the Information Needs of Communities in a Democracy, which stemmed from the 2007 Aspen Institute Forum on Communications and Society (FOCAS).

    58 pages, ISBN: 0-89843-503-X, $12.00.

Media and Values: Issues of Content, Community and Intellectual Property (2007)
    Richard P. Adler, Drew Clark, Kathleen Wallman, rapporteurs.

    Media and Values is a newly released report generated from the 2007 Aspen Institute Forum on Communications and Society (FOCAS). It suggests how the changing media affects the ability of communities to govern themselves, discusses people's concepts of property for non-physical goods, includes a set of principles for copyright "fair use," and contains a number of other policy recommendations.

    90 pages, ISBN: 0-89843-488-2, $12.00.

Next-Generation Media: The Global Shift (2006)

Richard P. Adler, rapporteur.

This report examines the growth of the Internet and its effect on a rapidly changing area: the impact of new media on politics, business, society, culture, and governments the world over. The report also sheds light on how traditional media will need to adapt to face the competition of the next-generation media.

76 pages, ISBN: 0-89843-469-6, $12.00.

Soft Power, Hard Issues (2005)

Shanthi Kalathil, rapporteur.

In these two reports, the author explores the growing importance of soft power by looking at two crucial areas of international tension: the U.S. role in the Middle East and Sino-American relations. The role of information and communications technologies in U.S. public diplomacy in the Middle East and U.S. relations with China are central themes.

70 pages, ISBN: 0-89843-447-5, $12.00.

Reports can be ordered online at *www.aspeninstitute.org/publications* or by sending an email request to *publications@aspeninstitute.org*.