

Reimagining Government in the Digital Age

BY JAY NATH

Public sector organizations across the country are facing declining revenues, an aging workforce, and citizens who demand better and faster services. A typical response to these challenges would be to reduce government workforces and cut services, but there are reasons to hope that the often-stated but rarely realized promise of “doing more with less” may soon become a reality for many government organizations.

On January 21, 2011, President Obama issued a memo declaring transparency, collaboration, and participation as among his most important values. He asked agencies to pursue these goals with the use of “innovative tools, methods, and systems” and to “cooperate among themselves, across all levels of government, and with nonprofit organizations, businesses, and individuals in the private sector.” Obama’s memo is part of a new movement for open government or, as I refer to it, “Government 2.0.” Just as the Web 2.0 shifted the traditional paradigm of users as passive consumers of content to creators, Government 2.0 will allow citizens opportunities to participate and contribute value in a new architecture of openness and collaboration.

Transparency and Openness as a Foundation to a New Civic Architecture

The traditional focus of open government advocates has been on accountability. Very few would argue with this principle, but the new open government movement is likely to focus more on information sharing that empowers citizens to be more actively involved and creative. This shift from accountability to what I would call the generative power of transparency reflects a new ethos. It recognizes that the traditional (and often cumbersome) mechanisms of public records requests can be improved on, so government information is freely available for all to use.

The potential of government data can be seen in something as ordinary as weather forecasts. The

National Oceanic and Atmospheric Administration began releasing weather-related information as early as the 1970s, but now the data can be accessed in a number of different ways, everything from the local newspaper to the latest smart phone app. Global Positioning System (GPS) data were originally reserved for U.S. military use, but in 1983, President Ronald Reagan ordered GPS data to be released to the American public after 207 people were killed when a Korean Air flight mistakenly flew into prohibited Russia airspace and was shot down. As a result of this directive, consumers now enjoy numerous services and products in their vehicles on smart phones and elsewhere. It has also created a multibillion-dollar industry that employs tens of thousands of people.

More recently, the federal government, led by White House Chief Information Officer (CIO) Vivek Kundra, launched a central repository of freely available data called Data.gov. While this is the most visible example of open data, the real pioneer was the District of Columbia. Under the leadership of Kundra, who was then the chief technology officer for the district, D.C. established a very sophisticated data repository. From that effort, dozens of applications were created to improve access to city services and information.

Soon after the launch of Data.gov, Chris Vein, former San Francisco CIO, and I began planning a similar effort. We started by learning as much as we could from Washington, D.C.

Our goal was to create as much value in the shortest amount of time with little or no capital costs. We also recognized that our open data efforts would evolve and that an iterative approach would serve us best. In less than three months, we launched San Francisco’s first data catalog, DataSF.org. In the spirit of leanness, open source software laid the foundation. A feedback mechanism allowed the city to improve the quality of the data released and also to prioritize what data sets should be shared. For

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example, the public was the first to inform San Francisco when street-sweeping schedule data was incomplete in many areas of the city. DataSF now has nearly 200 data sets and over 60 applications that have been developed using San Francisco data. The applications have been produced at no cost to the city's government and are helping citizens understand when the next bus is arriving, analyze voting patterns, and even report issues as they arise.

In the DataSF app showcase, public transportation apps are by far the largest category, representing nearly 20 percent of all apps. This is not surprising. Public transportation is a quality-of-life issue that affects most people in the Bay Area. One iPhone app, Routesy, helps citizens navigate Bay Area transportation providers by using real-time prediction information. By using a phone's GPS location, they can identify the nearest transit stops and determine when the next bus or train is arriving. By releasing these data, transportation providers are greatly improving customer satisfaction, increasing ridership, and lowering costs. The app is rated very highly in the Apple App Store; several customers have provided comments, such as this one from "East Bay MK":

Thank god for Routesy!

It's made my life so much easier. So much better than standing there at a bus stop wondering when/if the bus is ever coming. And it works way better than NextBus (which hardly works at all). I feel like a public transit ninja!

Transit agencies are able to lower their costs by eliminating the need for expensive electronic signage systems and providing customers with alternative options such as mobile apps, automated voice response systems, and text messaging. Additionally, call volumes can be reduced through this approach in cities such as San Francisco where 311 call center staff respond to many calls for transit prediction.

With some applications, citizens actually can provide information that helps local government, either by improving the quality of the data themselves or by providing insight into areas that need servicing. This approach has proven quite successful when local government is managing a large number of assets spread across a sizable area, such as trees. For instance, the Urban Forest Map (www.urbanforestmap.org) is a Web site that allows citizens to view San Francisco trees and how much environmental value is being generated. The data powering this site is from the City of San Francisco and Friends of the Urban Forest, a local nonprofit. The Web site also gives citizens opportunities to add to or update existing information, which is then sent back to the city. In this way, citizens are crowdsourcing a better understanding of their city's urban forest. The Urban Forest Map team has open-sourced the code so other cities can benefit from its work. Another example of citizens being able to push data back to government is Open311 API. This interoperable communication standard was launched with Mayor Gavin Newsom and White House CIO Kundra in March 2010. It was heralded as a way for cities to standardize how they publish information and consume 311 data. Standardizing allows developers to create applications that work in any city that adopts the standard. Although standards may seem trivial, they are a powerful way to enable innovation. One just has to look at the Internet or GPS as two powerful examples of standards creating unforeseen value and innovation. As a result of this collaborative effort among San Francisco, other cities, citizens, and Open Plans, a national nonprofit, Open311 is seeing tremendous growth in adoption and applications. Large enterprise players, such as the company Lagan, which sells the technology that powers many 311 call centers, have publicly announced their support and will enable their customers to easily adopt this standard. The effort has also led to the development of applications such as the Open311, which allows Facebook users to submit requests for city services where they find graffiti, potholes, or overflowing garbage cans. Since these requests are processed without the need for 311 customer service agents and routed directly the appropriate servicing agency, there is a huge potential for cities to save money and improve efficiency. One can imagine new applications using text messaging, Twitter, and even automated voice response systems

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to allow citizens with numerous channels to interact with their city. “Government as a platform” is a term used to describe this idea of creating an ecosystem of vendors, developers, and citizen hackers who are solving many of the challenges in government.

The motivations for creating civic applications using government data range from purely altruistic to profit making. In some cases, vendors develop new applications to sell to citizens or government. In others, they may use new applications as way of marketing their capabilities. Citizens themselves are sometimes interested in solving a problem and giving the resulting product or service back to their community. For instance, some artists are using data to explore and reinterpret urban spaces. In the end, the open data approach recognizes that government is simply a steward of public information with the responsibility to make this information available freely. The potential benefits of increased transparency, accountability, and the provision of new government services are driving the adoption of open data by local, state, and federal governments across the world.

New Model for Government Innovation: Collaboration

Many of us recognize the fact that government operations are more alike than not. Yet we continue to create solutions in silos and make little effort to see if there are opportunities to collaborate with others or even borrow solutions already in place. This type of thinking may be overcome by recognizing the simple fact that with the fiscal challenges facing many organizations, we need to change how we do business. Government leaders and taxpayers are demanding that we work together to lower costs and improve outcomes. We are now beginning to see a new culture of sharing and collaboration that will transform how government operates and ultimately provide better services at a lower cost to our citizens.

In many ways, the tools and approaches for connecting with people and data are much more advanced for consumers than for government. In our personal lives, we manage friends and family networks by Facebook; we use LinkedIn for professional relationships, Wikis and Google Apps for collaborative work, and Twitter for sharing news and status. Yet in government, we still use tools and approaches from decades ago. We cling to top-down communication and organizational structures; e-mail for communication; centralized Web masters for online content. The world is moving toward peer-to-peer communications facilitated by Web 2.0 technologies and is seeing the benefits every day. The technology is available to government organizations, but using it will require creating a culture of sharing, openness, and collaboration, which is even more challenging than using new technology.

Govloop is an example of a large social network for government employees. It is the largest social network for government, with over 45,000 local, state and federal employees. There are many uses for Govloop, from building relationships, to answering questions, to best practices. Government workers can find out who is working on a specific topic and pose questions and engage in dialogue. There are nearly 1,000 groups within Govloop, and they range from the esoteric to the mainstream. For example, the National Institute of Standards and Technology (NIST) Manufacturing Engineering Laboratory (MEL) Robotics connects researchers. Communication Best Practices is a place to share publicly releasable guidelines, templates, and policies. While many may question the value of Facebook in the workplace, Govloop provides clear benefits to those who use it for sharing and consuming knowledge.

In some cases, commercial self-interest can drive collaboration among government organizations. One such example is Google’s working with Portland’s Trimet Transit agency to standardize transit information. As a result, the public can now use Google Maps in hundreds of cities across the world to plan their trip on public transportation. Before this collaborative effort, public transit riders would have to consult several maps and timetables, which discouraged ridership. In 2005, Bibiana McHugh, an information technology manager at Portland’s TriMet transit agency, and Google released Google Transit

Format Specification (now called General Transit Format Specification, or GTFS). While adoption was slow initially, the huge value that GTFS provides and the Google brand name have helped push adoption to hundreds of cities worldwide.

A great example of cities and counties working together to develop a solution to common needs is the Bay Area Recycling Database. The demand for information on recycling hazardous and less common materials is quite high, with over 3,000 people visiting San Francisco's Ecofinder Web site and over 5,000 downloads of its iPhone application. Other Bay Area projects like StopWaste.org in Alameda County have witnessed similar demand. In an effort to reduce costs and standardize how recycling information and services are delivered, San Francisco, Alameda, Contra Costa, and San Jose counties decided to work together to share the costs (\$100,000), design the solution, and develop an operational and sustainable plan for joint efforts. Several challenges are being worked through, including determining how to structure governance, procurement, and ongoing management.

With such compelling drivers of lower costs and better outcomes, why is collaboration the exception rather than the rule? Cultural attitudes are often at the heart of the problem, but there is also a greater cost to collaboration in terms of communications, gaining consensus, and increased transparency and accountability. As mentioned before, practical questions about procurement, governance, and ongoing management arise when working in a collective. Clearly, government needs a framework and methodology for collaborative efforts. One such model that has been closely examined is based on the Kualii Foundation's work in higher education. For the past several years, the foundation has helped universities collaborate on large-scale technology needs, such as financial systems, with tremendous success. In the government space, organizations such as Civic Commons are becoming repositories of best practices and actively exploring a model similar to that of the Kualii Foundation.

While the costs of collaboration can be a barrier, organizations that have pursued collaboration often are rewarded with lower costs and better outcomes. In many instances, participating members

share costs equitably, saving substantial capital investments. Technology can help lower these barriers, but it is up to organizational leaders to encourage their staffs to seek partnerships that will help drive culture change.

Some of the best ideas often come from outside the walls of government. This is an often-heard refrain in the government 2.0 space. With Web 2.0 tools, the public sector now has the ability to quickly and cost effectively reach out to constituents for ideas, feedback, and even policy making. "Ideation platforms" that help people share and develop new ideas, such as Ideascale and Google Moderator, are being used by all levels of government. These tools have a similar construct that allows the public to submit ideas and vote or comment on existing ideas.

In Manor, Texas, an experiment is being conducted by which people can submit solutions on an open innovation platform. Dustin Haisler, a former city CIO, in partnership with Stanford University and Spigit, an innovation management platform, designed a strategic process using gaming theory to solicit and manage ideas. Each idea first enters the incubation stage, where it is posted for the public to comment and vote on. As the idea gains traction through page views, comments, and votes, it may move on to the next stage: validation. In this stage, a department head reviews the solution in terms of sustainability and cost to determine if the idea should advance to the next stage, emergence. In this stage, the city discusses the idea and how it might be implemented. If the idea is deemed feasible, the city will reward the initial submitter with a prize and implement the idea. If the city does not advance the idea, it responds publicly and gives its reasons for not doing so.

In San Francisco, crowdsourcing is taking a different approach. The best ideas, as selected by the public, will be given seed funding through microgrants and crowd funding. The Improve SF project, set to launch in fall 2011, is a large-scale, high-profile, incentivized experiment to empower the San Francisco community by helping it generate and implement its own solutions to its problems. In phase 1, community organizations will select three challenges facing the city. In phase 2, the public will be asked to submit innovative ideas that help address these

issues. In phase 3, the best ideas, as determined by the public, will be seed funded through microgrants and crowd funding. Self-identified solution supporters will be matched with nonprofit organizations to provide guidance and mentorship and to help measure effectiveness. Phase 4 will consist of measuring the effectiveness of the overall campaign, including outcomes. While this effort is yet to begin, the idea indicates the evolution and continuous experimentation taking place at many levels of government.

Conclusion

The examples discussed in this article represent only a fraction of the tremendously innovative work that is being done today in government organizations. This flowering of innovation is being driven by several factors, including fiscal constraints, a new generation of tech-savvy staff, Web 2.0, and an emerging

culture of sharing. Looking at innovation as a way to lower costs is a strong argument for organizations that have a more conservative culture. Many of the examples described here have been conducted at no cost and often generate tremendous value, quantitatively and qualitatively, for the public.

When President Obama declared his commitment to the values of transparency, collaboration, and participation, he understood their transformative power and the promise they hold of reimagining government in our digital age. Each of us, whether we work within the public sector or not, has the ability to help advance these values through our support and participation.

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