DATA.GOV

How technology is building an open government to increase citizen engagement and participatory democracy.

Musangi Muthui, CGU SISAT
March 28, 2013

INTRODUCTION

In January 2009, newly elected President, Barack Obama, issued a memorandum to deliver recommendations for an Open Government Directive within 120 days. In this memorandum, the President noted that openness in government "strengthen[s] our democracy and promote[s] efficiency and effectiveness in Government (Lakhani et. al., 2010, Exhibit 1). The vision was to promote public trust by opening information maintained by the government, which was considered a national asset, and this would in turn drive the public participation and collaboration necessary to maintain a healthy democracy.

The memorandum highlights three core values as part of the vision (Collins, 1996) for the Open Government Directive:

• Government should be transparent to promote accountability and make citizens aware of what government is doing

- Government should be participatory to leverage the positive effect public engagement has on the Government's effectiveness and quality of decisions

- Government should be collaborative to engage citizens in the work of the Government and gather valuable feedback (Lakhani et. al., 2010, Exhibit 1).

In March 2009, Vivek Kundra, who had previously launched open government implementations in Arlington County, Virginia, was appointed as Chief Information Officer of the U.S. Federal Government. In May 2009, the first iteration of Data.gov, the technology implementation to support the core values, was launched. The underlying premise was that "if there was no good reason data had to stay secret, it should be published in a machine-readable format so others could easily do whatever they wanted to with it" (Lakhani et. al., 2010). While transparency is typically a welcomed construct, and was well received after the public announcement, breaking down silos highlighted several issues including the lack of technology administrators to make this data available to the public; the careful balance needed to protect national security while also publishing Government maintained data; and, the need to change a culture that had applied a broad brush stroke to data security in order to "play it safe" (Lakhani et. al., 2010).

In this case study we examine how open government has the potential to transform how government operates, and how Government data, as part of the tech industry trend towards big data, is having an impact on private sector business innovation.

OPEN GOVERNMENT

As a follow up to the memorandum, the Open Government Directive was published in December 2009. Key strategic objectives were outlined that would support the core values, and agencies were required to respond within 45 to 120 days. These strategic objectives were as follows:

- Within 45 days each agency is expected to identify and register via Data.gov three high-value data set that were not previously available online

- Within 60 days each agency shall

create an Open Government page on its web site reporting about activities related to the directive

- Within 120 days each agency shall publish an Open Government Plan addressing all the three principles (an outline of the plan is provided as an attachment)

- Within 45 days the Federal CIO and CTO will establish a working group to socialize best practices, coordinate with other mandates around federal spending transparency and recovery, and share best practices about the use of new technologies and insights of

they do." In an open government, the content, structure and governance are all transformed. Content is no longer just gathered by agencies, but must also be shared digitally, and made accessible to developers by way of real-time capable APIs. The structure of the open government activity system, or how its activities are linked and in what sequence, as well as governance pertaining to who performs activities (Amit et. al., 2012) shifts some of the innovation and development needed to achieve transparency, participation and collaboration to the private sector. Some critics argue that while Data.gov had its

> Treating the government as an open platform in this way encourages innovation. Just look at how the government's release of GPS and weather data fueled billion dollar industries. It also makes government more efficient and able to adapt to inevitable changes in technology.
>
> - Federal CIO Steven VanRoekel

people inside and outside government

- And within 60 days they will create an Open Government Dashboard to keep track of progress of all agencies (De Maio, 2009).

The key strategies left the details of what to publish up to individual agencies allowing them to balance implementation resources and data security with the data set's potential value to the public.

This shift exemplifies what Amit et. al. (2012) describe as business model innovation where "how companies do business will often be as, or more, important than what

successes, the format and timing of data releases made them both outdated and inefficient when attempting to incorporate them into applications (Gallagher, 2012).

As a response to the limitations of Data.gov, a follow up memorandum was issued by the President in May 2012 announcing the Digital Government Strategy, which would seek to move Government forward towards a more developer-friendly data sharing platform by making API development a directive, and open data the default (Gallagher, 2012). Data.gov was to be transformed into a catalog that included Developer pages

with an API repository, and tools to enable real-time access to Government data (VanRoekel, 2012). Web APIs combined with an open data culture has the potential to accelerate service delivery across multiple platforms, including the growing number and diversity of smartphones owned by citizens. Technology professionals and innovative entrepreneurs are now seen as strategic allies who can not only enable the vision of open and participatory government, but can also drive revenue generation and jobs growth in the private sector market. These memorandums served as a catalyst for collective ambition by stating the core values, or the organization's guiding principles and what they stood for, as well as the brand promise to stakeholders concerning the experience Government would provide through open data (Ready et. al., 2011).

INDUSTRY IMPACT

While working for Arlington County in Virginia, Kundra launched the "Apps for Democracy" competition with a $50,000 budget. The goal was to realize the benefits of rapid development by engaging technology industry professionals to create apps that used the data Kundra's department had been publishing. Within 30 days, 47 apps were submitted and represented a cost avoidance of $26 million that would have been required to hire contracted developers (Lakhani et. al., 2010). Even the initial limitations of Data.gov were able to spur innovation. Rensselaer Polytechnic Institute used the Resource Description Framework (RDF), JSON and the SPARQL query language to convert

some data sets into "semantic web" content (Gallagher, 2012). This conversion to RDF made it possible to connect data sets into web applications — an innovation the Government then adopted as a standard for how it published data.

The OpenGov Foundation is a non-profit that seeks to support technology innovation that fosters transparent governance. OpenGov utilizes the Rackspace Open Cloud to build products that not only

without collaboration

there is no creation

@hugh
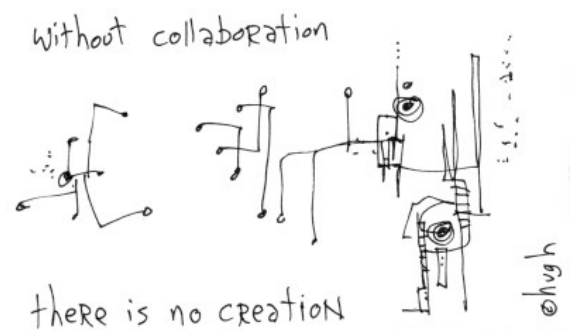
Source: OpenGov, 2013

provide information about what the government is doing and how it is spending taxpayer funds, but also provides citizens with a means to act on that information (OpenGov, 2013). Their Madison Project, initiated in response to SOPA, has matured to become an open source policy collaboration platform enabling citizens to engage with lawmakers, and access previously secured documents that are integral to the policy making process (OpenGov, 2013).

DataMasher is an online tool, similar to Visual.ly, that allows users to create their own data visualizations, or infographics. Unlike OpenGov and Madison, DataMasher is dedicated to making it fun for citizens to play with public data and explore what trends are occuring across the U.S. based

on the data sets they select. To create their data backbone, the organization has pulled from Data.gov, Federal Government sites and third parties who draw upon Federal Government or State Data (DataMasher).
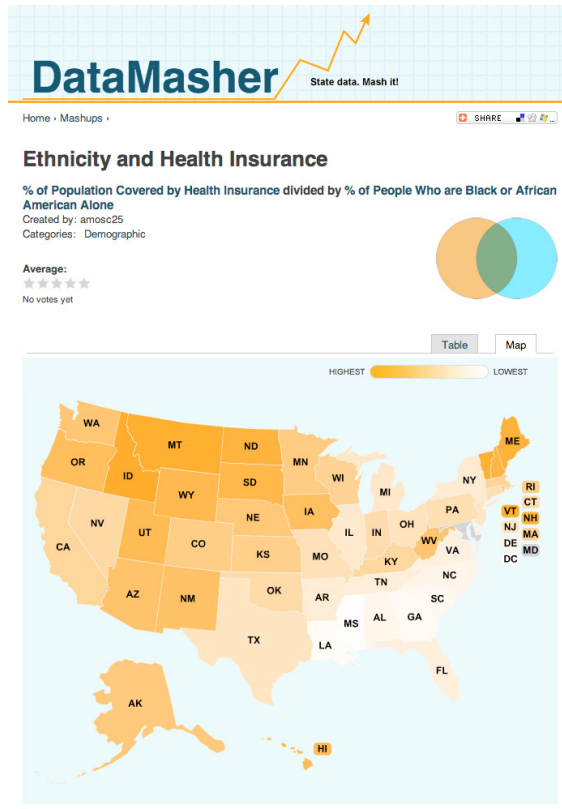
DataMasher is an intriguing example of how the big data trend can apply to open government.

CONCLUSION

Some industry critics feel that the Government's initiatives for open data have not gone far enough. Social engagement and two-way collaboration have not been factored into the process, but instead the focus is on one-way communication out for Government procured and managed data, and one-way communication in for citizen engagement (De Maio, 2009). If Kundra was still in the role of CIO for the Federal

Government some intriguing questions that come to mind would include the following:

- Does he feel he pushed Data.gov far enough or were there opportunities to push it closer to the Digital Government Strategy objectives sooner?

- Where does he feel that there are opportunities for social media, regulation and data privacy to find an agreeable middle ground?

- Where does he see the U.S. democracy in 100 years relative to other nation states that have not implemented an open government vision, or adopted a forward thinking approach to leveraging the latest technology to increase citizen engagement?

In a previous case study of the FBI Centinal project, we observed how custom development can take years, and over that time technologies can quickly evolve thus making it cheaper to abandon previous project plans in favor of open source or COTS applications (Bechor, 2011). New media and social technologies can provide government with benchmarks on how technology can deliver richer experiences (Muthui, 2012). By continuing to refine the theory of their business (Drucker, 2005), the Government has evolved from a culture of highly secured information to one where the standard is shifting to open data available through APIs by default with a focus on greater collaboration with technology industry innovators.

REFERENCES

Amit, R., & Zott, C. (2012). Creating value through business model innovation. MIT Sloan Management Review, 53(3), 41-49.

Bechor, T., & McElroy, M. (2011). A Decade of IT Evolution within the FBI. Claremont Graduate University.

Collins, J. C., & Porras, J. I. (1996). Building your company's vision. Harvard Business Review, 74(5), 65-77.

DataMasher. About. Retrieved from http://www.datamasher.org/page/about

De Maio, A. (2009). US Open Government Directive is disappointing. Retrieved from http://blogs.gartner.com/andrea_dimaio/2009/12/08/us-open-government-directive-is-disappointing/

Drucker, P. with Maciariello, J. (2005). "Management", Revised Edition. Collins, Part II - Chapter 8 (The Theory of the Business).

Gallagher, S. (2012). Open government reboot focuses on APIs instead of data: The White House hopes for an explosion of commercial application development. Retrieved from http://arstechnica.com/business/2012/05/open-government-reboot-focuses-on-apis-instead-of-data/

Lakhani, J. R., Austin, R. D., Yi, Y. (2010). Data.gov. Harvard Business School.

Muthui, M. (2012). FBI (Case Study). Retrieved from http://aikomedia.com/fbi/

OpenGov Foundation. (2013). "Data-Driven Disruption To Open Government" – Rackspace Startup Program Spotlights the OpenGov Foundation. Retrieved from http://opengovfoundation.org/data-driven-disruption-to-open-government-rackspace-startup-program-spotlights-the-opengov-foundation/

Ready, D. A., & Truelove, E. (2011). The power of collective ambition. Harvard Business Review, December 2011, 1-10.

VanRoekel, S. (2012). Roadmap for a digital Government. Retrieved from http://www.whitehouse.gov/blog/2012/05/23/roadmap-digital-government