

Evolving Democracy for the 21st Century

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New Technology and Institutional Innovation

Network technology has irrevocably changed campaigning and elections. It has the potential to transform governance and the workings of our democracy for the better. These improvements, however, have been slow in coming. Innovations in governance have been thwarted by politics as usual and resistance to devolution of power away from hierarchical bureaucracy to networks of diverse, public participants. In Tripoli, Tottenham or Wall Street people have been protesting failed policies and a lack of opportunity to participate in elections once every two or four years. Whether in failed states or old democracies, most simply want a state that works. But they have lost faith in government and other centralized institutions of power. For example, just eleven percent of Americans polled express optimism about the future of the United States government.¹

Churchill was fond of saying that democracy is the worst form of government except all the others, but by democracy he surely meant something better than this.²

Democratic elections alone do not remedy the crisis of confidence in government. Moreover, there is no viable justification for a democratic system in which public participation is limited to voting. We live in a world in which ordinary people write Wikipedia, the most comprehensive and highest quality global encyclopedia; spend their evenings moving a telescope via the Internet and making discoveries half a world away; get online to help organize a protest

¹ New Poll Finds Deep Distrust of Government, New York Times, October 25, 2011 (<http://www.nytimes.com/2011/10/26/us/politics/poll-finds-anxiety-on-the-economy-fuels-volatility-in-the-2012-race.html>).

² Sir Winston Churchill, Speech Before the House of Commons, Hansard, November 11, 1947 (http://hansard.millbanksystems.com/commons/1947/nov/11/parliament-bill#column_206).

in cyberspace and in the physical world, such as the revolutions in Egypt and Tunisia or the demonstrations of the ‘indignados’ throughout Spain; or pore over purloined State Department cables.

The same technologies enabling us to work together at a distance are creating the expectation to do better at governing ourselves. But to achieve the twin goals of more participatory and effective governance, we must innovate in how we govern. Thanks to technology, if we have the will to do so, we also now have the opportunity.

The Technologies of Institutional Innovation

There are two social and technological developments with the potential to result in better and more participatory governance: open data and online collaboration.

In May, 2011, McKinsey released a report highlighting the role of “big data” in enabling “a new wave of innovation, accelerating productivity and economic growth.”³ Thanks to cheap storage capacity and expanded computational power, every 1.2 years more human-driven socioeconomic data are produced than during all preceding human history combined. The technology is giving rise to a new era of data-driven policymaking that could give us the means to avoid the risk of economic meltdown and develop more effective policies whose impact and effectiveness we can measure. As computational social scientist David Lazer points out, we can collect data at fine geographic and temporal granularity on a wide range of social issues from health and transportation to crime.⁴ This facilitates the examination, for example, of the impact of changes to transportation infrastructure and how such changes affect particular types of individuals and behavioral patterns.

³ McKinsey and Company, Big Data: The Next Frontier for Innovation, Competition and Productivity, May 2011 (http://www.mckinsey.com/mgi/publications/big_data/).

⁴ David Lazer can be found at <http://www.hks.harvard.edu/davidlazer/html/>.

The technology has precipitated the enactment of policies favoring the open publication of public data in manipulable formats. Now governments around the world, and throughout the US, have been releasing an unprecedented amount of information capable of reuse by the public. In the US alone, the Federal government has released over 300,000 datasets, and 16 states, over 20 cities, and several tribal entities also are releasing large numbers of datasets yielding terabytes of new information. Twenty countries have launched new national data portals.

Open data is key to the creation of more participatory governance in that it provides the raw material for people to use in devising models, visualizations, evidence-based policies and other means of addressing social and economic problems. Data can help deliver greater accountability, better services for less money and entrepreneurial opportunity.

First, data are helping to arm public officials and citizens with information to know what the public sector is doing and to hold government accountable. For example, the civil society group MKSS in Rajasthan holds public readings of data about salaries and infrastructure spending to engage villagers in pointing out instances of fraud. MKSS events have yielded 25 million in savings.⁵ The Open Knowledge Foundation in the United Kingdom develops visualizations of global government spending data to uncover inconsistencies. US CIO Vive Kendra married open spending data displayed on a web-based, visual "dashboard" (it.usaspending.gov) to a policy of investigating and halting wasteful technology spending projects.

Second, open data enables people to discover innovative ways to deliver services often for less money. The City of Chicago is using Twitter to encourage residents to report problems.

⁵ Amador Kisan Shakti Sangathan (MKSS) (<http://www.mkssindia.org/>).

Their CTO writes: "One tweet about a sofa in a sinkhole is interesting, possibly a joke."⁶ But five of them, relocated, trigger a 311 service call that the city can prioritize, enabling the city to respond to the affected people immediately. In Milan, they are doing something similar with incidents of graffiti and derelict buildings. The world over, "civic hackers" are creating apps for government and citizens alike. Asthmopolis, a public health project run by a doctor in Wisconsin, uses sensors attached to inhalers to measure the incidence of their use in order to inform the development of health policy.

Improving the flow of information is also empowering citizens to deliver services instead of government. In Chennai, India, a city of 4 million people, for example, there are over 5,000 separate bus routes. The official bus map was incomplete and incomprehensible and had been "under construction" for six years. So in 2010, Arum Ganesh, a student at the National Institute of Design in Bangalore – not a bureaucrat -- decided to design a new map, and he turned to the web to ask his fellow bus passengers to help him. Commuters contributed timetables and bus details, and in just three days he had compiled enough data to create a fresh map for mobile phones with a clean, comprehensible design. Using the data, he then developed a visualization of where the bus network was failing to provide adequate service.⁷ Similarly, after the UK released public data about bike accidents in England, it took one week for a creative designer to develop a free route planning tool that enables cyclists to map the safest route to get to a destination -- no new traffic lights, road works, or costly and contentious legislation.⁸

Third, by allowing unrestricted reuse of government data, collected by means of taxpayer dollars, open data also creates entrepreneurial opportunities for the creation of new information-

⁶ John Tolva, Email to Author, October 21, 2011. See also Alex Howard, Opening Government The Chicago Way at <http://radar.oreilly.com/2011/08/chicago-data-apps-open-government.html>

⁷ "Information is Beautiful Hacks in India with David Cameron," David McCandless, The Guardian, July 30, 2010 (<http://www.guardian.co.uk/news/datablog/2010/jul/30/information-beautiful-india-cameron>).

⁸ See <http://www.cyclestreets.net/>.

based businesses and jobs. The GPS and weather industries are two large-scale examples. The National Oceanic and Atmospheric Administration in the United States estimates that it generates 100 times the value of its 5 billion dollar budget in private sector value.⁹ Kenya launched its data portal by explicitly encouraging entrepreneurs to use public data for commercial purposes.

Data, by itself, changes little. But when combined with collaborative technologies, allowing people to take informed action and create new tools, policies and solutions, open data becomes open innovation. Social and expert networking -- the technologies for organizing collective action and collective intelligence -- are a necessary part of the equation. They make it possible for government to invite new people from outside of government to bring new ideas for improving governance. For example, the Department of Health and Human Services in the United States is making thousands of data sets about public health available and then actively inviting businesses and individuals to use the data for public good.¹⁰ These innovators -- people who have never before had a way to give back and participate in the life of their democracy -- are developing tools that enable health care workers and policy makers to get easy access to care information; help consumers find the safest hospital; identify opportunities to participate in clinical trials; and choose the healthiest places to locate their businesses. The new ecosystem of data, people and tools, known as the Health 2.0 movement, is intended to increase well-being and reduce the cost of delivering healthcare that works.

Three characteristics of networking tools make them essential for organizing participatory governance: they make expertise discoverable; aid in divvying up tasks and roles; and enable democratic social practices.

⁹ See <http://economics.noaa.gov>.

¹⁰ See <http://www.hhs.gov/open/plan/opengovernmentplan/initiatives/initiative.html>.

First, digital network technologies can make it easier to find one's inner "expert" and to connect with other such experts. Networks – from social networks like Facebook to professional networks like VIVO that connect scientists across a dozen universities to interactive videogames – are designed to showcase what their members know. Facebook shows off your social connections. LinkedIn touts your professional contacts. Twitter advertises how many "followers" you have. Videogames display your skills at healing, slaying and mastering other tasks. Much of the appeal lies in the fact that people with otherwise undistinguished "real" lives can demonstrate significant expertise and mastery by power-selling on e-Bay, leading a guild in World of Warcraft, or becoming a frequent contributor to Wikipedia. Imagine if parliaments or presidents, when considering a pending bill on farm subsidies, had the ability to target questions and receive manageable, relevant responses from agronomists, economists, farmers and others with expertise and experience. Instead of having to rely exclusively on a select group of professionals who sit in Washington or Brussels, people with every imaginable skill and passion could augment their intelligence.

Second, we work hard when we have the right work. Highly graphical and visual interfaces in our desktops, laptops, iPods and smart phones make it possible to display the breakdown of larger goals into manageable roles and tasks so that people can join in and collaborate. More voters than ever before participated in the presidential campaigns of 2008, in part, because the campaigns provided tools to enable people to go beyond merely voting. Instead, they could "do stuff" from phone banking to driving people to the polls, best suited to their available time, talents and enthusiasm. Imagine if the White House or Elyse Palace websites offered a simple graphic illustrating each step involved in the process of writing a policy memo for the President's consideration or drafting a rule for a ministry or signing up to offer to

implement a solution to a problem. We'd be opening up a window and shining light on the otherwise opaque and mysterious governing process, nudging people to contribute relevant information and opinions, and inviting them to play a role in decision making.

Third, and most important, these social and visual technologies can be programmed to enforce participatory ways of working, deciding and doing. In other words we can design for democracy. Design matters. We can create new tools quickly that guide people through novel and potentially complex practices that may be unfamiliar to them, like public participation in a democratic process. And we can use what we know about Farmville and World of Warcraft to make participation in real world problem solving more fun and engaging like solving a problem in a game. We can iterate new versions of the institutional “operating system” and strive to create democracy 2.0. This is why initiatives like Civic Commons¹¹ and Wikitalia¹² are working to provide a platform of tools and the know-how for using them effectively to enable more participatory governance.

Two Phases of Innovation: Smarter Government and Collaborative Democracy

In 1945, Friedrich Hayek wrote “the knowledge of the circumstances of which we must make use never exists in concentrated or integrated form.”¹³ New technology unleashes the potential to organize dispersed knowledge for the betterment of governance and society. Whether elected or appointed, our public officials have limited access to the best information. Using experimental survey evidence, award-winning organizational psychologist Philip Tetlock makes

¹¹ <http://www.civiccommons.org>.

¹² <http://www.wikitalia.it>.

¹³ Friedrich A. Hayek, *The Use of Knowledge in Society*, American Economic Review XXXV, No. 4, Pg. 519-30, American Economic Association (1945).

the case that today's policy wonks are no more accurate at predicting the future than monkeys.¹⁴ Crowdsourcing has the potential to make government smarter.

This first phase of democratic innovation is exploding all around us. In the last two years, countless government bodies (but still a vast minority) have begun inviting citizens to contribute ideas and information through online brainstorming and to make their demands heard using Twitter, Facebook and repetitions. Improving the information flow between government and the public is what is now commonly called open government. By integrating ostensibly anarchic technologies within ostensibly authoritarian bureaucracies to connect professionals and data within an institution to people with good ideas and information on the outside, an open government can access the wealth of creativity and insight that is out there in the wider society. Rakish Rajani of the Tanzanian civil society group Tweeze eloquently describes the significance of open government: "As important as dollars saved are, the true power of open government may be its effect on the public imagination. When citizens monitor what's going on, make comparisons and act, they gain a sense of purpose and control; a sense not only that things happen to us, but that we can make things happen; a poignant affirmation that we are part of the narrative of history."¹⁵

For example, in 2005, well before Facebook or Twitter, my students and I designed and built a process and platform for volunteer scientists and technologists to supply information the United States' patent office via an open website with clear directions that instruct participants how to submit relevant information of exactly the kind that is needed. The design, which requires individuals to work as a group to evaluate each other's submissions openly, means that

¹⁴Philip Tetlock, *Expert Political Judgment: How Good Is It? How Can We Know?* (Princeton University Press, 2005).

¹⁵ Rakesh Rajani, Speech delivered before the Open Government Partnership, September 20, 2011 (<http://www.opengovpartnership.org/news/open-government-human-government>).

officials receive a manageable quantity of vetted information in a reasonable time frame. Time after time, the public has been able to dig up quickly the expertise the official needed and couldn't find, enabling her to make the final determination informed by citizen participation but subject to the independent law and rules of the patent process.¹⁶

As then-CEO of Google Eric Schmidt said of Peer to Patent, "Why is it not true of every branch of government?"¹⁷ In the new American Patent Act, passed with near unanimity, Peer to Patent citizen engagement, once an experimental pilot undertaken only with the applying inventor's consent, is now enshrined in law. The United Kingdom, Japan and Australia have started Peer to Patent pilots. Now we are witnessing a proliferation of projects designed to make government smarter. For example, Fix My Street, in use by 70 governmental organizations across six continents aids the public in reporting potholes and out of order traffic lights to help municipalities better target the delivery of services. The website challenge.gov in the United States is a platform to enable any agency to set up a challenge backed by the incentive of a prize and invite the public to aid in solving problems. A recent Defense Department challenge to design a better combat vehicle garnered 150 submissions, whose proposals were refined through open, public collaboration.

But we still have a long way to go for institutions and individuals to learn effective modes of knowledge transfer that take advantage of people's experience and expertise and their willingness to participate.

Whereas technology helps better information flow into government to improve the delivery of services and the formulation of policy, this represents only the first phase of what technology makes possible. Crowdsourcing information still preserves a power asymmetry

¹⁶ <http://www.peertopatent.org>.

¹⁷ Lecture at New America Foundation, November 18, 2008 (http://newamerica.net/events/2008/eric_schmidt).

between government and governed rather than razing the borders between "them" and "us." Eventually, these new ways of governing have the potential to dethrone the privileged status of bureaucracies as the exclusive, legitimate decision maker and pave the way for new, collaborative forms of governance between the state, individuals, groups and markets. Instead of crowdsourcing the creation of the Chennai bus map, we will have the tools, processes and know-how so that the same community can decide how to organize and fund the transportation system.

There are some examples of this already in practice. Instead of substituting its own judgment for what works, for example, the United States Department of Education gives out small grants to innovative projects with a small amount of evidence that they improve learning outcome and large grants to those with a large amount of evidence that they achieve results and can be scaled.

Disaster preparedness is another concrete example of this second phase in the evolution of 21st century government. Once the domain of professional first responders, network technologies like social media and large-scale computational tools are making ordinary citizens part of the permanent infrastructure of crisis management. The Red Cross has been training volunteers and Twitter supplying them with verification badges to enable ordinary people to coordinate relief during hurricanes and other natural disasters as a complement to or even in place of official government work. We will start to see more and more examples like the new experiment of the City Council in New York, which has ceded responsibility to the public to spend six million taxpayer dollars. Through a process of neighborhood assemblies, citizens will be able to propose and vote on local infrastructure projects.¹⁸

In the future, it is easy to imagine a world where the state collects taxes and then individuals receive grants to undertake projects of their choosing whether as individuals or

¹⁸ The Participatory Budgeting Project in New York City (<http://www.participatorybudgeting.org/>).

through collective action. Given the diversity (i.e., the "long tail" of people's interests), there is every reason to assume they will tackle everything from improving schools to repairing bridges. Recipients then report back to the public on the success of their work, rather than exclusively to the institution. Citizen juries, not unlike the twelfth-century innovation of our criminal juries, decide if the financing should be renewed and enlarged, avoiding today's problem of often unaccountable corporate contracting or bogus bridges to nowhere. By "connecting the network" to the institution, we may be able to overcome the deficit of expertise, agility and civility from which our political institutions suffer and create the win-win of innovative and effective governance and stronger, more robust democracy.

From India to England, institutions and online networks of people informed by data are working together in exciting and experimental ways (two adjectives not generally associated with government). We need to bring new people and ideas to the work of governance in order to accelerate innovation. Sociologist Duncan Watts tells us, "Policymakers can always persuade themselves that all they need to do is to design the correct incentive scheme" and they can fix every problem. But, he writes, "our impressive ability to make sense of behavior we have observed" does not imply a corresponding ability to predict it."¹⁹ Instead, we want to be able to try new solutions, see what works and evolve our strategies for addressing our challenges.

Ultimately, what these new technologies do is to help us overcome the limits of our intelligence. As Joi Ito, Director of MIT Media Lab writes, "organizations were born...to compensate for our limited social skills."²⁰ We are smarter working together than alone. And one organization is not as smart as a network of them. By using big data and social networking, we make it possible for groups outside government to share expertise and know-how and

¹⁹ Duncan Watts, *Everything is Obvious Once You Know the Answer*, Ch. 2, Crown Publishing Group, 2011.

²⁰ Joi Ito, Cognitive Limit of Organizations, Media Lab Blog, October 7, 2011 (<http://blog.media.mit.edu/2011/10/cognitive-limit-of-organizations.html>).

participate in decision-making, thereby upending the orthodoxy that government professionals know best and changing the relationship between citizens and the state.

Using technology, we may be able, as Jefferson hoped, to “mak[e] every citizen an acting member of the government, and in the offices nearest and most interesting to him.” This, in turn, Jefferson went on, “attaches him by his strongest feelings to the independence of the country, and its republican constitution.”²¹

²¹ Letter to Samuel Kerchival from Thomas Jefferson, Reform of the Virginia Constitution, Monticello, July 12, 1816 (<http://yamaguchy.com/library/jefferson/jeffkerch.html>).