

# Citizensourcing: Applying the Concept of Open Innovation to the Public Sector

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## Abstract

Theories of innovation suggest the process of product and service development is becoming more open, placing more emphasis on external knowledge and involving a wide range of external actors to achieve and sustain innovation. The growing success of open innovation practices in many firms raises the question of whether these principles can be transferred for the reinventing of public sector organizations. Going beyond a technocratic e-government paradigm, but with the support of Internet technology, the authors present a structural overview of how external collaboration and innovation between citizens and public administrations can offer new ways of citizen integration and participation, enhancing public value creation and even the political decision-making process.

**Keywords:** citizen engagement, citizen participation, collaboration, citizensourcing, open innovation

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## Introduction

Treating citizens as customers has been one of the key elements in transforming public services, and has been considered a core element of the (new) public management reforms worldwide over the last two decades. Governmental and local administrations and public authorities are being transformed from bureaucratic organizations into public service providers, which are managed with a strong emphasis on transparency, accountability, service orientation and perceivable output and outcome devoted to the welfare of the citizens. The latter are regarded as constituents and taxpayers in the political-administrative system (Svara, 2001; for different degrees of direct/participative democratic involvement see Bowler & Donovan 2000; Frey 1994) but also as customers/users of public services (Dunleavy & Hood, 1994; Pollitt & Bouckaert, 2004). In consequence, concepts of Public Value (Moore, 2005), eGovernment (Stowers, 2000), Good Public Governance (Pierre & Peters, 2000) and Performance Management (Holzer & Kloby, 2005) have animated the discussion concerning public sector modernization, which is dedicated to the citizens' call for "value for money". Many public sector innovations and reforms are, then, focused on giving citizens more 'customer voice', more choice, and the service quality they deserve.

In the following, the authors want to amplify the view of a citizen as a mere customer by taking the developments in the private sector into consideration, which systematically integrate the knowledge and experiences of customers, users, and external performers into the innovation and value creation process. In the private sector, integrating customers into the innovation process entails a host of new concerns, concepts and managerial decisions, but also offers large benefits concerning the market-performance of products and services, and activates continual and sustainable innovation. We want to discover how the successful innovation principles of interactive value creation, distributed co-creation, and mass collaboration in the private sector may inspire the public sphere. These principles are, for example, tagged as "Open Innovation" (Chesbrough, 2006), "Crowdsourcing" (Howe, 2008) or "Commons-Based-Peer Production" (Benkler, 2002). We also want to answer the question of how well citizens can serve as contributors to tasks that are traditionally performed by a designated public agent (usually a civil

servant) and now are outsourced to an undefined, generally large group of people in the form of an open call for contributions.

In this article, the authors will offer first examples and a conceptual insight into what the existing literature recently termed “Collaborative Public Management” (McGuire, 2006), “Citizen Engagement” (Hickley, 2008; OECD, 2004), “Wiki Government” (Noveck, 2009), “co-production with public sector clients” (Alford, 2009), or Open Government (Obama, 2009). The authors have conducted field research in order to identify, evaluate and characterize different forms of citizen integration in the public sector. Using the academic approach of a comparative case study design (Yin, 1994; Eisenhardt, 1989), we present some very successful best practices.<sup>1</sup> This work is not intended to reflect a representative sample of benchmarking practices or to test a hypothesis based on an overarching theory, but rather- to be a first study of a relatively small number of cases in order to observe what is currently taking place (Burgoyne & Reynolds, 1998), and to illustrate examples of “Citizensourcing” for achieving transparency, participation, and quality service improvements in public-sector organizations.

### **The Concept of Open Innovation and Crowdsourcing**

Mature companies like Procter and Gamble, Lego, Adidas, and many others are learning to leave innovation to their consumers, users, and specialized communities in these times of rapid innovation and a growing “do it yourself” (DIY) culture. These companies have recognized that the public is a source of business value: each time a customer contributes a new idea or develops a new product, the company increases its intellectual assets and, therefore, its market value (Lukensmeyer & Torres, 2008).

Development processes are hindered when manufacturers tend to see the innovation process as an internal (‘closed’) activity (Chesbrough, 2003). They transfer customer requirement (need) information into a possible solution by using only the solution knowledge (of technologies, materials, methods, processes, etc.) that is in their domain. As a result, the solution space is reduced to sources known to the firm. In many cases, many more ideas, technologies, and applications may exist outside the manufacturer’s boundaries. Recent literature thus demands that new ways of opening up the innovation process to the input of solution and needs

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<sup>1</sup> This case study design relies on multiple sources mainly based on interviews as primary source of data as well as on secondary data from (online-) publications, blogs, official reports and media articles (Yin, 1994; Stake, 1995).

information from external sources should be found (e.g. von Hippel, 2005; Lichtenthaler, 2008). The idea is that by incorporating a much larger variety of ideas and knowledge into new product and service development, the performance of this process will improve, and the resulting products will have a better fit with the market requirements. In consequence of the open innovation paradigm as a strategy within a firm's innovation management, different methods of open innovation may be identified. Companies systematically identify and integrate very innovative users and customers – so called “lead users” (Herstatt & von Hippel, 1992) – into the product development process, or they screen online communities and boards (“netnography”) to identify current needs, trends, and ideas (Franke & Shah, 2003). However, probably the most impressive realizations of open innovation are the so called open innovation platforms (Terwiesch & Xu, 2008). Tapscott and Williams denominate in their book “Wikinomics” such platforms as “ideagoras” – marketplaces for ideas, innovations and solutions (Tapscott & Williams, 2006). Perhaps the most famous and impressive example of such an implementation of the “broadcast search” for R&D problems is that of InnoCentive:

InnoCentive was launched in June 2001 by Eli Lilly, the pharmaceutical company, as a research venture. Today, InnoCentive is an independent enterprise that describes itself as the result of a new model of distributed research. It provides a way to search for solutions to technological problems among existing resources outside of the conventional internal research and development structures of a firm. InnoCentive posts its clients' (called “seekers”) problems on its web site, without any hint of the seeker company's identity, together with a financial reward for the best solution delivered within a given timeframe. Seeker companies are mostly large R&D operations like Procter & Gamble, BASF etc. They use InnoCentive when they are looking for brand new approaches and new ideas, especially when they are stumped in a particular research area. InnoCentive provides access to a global network of more than 180,000 scientists (the solver community) who offer solutions in the hope of winning the offered reward. The company facilitates problem formulation and posting, solution screening, confidentiality, intellectual property agreements, and award payment. Using this approach of distributed and open innovation, seeker companies get access to the specialized talents of tens of thousands of scientists without adding to their fixed costs.

A recent research of analyzing 166 problems that had been posted on InnoCentive.com by large corporations from the chemical and pharmaceutical industry shows that the InnoCentive model is not just different, but also highly efficient (Lakhani et al, 2007). The corporations had previously spent between six months to two years trying to solve the research problems internally, without

success. Offering on average \$30,000 for a successful problem solution, these problems were posted on InnoCentive. In general, solutions had to be submitted within six months of initial posting. Of the 166 problems studied, 49 (29.5%) were solved by the InnoCentive community. This is an impressive percent, given that individual solvers were competing with organized corporate research labs. But even more impressive is the finding that on average a winning solver spent just 74 hours to solve the problem - compared to 6 to 24 unsuccessful months by the big corporations. The reason for this almost unbelievable result is rather simple: winning solvers already knew the solution. InnoCentive helps seekers by leveraging pre-existing knowledge distributed in their broad community of the 180,000 scientists. In 72.5% of all cases, the winner just reused an existing solution from a previous task he or she had solved in a different context in a different domain. In most cases, the solution was outside of the seeker's field of expertise, which means that the seekers would have been very unlikely to find the solutions on their own.

The resulting input from an open call to a community to solve a given problem results in higher quality of the input (compared to solving the problem internally). This particular benefit of broader inclusion in decision making is an argument already long made in the policy literature (see e.g. Lindblom & Cohen, 1979 – an insight long before corporate innovation studies). The real “new” aspect is the platform through which input is now garnered and the implications for expanding inclusion through self-selection. So the economic benefits of allocating tasks to external contributors arise from two things: Either lower costs in solving the task are involved (e.g. contributors already know the solution or have specific knowledge required to solve the task) or they have higher motivation (involvement, challenge, enjoyment) for working on the task. This new kind of interactive value creation is based on new mechanisms of self-selection, self-motivation and self-integration of the potential contributors. For the company, self-selection of the contributors involves no costs for screening, identifying and allocating tasks to the actors. Self-selecting actors are very often motivated by the knowledge either that solving the problem will demand little effort on their side or they are intrinsically motivated because they see the task as a challenge that is worthwhile solving.

The open call for participation in a non-restricted network of participants enables the firms to overcome the “local search bias” and to tap into new knowledge sources, which are as yet unknown. The problem of local search refers to the tendency of companies and individuals not to take external (new) sources of information into account when they are solving problems, and to only use knowledge and methods which are closely connected with the existing range of

available (old) knowledge (Lüthje, Herstatt & von Hippel, 2005). To solve a specific task, only existing information is drawn on, because of a geographical proximity or an established technological or disciplinary source, resulting in a problem of bounded rationality (Simon 1991; Katila & Ahuja, 2002). While this may be regarded as efficient and rational behavior in existing processes (“continuous improvements”), it often inhibits radical innovations in the development process. This principle of a “broadcast search” which enables the local search bias in R&D settings to be overcome is based on an open call for contribution, and has been linked with the term “Crowdsourcing” (Howe, 2008).

The scientific and practical discussion of this kind of “Democratizing Innovation” (von Hippel, 2005), which engages many different external actors in entrepreneurial research, indicates a potential that the public sector (with its heterogeneous stakeholders) may profit from as well. The connection of participation and integration in the relationship between a government and its citizens may, in this context, be enlarged so that citizens may actively participate in public value-creation and in a refined decision-making process.

The exercising of political authority and the use of institutional resources for managing a society's problems and affairs are inseparably linked with the focus on the citizens and the nation's common welfare, and require persistent dialog and interaction between citizens and their government. In this context, “Citizensourcing” (term first introduced by Lukensmeyer & Torres, 2008) describes the design and configuration of a new relationship between a government and its people, based on a set of emerging practices and principles applied from the private sector. In the following, we define Citizensourcing as the act of taking a task that is traditionally performed by a designated public agent (usually a civil servant) and outsourcing it to an undefined, generally large group of people in the form of an “open call.” This concept of “open government” offers new ways of interactive public value creation and citizen co-creation by systematically integrating external actors (beyond civil servants and addressing the public at large, including out of area experts/non-experts) into the governmental and administrative processes. The question arises as to how external input, information and community-spinning can be employed for public matters and public problem solving, and how citizens can systematically be invited to participate.

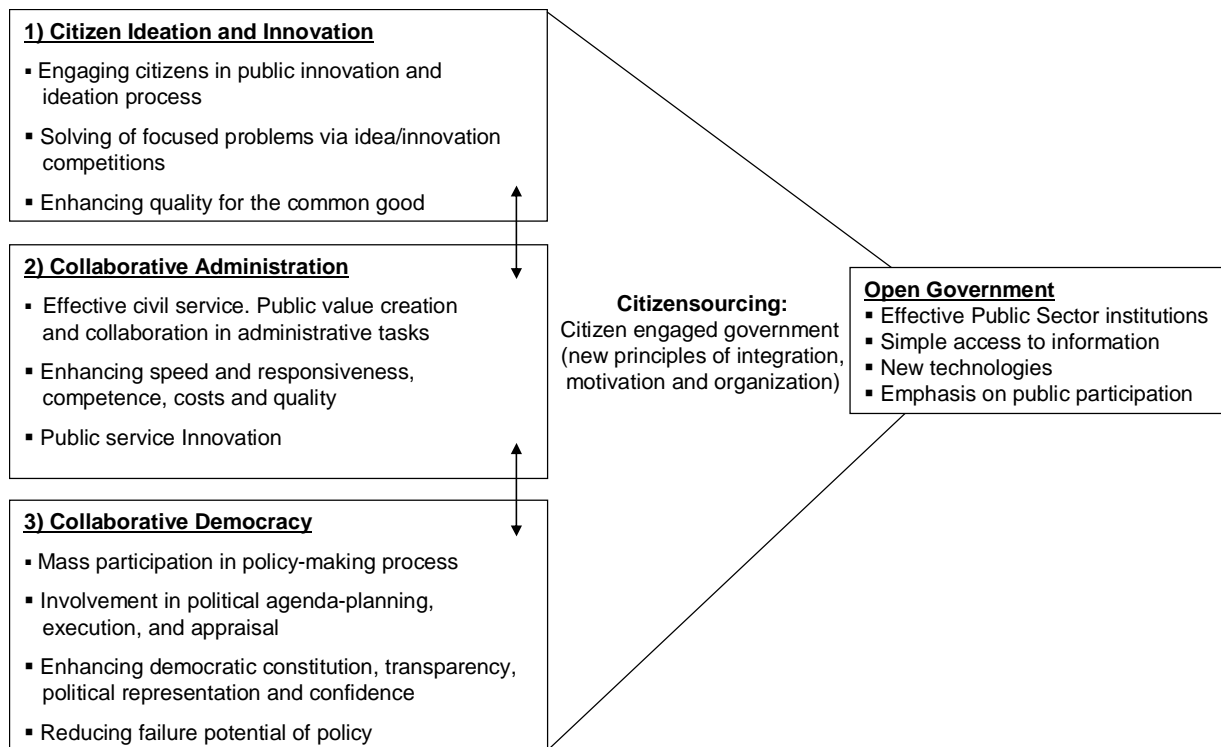
## Applying the Concept of Open Innovation to the Public Sector

To answer all these questions, the authors offer a structural overview of the benefits of the joint principles of Crowdsourcing and open innovation, linked with the nearly ubiquitous use of Internet technology, to the governmental and public sphere.<sup>2</sup> A framework for Citizensourcing has to include the following three dimensions (see Figure 1):

1. *Citizen Ideation and Innovation*: This first tier focuses on the general potential of knowledge and creativity within the citizenry to enhance the quality of the common good by applying methods such as idea- and innovation-contests through open innovation platforms.
2. *Collaborative Administration*: The second tier explicitly addresses the integration of citizens for enhancing existing public administrative processes. Experiences from firms' user innovation and user-generated-content indicate new tasks and processes for public organizations.
3. *Collaborative Democracy*: This level summarizes new ways of collaboration to improve public participation within the policy process, including the incorporation of public values into decisions, improving the quality of decisions, building trust in institutions and educating and inform the public (e.g. structured by the model of Beierle & Cayford, 2002 concerning institutional settings/context, enhanced processes and improved results).

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<sup>2</sup> We still need to make note that there is (still) a certain form of intellectual elitism at play in this approach. Not all citizens have access or know how to use it proficiently enough for these techniques, acknowledged as a limitation of democratic claims made here.



**Figure 1: Framework for citizen engaged governance**

## Citizen Ideation and Innovation

The experiences with idea competitions and online open innovations platforms in the private sector are good examples for adopting and increasingly integrating the citizenry into drafting and framing ideas, and for encouraging participation. There is no reason why the benefits of shaping improvement suggestions and ideation by the general public should not also be available to public authorities and administrations. This idea starts at a basic level, offering online-platforms where citizens can interact with e.g. their local administration by reporting defects and problems. These might be basic infrastructure issues (street lighting, traffic and road infrastructure, construction defects, regulatory offenses, etc.). This system of notification and complaints offers a first and fair approach for revealing citizens' needs and demands. It treats them as customers and users of public services, offering them space for complaints and suggestions for improving the offered quality. In the context of eGovernment, it enables a feedback function for the citizens and a fast and efficient access to their local service administration. An example would be FixMyStreet.com, a simple British website, where problems in the local environment can be



reported. The site allows photos of the damage to be attached before the user makes his/her report on a map. The report is then quickly passed to the relevant local authority, who may fix the problem. FixMyStreet.com is an example of how official data provided online can foster interaction and dialog between a municipality and its citizens.

On the next higher level, the public unit can tap the knowledge and creativity of its citizens by conducting idea and innovation competitions. In this context, the authorities have to phrase problems and innovation questions, which are then deployed on innovation platforms and probably linked to a monetary reward or incentives structure. Generally, the recourse to external help and external contributors is not a new idea for the administrative sphere as it is a usual public setting to issue calls for bids on things like building projects as an instrument for reducing cost, comparing quality and displaying accountability. A state and its administrative organs may be regarded as an organization with only a head but no hands, being familiar with delegating to private companies (Savas, 2005) and assigning them to conduct public tasks. In this context, the idea of integrating citizens is not too far-fetched, especially in creative and knowledge-intensive matters.

A good example of this approach is the success of the Future Melbourne program, a Wiki- and blog-based approach to shaping the future urban landscape of Australia's second largest city. The program allowed citizens to directly edit and comment on the plans for the future development of the city. It attracted more than 30,000 individuals, who submitted hundreds of comments and suggestions ([futuremelbourne.com.au](http://futuremelbourne.com.au)). Further examples concerning quests for a new city-logo, names of streets, buildings or shopping centers, the design of a new traffic circle or the use of land and recreation space can frequently be identified. Basically, problems concerning design and creativity, future strategy and local culture, and even questions of management and service innovation can be broadcasted on such web-platforms.

Prominent examples have recently been found on governmental and federal level, such as the USAID Development 2.0 Challenge or the Innovation Inducement Prizes at the National Science Foundation (National Research Council, 2007). The U.S. Agency for International Development (USAID), the United States government agency that delivers economic and humanitarian assistance worldwide, is sponsoring a challenge to find the best mobile innovations for the developing world. USAID is seeking innovations for maximum development impact in areas such as health, banking, education, agricultural trade, or other pressing development issues. The

agency's duty to provide aid to developing countries is, then, supported by the public. Another example is that of the National Science Foundation (NSF), who implemented an inducement prize program in June 2008, believing that a prize contest will be a sound investment in strengthening the infrastructure for United States innovation. In the program's initial phase NSF is offering several small-scale prizes (\$200,000 to \$2 million each) in diverse research fields. Moreover, in May 2008, the U.S. Department of Energy announced the Bright Tomorrow Lighting Prize competition, which will award cash prizes and other inducements for the development of solid-state lighting products to replace standard incandescent and fluorescent lamps.

### **Collaborative Administration**

Beside this concept of citizen innovation, and the opportunities to foster ideas and creativity among the entire citizen audience, the principles behind Citizensourcing offer another big opportunity to support internal administrative processes. Traditionally and legally prescribed administrative tasks can be enhanced by systematically integrating external actors into these processes (Alford, 2009; Brudney & England, 1983; Whitaker, 1980). A good example of this is Peer-to-Patent. In 2007, the U.S. Patent and Trademarks Office (USPTO) opened the patent examination process up to public participation. This allowed members of the public to review pending patent applications and provide input and feedback into the process of assessing patent claims. The reason behind this was that the patent system had long been closed to outside help, and the USPTO was moving towards a crisis. Seventy percent of patent examiners had considered leaving the USPTO because of the unreasonable pace at which complex patents (e.g. software patents) were being examined. The economic disadvantages were tremendous, as applying for patents takes several years, and the voiding of bad patents is still an important task of public interest within the common patent system. But why is it so difficult to avoid bad patents? One would assume that easier access to worldwide information and to the Internet would make it easier for patent offices to find prior art against a patent application in order to ensure that only real inventions pass the patent process and receive an issued patent. However, comparable to researchers' "problem of local search" when striving for innovation in private R&D labs, no expert can possibly have the scope, skills, capabilities or knowledge of prior art that deep, individual technical experts anywhere in the world possibly have. In this dilemma,

Citizensourcing may help to contribute with the right specialized knowledge needed in this administrative process.

Peer-to-Patent employs the Web 2.0 technology to facilitate discussion amongst groups of volunteer experts. Users can upload prior art references, participate in discussion forums, rate other user submissions, add research references or invite others to contribute. This helps the examiners to focus their attention on the submissions of prior art that have the highest relevance to an application. Major companies such as IBM, Microsoft, Hewlett-Packard, Sun Microsystems, Intel, and GE (companies whose patent portfolios account for nearly one-third of the patents issued to the top 30 U.S. patent holders in 2007) have all submitted patent applications to the Peer-to-Patent process. Data from the first pilot year of the Peer-to-Patent show that an open network of reviewers are willing to volunteer time and improve the quality of information available to patent examiners, and that such citizen reviewers are capable of producing information relevant to the patent examination process. Initial results based on a survey of patent examiners from the USPTO suggest that information provided by the public is beneficial to the examination process. Findings from the first-year report show (Center for Patent Innovations 2008):

1. Peer-to-Patent attracted more than 2,500 peer reviewers, 71% hold Master's or Ph.D. degrees
2. On average, citizen-reviewers contributed 6 hours to reviewing each patent application in the pilot.
3. 92% of patent examiners surveyed said they would welcome examining another application with public participation, while 73% of participating examiners want to see Peer-to-Patent implemented as a regular office practice.
4. 21% of participating examiners stated prior art submitted by the Peer-to-Patent community was "inaccessible" directly to USPTO examiners.
5. Participants from 152 countries submitted nearly 350 references to prior art on 121 applications!

This striking example of harnessing public knowledge to improve a governmental process is currently inspiring patent offices worldwide. In 2008, the Patent Office of Japan launched their version entitled "Community Patent Review", opening up the patent process for public

participation, and the UK Intellectual Property Office and the European Patent Office are planning pilot programs likewise.

Peer-to-Patent reveals that citizen masses can support public task fulfilling, and can improve administrative processes with regard to quality and speed. Such increased responsiveness is especially attainable in all public proceedings where external knowledge and traditional feedback-cycles and public hearings are required by law. With citizen involvement in the Internet age, the opportunity of entering a caveat or making comments is far more distinctive and may accelerate all kinds of applications and legal actions.

Another good example in favor of public agencies acknowledging and making use of these practices is the “Peoplefinder” project, a demonstration of the potential of citizen-co-creation and collaboration. Peoplefinder was a very useful peer production-like application during the Katrina hurricane disaster – a relatively simple web-based GoogleMaps application (mashup) to help people locate family and friends. It proved that the Internet offers benefits, in supplying qualified information (in this case, knowledge of casualties and affected people). Peoplefinder enabled users to access a database of over 640,000 names of Katrina survivors, evacuees, and those who had remained behind in the devastated cities and towns along the gulf coast. Surprisingly, it was implemented by 400 volunteers and not by a company or a government agency (maybe another failure of the United States government to establish an effective response to the disaster). Nevertheless, it illustrates ultimately that in a time of high complexity of public problems new infrastructures and collaboration models can increase the effectiveness of value creation and have to be taken into consideration in order to get ready for the demands and (economic) challenges of 21<sup>st</sup> century democratic governance.

### **Collaborative Democracy**

The concepts presented thus far have discussed the instrumental value of integrating citizens into both decision making and implementation of public policy to improve both output and outcome performance. In the traditional categorization of citizen engagement and empowerment (King & Martinelli, 2005), however, this only reflects the bureaucracy-citizen interface (administration), such as citizen integration in the co-creation and innovation of public goods and services. The question remains of whether these ideas can improve and modernize the system of public governance, and political decision-making process as well. Citizensourcing in this context

refers to the political-citizen interface (politics) with regard to legitimacy, directing to appropriate priority setting, government accountability and transparency. It is the old question of setting up an accountable democracy and sustained participation, meaning that people should be consulted or involved in the activities that affect them (Warren 1999). In consequence, the policy cycle of program and agenda planning, execution, and appraisal has to be opened up for citizens' contributions. In this context, and correspondent to eDemocracy research, the presented methods and concepts face the challenge of making citizen participation in public policy decision-making more extensive (Qvortrup, 2007). It would enable a broader influence on policy outcomes, as having more individuals involved would increase transparency and accountability, and keep the government closer to the consent of the governed (Leighninger & Bradley, 2006). This may lead to synergistic benefits, such as enhancing civic education, strengthening the ties between citizens and government, increasing a government's political legitimacy, minimizing the inclination of conflicts, and improving the prospect of successful policy implementation.

The first step in designing new governance mechanisms in the public policy process can currently be found on several online platforms, probably a "reform" of the traditional town hall meeting ("21st Century Town Hall Meeting") and called "mini-publics" (by Harvard Kellogg School of Government professor Archon Fung, 2003). One famous political agenda-setting platform is [AmericaSpeaks.org](http://AmericaSpeaks.org). The mission of [AmericaSpeaks.org](http://AmericaSpeaks.org) as a non-partisan and non-profit organization is to engage citizens in the public decisions that impact their lives, and to offer a forum platform in which thousands of citizens, representing the diversity of a polity, may come together to solve public problems. This includes planning projects and idea generation analog to tier 1), such as the redevelopment of Ground Zero or the recovery of New Orleans (Lukensmeyer, 2007), but also more political, non-operative and non-administrational aspects, like public budgeting and policy agenda designing, tough issues like social security and health care reform, municipal budgeting, multi-state initiatives tackling child and adolescent health, or national conversations on complex policy issues like social security. [AmericaSpeaks.org](http://AmericaSpeaks.org) shows the capacity of citizens to pass sound judgment on public policy matters and provide high quality contributions to the policy processes. Given the right structure, this example demonstrates again that the public can make outstanding contributions to the policy cycle in addition to the use of a selected and often inadequate set of expert-driven tools, such as public hearings and surveys of public opinion, comparable to the market research constraints in the private sector.

Meanwhile, a wide range of online citizen communities have emerged, whose goals align closely with those of different parts of government and agencies. An example for this is Obama's ongoing input to policy via electronic town halls or the example of MoveOn.org, a progressive platform for congressional race support in 2006 and presidential support in 2008. Obama's campaign drew from virtually convened and coordinated, but face-to-face implemented house meetings conducted through MoveOn.org in 2006 to prepare a new progressive agenda from which to select congressional candidates for Political Action Committee (PAC) support. This project extended into support for the 2008 presidential race. Obama's campaign picked up where MoveOn.org left out in framing policy agendas, the "blueprint for America" and continues in ongoing virtual calls for input into policy decisions, particularly the health care dialogues most recently. They have used the same online, and online-coordinated face-to-face meetings to win the seat and develop policy positions.

These community spaces offer high benefits, comparable to the approach of private companies that use communities as a source of user-generated ideas and for facilitating product and service innovation. For government agencies, it means that the political sphere has to attain a better understanding of citizens' needs, and encourage effective collaboration between policymakers and citizens for a sustainable political agenda setting. Another aspect in this context is the opportunity to collaborate within the process of drafting laws and bills, suggesting that civic appreciation and compliance may be higher when citizenry has participated in the evolution.

A prominent example of this is the Policing-Act-Wiki. Due to a new Wiki launched by the New Zealand police, members of the public were able to contribute to the drafting of the new Policing Act in 2007. Simultaneous to the composing by parliamentary drafters, the opportunity was given to the public to suggest how a new Policing Act might look by contributing to the open Wiki system and updating the version of the original Police Act of 1958. In mid 2008, the Wiki version of the Policing Act was viewed by New Zealand parliamentarians, and passed as an official act called the "Wiki Policing Act 2008". Using this Wiki style of editing, citizens can edit their demands and proposals into laws, helping agencies in transition to Internet-based rulemaking as an opportunity to improve the quality and efficiency of their regulatory practice. Another example in the context of rulemaking is regulations.gov, the rulemaking initiative headed by the U.S. Environmental Protection Agency. Thanks to regulations.gov, United States

citizens can view rulings which are open for comment across agencies, using a single interface, and then post their comments on a ruling. By law, these agencies must respond to any substantive comment received. This kind of “Wiki Government” (Noveck, 2009) is finally facilitating public and private efforts to realize e-rulemaking's potential for an increased citizen understanding and participation in a government’s policymaking process, by inducing public participation beyond the traditional “notice-and-comment” processes.

The following Table 1 offers a summary of the successful Citizensourcing practices mentioned before.

**Table 1: Current examples of successful citizen collaboration and participation in the public sector**

<b>1) Citizen Ideation and Innovation</b>	<b>2) Collaborative Administration</b>	<b>3) Collaborative Democracy</b>
<p><b>Citizen Feedback and Recommendation Systems:</b></p> <ul style="list-style-type: none"> <li>▪ FixMyStreet.com</li> <li>▪ Patientopinion.org.uk (patient feedback in UK National Health System)</li> </ul>	<p><b>Urban Planning:</b></p> <ul style="list-style-type: none"> <li>▪ FutureMelbourne.com.au</li> <li>▪ Unifiedneworleansplan.com (urban planning for hurricane destroyed New Orleans)</li> </ul>	<p><b>21st Century Town Hall Meeting:</b></p> <ul style="list-style-type: none"> <li>▪ AmericaSpeaks.org</li> <li>▪ MoveOn.org</li> </ul> <p>Similar approaches:</p> <ul style="list-style-type: none"> <li>▪ deliberative-democracy.net</li> <li>▪ calhealthreform.org</li> <li>▪ californiaspeaks.org</li> <li>▪ democracylab.org</li> <li>▪ european-citizens consultations.eu</li> </ul>
<p><b>Innovation Contest Initiated by Public Organizations:</b></p> <ul style="list-style-type: none"> <li>▪ USAID Development 2.0 Challenge</li> <li>▪ Inducement Prizes at the National Science Foundation</li> <li>▪ U.S. Dept. of Energy Lighting Prize</li> </ul>	<p><b>Public Participation in Patent Examination:</b></p> <ul style="list-style-type: none"> <li>▪ Peer-to-Patent.org</li> <li>▪ PatentFizz, IP.Com or Patent Debate (no formal connection to USPTO)</li> </ul>	<p><b>Political Recommendation:</b></p> <ul style="list-style-type: none"> <li>▪ Number 10 Downing Street E-Petitions</li> </ul>
<p><b>General Public Sector Service Improvement:</b></p> <ul style="list-style-type: none"> <li>▪ www.showusabetterway.co.uk</li> <li>▪ Open U.S. Government Dialog (opengov.ideascale.com)</li> <li>▪ U.S. Transportation Security Administration's Idea Factory</li> </ul>	<p><b>Public Security:</b></p> <ul style="list-style-type: none"> <li>▪ Peoplefinder-Project reveals new public duties</li> <li>▪ Texas Virtual Border Watch (Texas-Mexico border observation via webcams)</li> <li>▪ Southern California Wildfire Response</li> </ul>	<p><b>Political Monitoring:</b></p> <ul style="list-style-type: none"> <li>▪ govtrack.us</li> <li>▪ data.gov</li> </ul> <p><b>Collaborative Legal Codification:</b></p> <ul style="list-style-type: none"> <li>▪ New Zealand Wiki Policing Act 2008</li> <li>▪ Regulations.gov (eRulemaking)</li> </ul>

## Conclusion

Starting with the emergence of citizen innovators and the open innovation processes, which represent a shift in R&D efforts of private companies, and which illustrate new strategies in innovation management, we can see how disruptive a transition from the “few” to “the many” might be. The specialized few can be outperformed by someone, hidden somewhere within the masses and being lured out by granulate assignments, low transaction costs, nimble online platforms, and sometimes heroic incentive and motivation mechanisms. Driven by the convergence of technology (Internet, communications, and social networking) we have shown that large, diverse networks of talent will solve well-defined problems faster and more efficiently than internal R&D troupes. This empowerment movement of external contributors beyond the boundary of the firm on the one hand and the new and emerging, subversive development of commons-based-peer production efforts on the other hand (e.g. Linux, Wikipedia etc.), is probably recasting the role of the individual in society and constrains a focus on online community shaping and working. This is perhaps the most democratic of all ideas – that individuals can play a vital role in shaping the world which they live in by increasingly making use of Internet arrangements, to impact the non-virtual economy and society.

But what does this all mean for the public sector institutions? We are confident that the benefits and principles behind InnoCentive, the open call for participation or the commons-based-peer production movement describe a new way of collaboration. In this article we have posed the question of how the perceived development may influence the public sector, with its special setting of citizen participation and integration. In our presented model (framework for citizen engaged governance) we differentiated between the different roles of citizens. Either they are regarded being customers and users (tier 1, fostering citizen ideation and innovation, as e.g. shown in U.S. Innovation Price programs), being taxpayers (tier 2, demanding more efficiency and effectiveness by collaborative administration, like the urban planning approaches in the United States or Australia) or being political constituents (tier 3, claiming collaboration in the democratic process, illustrated e.g. by electronic town halls).

Peer-to-Patent, for example, as a prominent experiment aimed at fixing the patent process, reveals how using the tools of the social web and broadcasting patent applications for open review can create a model for participatory administration. Probably such a model could support



any area of administration that depends on sound information for decision making. It is a hopeful first step that agencies already acknowledge that it can be worthwhile to collaborate, and that by designing a system with structured roles, a wider civic engagement online can be successful. At the same time, the boundary-spanning role is gaining more importance in civil officers' work, enabling them to press for central objectives in the face of competing decentralized solutions and collaborative input. Such dual role conflicts may eventually lead to a new kind of career for civil servants, as innovation and information managers. In the last consequence, we are not far removed from a patent examiner facing at a patent application to an officer in the Department of Justice, staring at a hundred-page reform bill. The example of the New Zealand Wiki for modernizing the police legislation is pointing in this direction. Instead of intransparent procedures and tampering by lobbyist associations and trade unions influencing the process until the original content has faded away, publishing the governments' proposals on a public Wiki is an encouraging approach, which allows citizens to participate and to observe the process of a law's evolution.

In the age of technology, where citizens, at least in the western world, have almost ubiquitous and broadband access to information and services, all kinds of organizations must offer a high performance while being transparent, collaborative, accountable and responsive if they do not want to forfeit trust, confidence and effectiveness. Bureaucratic cultures coined by negotiating legal command and control and closed boundaries of tradition have to be cracked towards cultivating permeable edges, fostering power-sharing and free interaction between groups and individuals inside and outside the public organization. The findings of this article are directed to the overall question of whether individuals or networks of citizens, in all of their diversity, can better support public administrations with regard to the management of resources and even solve public policy challenges. In this way, we have shown that the concept of "Citizensourcing" is likely to unleash the energies of citizens to solve public tasks when network innovation practices are applied to public administration and even to the policy decision-making process.

Getting acceptance from public agencies toward all these innovative practices is certainly harder than it is in the private sector, as the policy framework for Citizensourcing and its potential reforms moves so much slower, making it hard to implement such a radical concept. Moreover, public problems are often considerably different from the "low-risk" challenges of corporate product development. It is easy to think of potential limitations and risks e.g. that

vested interested groups or political parties may exploit the system in their favor, as large number of citizens may not be interested in such voluntary participation or regard it as a waste of time. But this is not a reason not to encourage further research in transferring and developing innovative ways of public participation and integration. Otherwise, governments will find themselves ill-prepared for the sustained pressure of citizen-driven policy activism. Moreover, if the gap increases between the way, in which citizens and companies collaboratively interact on the Internet on the one hand, and citizens and government on the other, there is a great risk that the citizenry will become increasingly dissatisfied if their expectations of what modern governance should entail are not fulfilled.

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