



Australian
National
University



Innovation in business and government: Looking forward

Sandford Borins,
Professor of Strategic Management,
University of Toronto
and
Research Fellow, Harvard Kennedy School

July 2012

Acknowledgements

The production of this paper is a result of the joint sponsorship, of Professor Sanford Borins's visit to Australia, between the HC Coombs Policy Forum at the Crawford School of Public Policy at the Australian National University (ANU) and the Australian Government's Department of Industry, Innovation, Science, Research and Tertiary Education (DIISRTE). Professor Sanford Borins visited Australia for the Australian Public Service (APS) Innovation Week that took place from 4-8 June 2012.

The research presented in this paper was supported by the Ash Institute for Democratic Governance and Innovation, Harvard Kennedy School. Research assistance was provided by Ms Kaylee Chretien. Professor Borins also acknowledges the contributions of Beth Herst, Jeremy Nolan, Alex Roberts, and Christopher Vas.

Innovation in Government is one of the themes pursued under the Productivity Policy Research Program at the HC Coombs Policy Forum, which seeks to provide new and global perspectives on issues of importance for the Australian Government.

Introduction

Financial meltdowns, bursting real estate bubbles, persistently high unemployment, debt crises, and currency fears – we live in an era when macroeconomic dilemmas and their spreading consequences consume policy makers, financial managers, and citizens alike. If the debate over causes and culpability remains bitter and polarised, global discussions about macroeconomic policy have been no less conflicted, dividing along familiar ideological lines. The political left generally advocates increased government spending financed either by deficits or tax increases for the rich; the political right counters with demands for tax cuts and reduced government spending.

But there is a third, far less contentious solution that may be born in crisis, but generating effects that long outlive it. A solution implemented at the micro economic level, but capable of affecting the macro level as well. A solution that seeks to engage and inspire, rather than simply to react. That solution is innovation. Both the left and right favour the application of ideas that will increase productivity in existing firms and government agencies and that will stimulate the development of new products and new firms.

Every country is hoping that a significant share of the new products and new firms will be domiciled within its borders. Every organisation, whether public or private, understands the value of reinvention to motivate employees and impress clients, particularly in difficult times.

While my primary focus here is on the public sector, we must consider whether there are lessons to be learned from the success of notable private sector organisations in fostering innovation. I will also consider the impact on public sector innovation of the two most significant overarching policy developments in the last five years: economic stimulus in response to the global financial crisis, and austerity intended to reduce government deficits. Finally, I will discuss some of my latest research on innovation in government, and explore the implications of my findings for future public sector innovations.

Private Sector Innovation

In a private sector context, innovation is defined as the transformation of an invention into a product or process intended for widespread commercial use. Discussion has therefore focused on those sectors of the economy or firms that are innovating most successfully. At any given time, the degree of innovation is uneven across sectors. In the United States, for example, the domestic automobile industry is attempting to make up ground relative to the world's most advanced manufacturers, which are overseas; the banking sector is still trying to overcome the losses caused by destructive innovations such as credit default swaps and collateralised debt obligations¹; the housing sector is still burdened by unsold and unmarketable inventory; and the health sector is struggling with the challenge of cost containment.

The information technology sector, broadly defined, is widely perceived as the most innovative part of the US economy. This has been so for at least the last two decades, but with an emphasis that has changed over time. A little more than a decade ago, during the wave of Internet startups, attention was focused on the innovativeness of young entrepreneurs who were attempting to put products and services online for the first time. Following the bursting of the tech bubble, there has been a consolidation of the IT sector, so that it is now led by a handful of firms that have grown rapidly and profitably: Apple in smart-design hardware, Amazon in online retailing, IBM in consulting services, Google in search, and Facebook in social networking. The question that innovation researchers are now focusing on is how these firms support innovation.

This is an ironic question, because it is often assumed that there are impediments to innovation in large firms and that the most significant innovations come from small startups. Some of the large firms (Amazon, Google, Facebook) were Internet startups that grew, so the question really being asked is how they can continue to be innovative.

Two well-received books, both published this spring, are indicative of this growing focus on innovation within large organisations. John Gertner's *The Idea Factory: Bell Labs and the Great Age of American Innovation* (2012) is a history of Bell Labs, the research arm of the United States telephone monopolist (at least until the mid-Eighties) American Telephone and Telegraph. Jonah Lehrer's *Imagine: How Creativity Works* (2012) is a summary of academic research on both individual creativity and organisational innovation, aimed at the general reader.

Gertner tells the history of Bell Labs from its establishment in the 1920s, focusing on some of the major inventions that occurred within its walls (the transistor, information theory) and the associated inventors (Bardeen, Brattain, and Shockley, who shared the 1956 Nobel Prize in Physics for the transistor; Claude Shannon, universally recognized as the pioneer of information theory). In concluding his story, Gertner attempted to explain Bell Labs's success. He attributed it to the ready availability of funding for researchers, an organisational culture (for example long office corridors interspersing researchers of different disciplines) that encouraged interdisciplinary sharing of ideas, willingness to support research on a promising idea for a long time, and a willingness to support potentially disruptive basic research rather than only incremental applications.

¹ As I write this, JP Morgan Chase CEO James Dimon has revealed that it has taken a loss of between US\$2 and US\$5 billion on credit default swaps against corporate bonds.

Lehrer linked neurological research on creativity with behavioural research on innovative organisations. For example, the neurological research on creativity demonstrates the importance of daydreaming, contemplation and free association, and he notes the practice of 3M and Google to provide facilities on their campuses – a name indicative of their culture – for contemplation and play, as well as their practice of giving staff one day a week (Google’s Innovation Time Off) to pursue their own intellectual interests. Lehrer also discussed Steve Jobs’s design of workspace at Pixar to encourage intellectual collaboration by placing numerous shared facilities – mailboxes, cafeteria, even washrooms – in a large central atrium. Lehrer was also interested in how Silicon Valley’s concentrations of skilled employees and venture capitalists nurtures high-tech start-ups, and observed that California’s legal environment encourages professional mobility because it does not enforce non-compete or non-disclosure agreements.

Another approach to stimulating innovation used in the private sector is open innovation.

This involves inviting external communities to help a company solve problems. The open innovation approach requires corporate willingness to make proprietary information publicly available in order to dramatically increase the number of people working on a problem. Open innovation may be implemented either on the company’s own website or through an open innovation provider such as innocentive.com. ‘Seekers’, to use its terminology, offer rewards for the best solution: a quick look at InnoCentive shows that most rewards are in the US\$10,000 range, and are occasionally as high as US\$50,000 or US\$100,000. One of the tenets of students of creativity is that people who bring to bear an entirely fresh disciplinary perspective on a problem may be more successful than those who are deeply familiar with it. Open innovation, based either on public web sites such as InnoCentive or on an Intranet, could also be used successfully within a large corporation, where one of the consequences of size is that employees would not otherwise be aware of the variety of innovation challenges faced by the corporation.

Public Sector Innovation

Private sector innovation, which focuses on the design and production of new products, is only partially relevant to the public sector. Much of what the public sector does is deliver relatively stable public services. Public sector innovation usually involves new methods of delivering those services. Occasionally the public sector develops new programs, and we could think of them as being analogous to the private sector’s new products.

But the experience of private sector firms that have created a culture that encourages innovation is relevant to public sector organisations attempting to do likewise.

The two most significant policy developments in the last five years – economic stimulus in response to the global financial crisis and austerity intended to reduce government – have had a mixed impact on public sector innovation.

The objective of the fiscal stimulus package was to spend money quickly, particularly in areas of the economy where there were slack resources, most notably construction. 'Shovel-ready products' became the order of the day. Public sector innovation, whether in terms of how public services are to be delivered, or in the creation of social infrastructure that can be used in novel ways, takes time. For example, the elements of the Canadian Government's fiscal stimulus package that affected me most were a subsidy for home renovation (that my neighbours and I used to replace our fences), the paving of a unused railroad line in the neighbourhood as a bicycle path, and the replacement of an academic building opened in 2004 with one opened in 2011, albeit using greener technology. I think that most citizens of most countries have had similar experiences. It would be a very interesting research project to sample fiscal stimulus packages internationally to see how much innovation, either within or external to the public sector, they embodied. My expectation is that the answer would be not a great deal, as urgency trumped other values.

Despite the ending of the fiscal stimulus packages, most governments have found themselves running large deficits as a result of the ongoing cost of bailouts entered into during the financial crisis, interest on the debt incurred by fiscal stimulus, and the revenue loss due to less-than-full employment. So the priority has shifted to fiscal austerity programs to eliminate deficits. Bond rating agencies and the bond markets have increased the pressure to eliminate deficits for countries that already have large debt loads. There may be some disagreement between the left and right about the speed and nature of the cuts, but cuts remain a priority for both.

How will austerity affect public sector innovation? It will likely depend on the political ideology of the government, proximity of the deadline by which the cuts are to take effect, and depth of the cuts. Governments of the right likely have their own list of programs they want terminated for ideological reasons, and austerity programs provide an opportunity. Governments of the left will have a shorter hit-list, and their focus will therefore be on finding less expensive ways to continue achieving the purposes for which existing programs were designed. If the deadline is short, as in the case of a fiscal stimulus package, there is little scope for innovative cutting; the priority becomes finding programs that government can immediately cancel. The depth of the cuts would operate in the opposite way, in the sense that once all the 'executive order-ready' cuts have been made, governments must start to contemplate more radical solutions.

Geoff Mulgan (2012), a former adviser on innovation to the United Kingdom Government, and now Chief Executive of the NESTA Trust, an organisation whose objective is to promote innovation, contrasts traditional budget cuts (stop doing things, freeze pay, offer buyouts, lay off staff, stop recruitment, delay capital expenditures) with organisational innovation (find economies of scale in government operations; find economies of scope; restructure production processes, for example to eliminate the costs of fixing mistakes by doing things right the first time; devolve responsibility through co-production, volunteers, or partnerships with civil society; and reduce costs by increasing transparency of public spending). Certainly the types of organisational changes Mulgan discusses lay out an agenda for using innovation to respond to austerity.

The question is whether politicians in charge prefer traditional or innovative cuts and the speed with which they want the cuts implemented. The organisational innovations Mulgan outlines cannot be accomplished instantly, as they would encompass steps such as analysis and reconfiguration of operations and negotiating external partnerships.

Research that I have been doing using applications to public management innovation awards (Borins 1998, 2001, 2006) provides a different vantage point for studying the process of public sector innovation and for forecasting future developments. The semifinalist level application form for the Harvard Kennedy School's Innovations in American Government Awards Program requires comprehensive answers that enable the researcher to draw a detailed portrait of the innovation process.

In addition, it is possible to identify exogenous factors affecting public sector innovation and make forecasts about these factors and how they will affect the nature and extent of public sector innovation. My current research is examining applications to the 2010 awards program, so it is informed by the most recent experience. I am in the midst of coding 125 semifinalist applications, and have now completed 78. As the applications to be coded were chosen randomly, the table entries that follow should be very close to those derived from the full set of 125 semifinalists. The remainder of this section previews the results of this research, which will ultimately be presented in a new book (working title: *Innovating with Integrity 2.0*).

Table 1: Nature of the Innovation

| | US 2010 | Commonwealth | US 1990s |
|-----------------------------------|---------|----------------------------|---------------------------------|
| Partnership within one government | 74 % | 41 % (all partnerships) | 21 % (all gov't partnerships) |
| Partnership among governments | 44 | | |
| Partnership with non-profits | 74 | | 28 (all non-gov't partnerships) |
| Partnership with private sector | 59 | | |
| Process improvement | 72 | 66 | 34 |
| Uses IT | 35 | 57 | 28 |
| Citizen empowerment | 24 | 14 | 26 |
| N | 78 | 56 | 217 |

Note: Commonwealth countries include Canada, Australia, UK, New Zealand, and Singapore.

2 These competitions are of varying significance. Smaller ones involve the development of communications vehicles such as websites or social marketing campaigns. These could be considered analogous to outsourcing, except that rather than rewarding a contract to a winning proposal, the government asks all bidders to complete the project and then selects the best one. In any event, the amount of activity on challenge.gov indicates that this approach has considerable potential.

Table 1 shows the most significant characteristics of the 2010 public sector innovations in the US, of a sample of public sector innovations in the economically advanced Commonwealth countries in 1998 and 2000, and of a sample of public sector innovations in the US in the 1990s. As multiple characteristics were coded, they add to more than 100 per cent. The most significant change for the recent US sample is the much increased incidence of partnerships, both within government and between government and the private and non-profit sectors. This exemplifies the growing trend towards networked governance; few innovations involve the traditional model of an agency working on its own to improve service delivery. Other characteristics include process improvement, the use of information technology, and citizen empowerment.

Future developments for all of these characteristics should affect the nature of innovation in government in the future. Information technology will be evolving rapidly, and new developments such as cloud computing and the attaching of all kinds of machinery, devices, and appliances to the Internet (the 'Internet of things') are likely to find public sector applications. We can expect to see some public sector use of open innovation. The United States Government has taken the lead on its website challenge.gov that currently shows approximately 300 competitions now being hosted.² In another type of open innovation, government does not ask for specific solutions, but rather makes its databases freely available to citizens and web developers who will invent new applications.

This was first pioneered by the District of Columbia (for which it won an Innovation in American Government award in 2009) and quickly followed by the federal government (www.data.gov). Social networking sites have now become a major locus of citizen empowerment initiatives, launched by government, political parties, or advocacy groups in civil society.

Process improvement is a common theme of many innovations. There may be several components to a process improvement initiative, including the gathering and analysis of internally-generated data regarding the service delivery process, the application of some of the restructuring ideas presented by Mulgan, and the application of recent findings from applied psychology (for example the use of opt-out rather than opt-in choice for instances of publicly virtuous behaviour). Data analysis for performance improvement was pioneered by New York City, first in policing, but has been taken up by many other governments. Consultancies, most visibly IBM, have looked to the public sector market as one in which to apply their capabilities in data analysis. These suggestions about the next wave of public sector innovation are not meant to be exhaustive, but rather to illustrate the point that public sector innovation often involves applying the new methodologies and ideas the private sector is using.

Table 2. Originator(s) of the Innovation

| | US 2010 | Commonwealth |
|------------------|---------|--------------|
| Politician | 28 % | 11 % |
| Agency head | 38 | 39 |
| Middle manager | 38 | 75 |
| Front-line staff | 22 | 39 |
| Interest group | 12 | 2 |
| N | 78 | 56 |

Table 2 shows the originators of the innovations in both the US and the Commonwealth countries. The table entries sum to more than 100 per cent because often several people of different organisational levels were involved in developing an innovation. The robust involvement of middle managers and front-line staff was the origin of reference to 'local heroes' in the subtitle of my 1998 book on innovation in American government. It suggests the current reality is much more diverse and complex than the traditional top-down public administration model, in which politicians develop policy or management ideas which public servants then implement.

In addition to considerable bottom-up innovation emanating from front-line staff or middle managers, the recent US data show some innovation being launched by external interest groups.

This should also be contrasted to the traditional innovation model in the private sector, in which innovation usually comes from laboratory, or campus-based, scientists and engineers, rather than from either front-line workers, who do not have the technical skill, or senior managers, who are too busy supervising to be involved in the work of innovation.³

Table 3. Conditions Leading to the Innovation

| | US 2010 | Commonwealth |
|---|---------|--------------|
| Political influence (legislation or lobbying) | 47 % | 36 % |
| Crisis, actual or anticipated | 14 | 14 |
| Problem to be solved | 79 | 73 |
| Opportunity | 21 | 48 |
| N | 78 | 56 |

3 The open innovation movement in the private sector can be seen as an attempt to compensate for the tendency of the laboratory model to be inward looking.

Table 3 shows the most significant conditions leading to public sector innovations. The most striking finding, with almost identical numbers for both the US and the Commonwealth countries, is that innovations are attempts to solve problems, rather than response to crises. This contradicts the cynical view of the public sector that postulates that because departments or agencies are often monopolies, they will ignore problems until they result in dramatic and high-profile performance failures. These innovations come about as a result of proactive problem solving by public servants and/or politicians. A second interesting finding is that many innovations are the result of opportunities. In addition to new technologies, these opportunities sometimes involve new sources of revenue. One windfall mentioned in several of the applications to the Innovations in American Government Awards was the 1998 Tobacco Master Settlement Agreement.

Looking to the future, we would want to forecast how these conditions will evolve and what sort of innovations will result. There is no shortage of major problems government must confront, such as demographic change and an ageing population, the decreased availability of non-renewable resources, and climate change.

Innovations will also take advantage of new opportunities, in particular those created by new technology and fiscal windfalls.

The innovation questionnaires also asked what obstacles were encountered in implementing an innovation. The three key obstacles that were reported were bureaucratic resistance, logistical problems, and the need for resources, with each compromising about 20 per cent of the total number of obstacles cited. Logistical problems often could be solved with work-arounds and creative management of resources. Response to bureaucratic resistance involved the application of organisational change tactics such as consultation, cooptation, compensation, and training. Finding resources was the most challenging of the three obstacles. Responses included diversifying the sources of funding, for example finding corporate or non-profit sources of program funding, making do with what was available, and persisting in the search for funding.

The diversity of funding sources in the recent US innovations is illustrated in Table 4.

Table 4. Funding Sources for 2010 US Innovations

| | Originator of Innovation | Contributor to Funding |
|--------------------|--------------------------|------------------------|
| Federal Government | 12 % | 47 % |
| State Government | 37 | 47 |
| Local Government | 51 | 67 |
| Private Sector | | 29 |
| Non-Profit Sector | | 24 |
| User Fees | | 14 |
| N (100 %) | 78 | |

Table 4 shows that, for example, though only 12 per cent of the 78 innovations were submitted by the federal government, 45 per cent of the innovations received some of their

funding from the federal government. Another way to think of the data is that most innovations received funding from several sources, both within and external to the public sector.

Table 5. Major Remaining Shortcomings of the Innovation

| | US 2010 | US 1990s |
|------------------------------------|---------|----------|
| Needs fine-tuning | 44 % | 29 % |
| Lacks resources | 37 | 39 |
| Hasn't spread as much as hoped | 21 | 12 |
| Difficulty maintaining partnership | 8 | 5 |
| N | 78 | 217 |

Table 5 shows the results when US innovators were asked about the ongoing shortcomings of their programs. The need for fine-tuning can be seen as ongoing logistical problems. The shortage of resources remains a burden for a large number of innovators. This finding brings us back to a key point regarding innovation, namely that it requires resources. This was made clear by private sector innovation leaders, such as Bell Labs providing stable internal funding for its researchers, and companies like 3M and Google giving research, development and engineering staff one day a week to pursue their own intellectual interests. And Silicon Valley's startups are funded by venture capitalists. Public sector innovation needs funding. Sometimes it can be provided from regular tax revenues.

Sometimes there are windfall funding sources, such as the Tobacco Master Settlement Agreement. In other instances, the resources to support innovation have been taken from slack resources hoarded by clever public sector managers. Traditional budget cuts usually, as a first step, eliminate the slack resources. Hidden slack that can be used to underwrite experimentation is surrendered to the agency controlling spending. When all available staff must work harder, for example because of non-replacement of attrition, anything comparable to Google's Innovation Free Time disappears.

Conclusion

This paper has presented a portrait of public management innovation.⁴ The portrait is robust, in that it shows consistency within the US over two decades, and between the US and the economically advanced Commonwealth countries. The US data also show evolution over time, in particular with respect to the increased salience of partnerships within government and between the public and private or non-profit sectors. The portrait has a particular public sector flavour in terms of the importance of problem solving and the role of initiators at a variety of levels of the innovating organisation.

From the point of view of forecasting trends in public sector innovation, two key variables to look at are the anticipated set of problems to which the public sector must respond, and the evolution in the building blocks of innovation, that is the materials available for use by innovators.

While the applications to innovation awards enable us to develop portraits of innovative programs, they do not shed much light on departments and agencies that do not submit applications. We would like to see the spirit of innovation spread through government to the greatest extent possible. That would suggest facilitating the type of innovations presented here. Thus, if inter-organisational cooperation is displayed in such a high percentage of these applications, it is important that rules and practices within government encourage it.

If openness to individuals and groups outside government can contribute to problem-solving, then the public sector's rules and practices should encourage public sector versions of open innovation. The magnitude of the struggle many innovators face to find resources suggests that public sector innovation could be enhanced through the creation of public sector analogues of private sector venture capital.

The widespread trend to austerity will have significant implications for public sector innovation. On the one hand, it puts pressure on government to restructure services in imaginative ways. On the other hand, it may remove the resources necessary to support innovations that would do this. Central agencies overseeing austerity programs will be challenged to combine the pressure to restructure with the provision of at least some additional resources to facilitate the process of restructuring.

In times of crisis, it is easy to mistake innovation for a luxury, impracticable or even irrelevant to the daily task of putting out fires and staving off looming disasters. It is none of these. Innovation in government, particularly in these 'interesting times', may be a challenge, but it is also a necessity. The question must be not if, but how, to make it happen. I hope this paper has provided some answers.

⁴ I deliberately chose not to use the term 'model' because its connotation is usually as being derived from theory and not yet tested empirically. In this research, the portrait is inductive, derived from the data. A more appropriate term of reference would be a Weberian ideal type.

Postscript: Canada Day, 2012

This paper was written in May 2012, before my visit to Australia in early June. I am adding a postscript on 1 July 2012, which happens to be Canada Day. Like Canada, Australia's abundance of natural resources, stable banking system, and healthy public sector finances are all reasons to be sanguine about its economic prospects. As argued above, the availability of financial and human resources is a key factor supporting innovation.

The imposition of a four per cent cut to the base budgets of all departments in the Commonwealth Government for the fiscal year that begins today will necessarily have an impact on the level of innovation. What is not yet clear is how this relatively significant cost reduction mandate will play out in the arena of departmental budgeting. What will be the balance between traditional budget cuts and organisational innovation?

The APS's recent Innovation Week program of events impressed this participant-observer with its rich complement of activities, widespread participation, and evidence of a strong commitment to innovation as a key public service value. Internationally, not many other public services – certainly not Canada's – are celebrating innovation as visibly or robustly.

Finally, I note that DIISRTE is on the verge of launching its Australian Public Service Innovation Indicators (APSII) project. The comprehensiveness of the questionnaire is cause for optimism that the project will provide invaluable information about innovations within the APS as well as the extent of factors that both encourage and impede innovation. Such information can only advance the cause of innovation in government, and thus provide even more to celebrate during Innovation Week in future years.

References

- Borins, Sandford. (1998). *Innovating with Integrity: How Local Heroes are Transforming American Government*. Washington: Georgetown.
- Borins, Sandford. (2001). 'Public management innovation in economically advanced and developing countries.' *International Review of Administrative Sciences* 67: 715-31.
- Borins, Sandford. (2006). *The Challenge of Innovating in Government*. IBM Center for the Business of Government. Available online at www.businessofgovernment.org/pdfs/BorinsReport.pdf.
- Gertner, Jon. (2012). *The Idea Factory: Bell Labs and the Great Age of American Innovation*. New York: Penguin.
- Lehrer, Jonah. (2012). *Imagine: How Creativity Works*. New York: Penguin.
- Mulgan, Geoff. (2012). *Austerity and Innovation*. Presentation, Toronto, May 2.

CONTACT US

HC Coombs Policy Forum

Crawford School of Public Policy
JG Crawford Building 132
The Australian National University
Canberra ACT 0200
Australia

T +61 2 6197 0034

F +61 2 6125 9767

W publicpolicy.anu.edu.au

General Enquiries: coombs.forum@anu.edu.au