

Break-Through Innovations and Continuous Improvement: Two Different Models of Innovative Processes in the Public Sector

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*Two models are presented of the institutional settings and mechanisms in which innovation takes place in the public sector. One focuses on break-through technologies that are large, significant and can solve the performance problems of whole industries and the other focuses on continuous improvement in learning organizations. Two features distinguish these models. The first involves the size and character of the innovations: break-through innovations are characterized by a small number of very new, distinctive innovations that transform the prospects of a whole sector; while continuous improvement innovation is characterized by the accumulation of a large number of small adaptations that can lead an organization to improve its performance. The second difference involves the unit of analysis: in break-through innovation, the focus is on an industry or sector in which a disruptive technology appears and the mechanisms that allow it to spread. In continuous improvement, one looks inside organizations to discover the cultural and administrative characteristics that allow them to be innovative. **Author: Can you make this a bit shorter and 'punchier'?***

An important aim of *Creating Public Value* (Moore, 1995a) was to focus attention on initiative and innovation as key components of 'strategic management' in government. (**Author Explain what *Creating Public Value* was.**) This took for granted that the political mandates that guided public agencies would change frequently, and that the concrete conditions and particular clients public agencies faced in trying to achieve their assigned mandates were highly variable. It naturally follows, then, that to remain efficient, effective, and responsive, government managers would have to innovate.

Such innovations could increase public value in public sector organizations in at least three different ways:

- The first generated better methods for performing their core, basic function. This could be viewed as an innovation that produced a general productivity increase.
- The second would be to exploit the performance advantages that could be gained by abandoning their one-size-fits-all

approach in favour of one that encourages adaptation and customization of their basic operational procedures to meet the demands of varied circumstances and clients. This could be viewed as a set of innovations that achieved more customization in the operations of the agency.

- The third is to explore new uses of their organizational capabilities by introducing new products and services that can be used to deal with different parts of their current mission, or even meet a need that is outside their current mission. This could be viewed as a strategic innovation insofar as it repositions the organization in its environment by changing the set of functions it performs and services it provides.

Because *Creating Public Value* focused on helping individual managers do their jobs, it paid less attention to the institutional features of the governmental system that served to encourage or discourage innovation in the public sector. It assumed that the 'managers' of

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public sector organizations, both political appointees and senior civil servants, have some authorization to innovate. Elected officials have standing as innovators because they have stood for election, and will soon have to face the voters again. Thus, they remain accountable to the people. Civil servants have some right to innovate by virtue of their expertise and their experience. That is recognized in their job descriptions by giving such officials certain kinds of policy responsibility that encompasses finding ways to improve the performance of the organization in existing core functions. But whether the rights extend to the interest in customizing operations, or in finding new uses of the organization is more uncertain.

Most managers we met in executive programmes at the Kennedy School thought they had very narrow tolerances in which to innovate. After all, most imagined innovations in government involved risks of failure, as well as a chance for success. And substantive failures in government seemed to be punished quite harshly, particularly if the substantive failure were combined with a process failure to acquire the appropriate degree of authorization to make an innovation. Consequently, most government managers thought they needed some special kind of authorization to gamble taxpayer dollars, client welfare, and the public interest on new, untested ideas.

Creating Public Value thus offered innovation seeking government managers some advice about the kinds of political management that could authorize them to do so. Presumably, if that advice was good, and officials followed it, the rate at which the government could innovate as a whole would increase. But even if individuals learned how to innovate in the demanding circumstances of the public sector, it could still turn out that the system as a whole generated too few innovations to meet the demands for efficiency, effectiveness, and responsiveness. Because the time, focus, and courage of senior officials was limited, and the focused, rational attention of the public unreliable, it was possible that the requirements for democratic authorization were so demanding as to slow the pace of innovation to a level well below what would be desirable.

This article describes two models of the institutional settings in which innovation takes place. The article is an early attempt to characterize, evaluate, and improve the institutional designs we now rely on to generate, sustain, and diffuse value-creating innovations in the public sector. One model focuses on break-through technologies that are large, and

robust, and can solve the performance problems of whole industries. The other model focuses on learning organizations that seem to have a continuing capacity to improve their operations and do so through the daily accumulation of a large number of small innovations that results in an important change in overall organizational performance.

These ideas emerged from a Ford Foundation-sponsored programme that engaged the Kennedy School of Government and the practice community in an effort to identify important government innovations, and the processes that produced them. For a broad survey of that project and some of its important conclusions, see Altshuler and Behn (1997).

Experience in that project forced us to recognize and seek to connect the models. Our initial ideas were closely aligned with the industry break-through model. As we went along, however, important questions and issues arose that encouraged us to think about the organizational improvement model as well. Eventually, we came to understand that these models were directing our attention to several quite different processes that were worth studying to try to develop an improved practical theory to support value-creating innovation in government.

The Ford Foundation Innovations Project

The Ford Foundation is a well-known philanthropic organization in the USA (Abramson and Spann, 1998; Magat, 1999; O'Connor, 1999; Pifer, 1984). In the mid 1980s, the Foundation began to focus its attention on innovation in government, mainly because it had long depended on an innovative government to help it achieve its goals. The Foundation thought one important role it could play in a democratic society was to act as a source of 'risk capital' for the public sector. Private money, rather than public money, could be used to support risky research and development activities that looked into the causes and then developed and tested solutions to important public problems ranging from contagious illness, through community disintegration, to chronic, persistent poverty. While it had enough money to support such R&D efforts, the Foundation could never come close to the fiscal power of government. Consequently, to improve conditions in the world, it needed an innovative government committed to searching for effective solutions to important public problems that it could then embrace, and 'take to scale'.

Another reason for the Ford Foundation turning its attention in this direction was more explicitly political. The political right in the US had been successfully hammering away at inefficient and unresponsive government agencies by unfavourably contrasting them with highly efficient, highly responsive, customer-oriented private sector organizations. In this imagery, innovation was seen as the key to efficiency and effectiveness. Government, with its stodgy, bureaucratic methods, could not hope to keep pace.

This argument began as an attack on government's efficiency in achieving an established set of public purposes. But the argument quickly became an attack on the purposes of government as well. It wasn't that government's purposes were wrong—they were often humane and generous—but they were practically impossible to achieve. Thus they ought to be abandoned.

The Ford Foundation was willing to join in an effort to support innovations in government to find more efficient means of achieving established goals. But it was reluctant to join an effort to discredit the wider purposes of government. It needed to be able to show that government was, in fact, highly innovative, and had the means for achieving what the Foundation hoped would remain ambitious social goals.

To achieve these goals, the Foundation created an Innovations Award Programme in which it would give a \$100,000 to each of the 10 most important innovations in the public sector each year for a period of ten years. It is tempting to see this programme only in terms of a source of funds to support innovations in the public sector. But, as a relatively durable feature of the sector, this programme would implicitly alter the system that authorizes and produces innovations in the public sector. It would provide the kind of recognition and financing for innovation that had previously been lacking.

All bureaucrats across the country were invited to undertake an innovation that could earn an award. Those who had already produced what they judged to be an important innovation were encouraged to present it, and have it discussed in a wider community. The Kennedy School of Government was enlisted to help the Foundation to vet the thousands of proposals that were sent in, and also to engage in research about the factors that seemed to stimulate productive innovations in the public sector.

Model 1: Break-Through Innovations at the Industry

Level

The enterprise was initially dominated by a particular idea about how innovation should ideally occur in the public sector, i.e. an 'industry break-through' model of innovation. The key idea is that the fundamental innovations that government needs to improve its performance are the big ones, those that can transform government's overall approach to a problem. Government has to find new ways to prevent or treat cancer, or teach disadvantaged kids to read and write, or halt the slide of the nation's cities as economically and socially viable communities. In order to achieve these break-throughs, society as a whole has to be able to recognize the break-throughs when they appear and find the means to rapidly disseminate these ideas across the relevant field. Thus, the operational goal of the Ford Foundation's Innovations Awards became to find and encourage the dissemination of important break-through methods of dealing with important public problems.

These operational goals focused the Kennedy School's research attention on two issues at the core of this programme:

- Developing the criteria we would use to judge the importance of any particular innovation (necessary to ensure that we were focusing our attention on innovations that were truly important).
- To try to understand the processes that encouraged (or discouraged) widespread dissemination of these big, break-through ideas.

Both turned out to be important and challenging questions.

Criteria for Assessing the Importance of a Given Innovation: With respect to the question of what constituted an important innovation, some criteria were obvious (Leonard, 1988). The programme should have produced a desirable result: something really new; or if not entirely new, a significant departure from conventional practice in a field. The size of the effect it produced would be significant, not simply a marginal improvement. There would be reason to believe that the effect was robust in the sense that the same effect could be produced by using the same method in circumstances different from the original context. The programme would have characteristics (such as simplicity, low cost, or self-financing) that would allow it be disseminated quickly and easily across an industry. And so on.

Yet there were also some more confusing issues. For example, we wondered whether we should view some failed innovations as important, either because they decisively cut off a line of development that seemed plausible, but would ultimately prove unsuccessful, or because the way in which they failed put us on the right track for the future. We worried that if we only rewarded successful innovations, we could not properly encourage innovation, because we had to encourage innovations that would fail as well as those that could succeed just as many innovative businesses had emphasized the importance of failing as well as succeeding in innovating. General Electric, for example, had built a culture in which failure, as well as success, was celebrated.

We also worried that the desire to have confident knowledge that something worked in a robust and reliable way imposed a heavy burden of scientific evaluation on innovations, and that such a requirement would dramatically slow the rate at which innovations could be assessed (Moore, 1995b). Ironically, then, the pressure to produce successful and effectively evaluated innovations might suppress the kind of innovativeness that was necessary both to find the important innovations and to have them spread quickly and widely through the world. These losses might well be compensated by the frequency with which bad ideas were kept from becoming fads. But that put a great deal of pressure on the quality of the screen that distinguished effective, robust innovations from those that were less effective, or required more particular circumstances to succeed. This capacity to distinguish good from bad innovations relatively early in the process is one of the most important processes in a system designed to maximize the total number of good innovations, a point addressed elsewhere in this edition by Hartley.

In the background of our worries was the uncertain relationship between being able to find and disseminate important innovations on one hand, and the wider question of how to encourage innovativeness as a routine practice in the public sector on the other. It was one thing to find and encourage important innovations. It was quite another to develop the institutions that could encourage innovativeness more generally, including the encouragement of failures, and the development of systems that could quickly and reliably distinguish between failed and successful innovations.

Going to Scale: The Processes of Diffusion and

Dissemination: The second big question—how to disseminate important innovations—also had some obvious and not so obvious elements to consider. The obvious part was that many individuals believed that dissemination was the central problem in public sector innovation. In their view we already had plenty of ideas that were known to work. The problem was to develop the political will to finance and otherwise support the widespread adoption of these known to be successful innovations.

This view was most eloquently developed by Schorr (1988). She argued that we had for a long time been telling ourselves that we were really committed as a society to achieving important social goals and that the only thing that was holding us back was the absence of effective means for achieving those goals. It was not our moral commitment that was suspect, but our technical capacity. Therefore even though we would be glad to spend our money on public purposes if we could be sure they worked, it did not make sense to spend the money for mere expressive purposes if the money could not be expected to produce the result. Yet this was for Schorr a mere rationalization for a moral failing. She demonstrated that there were, in fact, well known and well established methods for achieving social goals. The problem was not that we did not know what to do. The problem was that, knowing what to do, we still shrank from doing it because we were unwilling to tax and regulate ourselves enough to achieve the desired results. The problem was not in inventing ideas that worked; the problem was in taking the ideas that were known to work to the desired social scale.

Importantly, Schorr's argument was taken up in a somewhat different form by another group from a very different part of society, a cadre of 'new philanthropists' in the USA. These were individuals who had (typically) made a great deal of money in the dotcom sector, and were now ready to bring their insights and methods to the world of philanthropy. They developed a concept called 'venture philanthropy', which likened effective philanthropy to the sort of 'venture capitalism' that had built the dotcom industry (Letts *et al.*, 1997). In this conception, the problem was first to develop a new technology (i.e. an innovation that works) and then find a way to help it 'go to scale'. They understood that the process of taking an innovation to scale was often a very different process from creating the innovation in the first place: a different level of funding was often needed and different kinds of

leadership and managerial skills were required. The venture capitalists had developed methods of working with innovators and innovative ideas that had succeeded in moving the ideas quickly to commercial success. They thought these methods would work equally well in taking good ideas to scale in the public sector.

While there was agreement that disseminating an important innovation or taking an innovative idea to scale were important parts of any effort to strengthen public sector performance, the two groups committed to these ideas had markedly different ideas about the process by which a powerful, new idea became conventional practice. The idea of diffusion dominant in the foundation and government world was one in which a particular idea was developed, and was then embraced by different organizations in the same industry. A police department in Boston would develop a programme that seemed to be effective in reducing youth violence. That idea would be picked up by a police department in Baltimore that faced a similar problem. The new idea would not be held proprietarily by one organization; it would hop from one organization to another (Friedman, 1997).

A key assumption in this model was that public organizations were eager to find means to improve their performance, and were constantly scanning their environments to find better means for achieving their desired results. There was also an assumption that the organizations that developed the ideas had no proprietary interest in holding onto them, and they would be happy if other organizations wanted to imitate them. There was even an expectation that organizations would be willing to spend their own resources to provide the technical support other organizations needed to implement the innovative idea.

In practice, this occurred much less often than seemed desirable. Indeed, a common fate of innovations in the public sector was to languish within a given organization until it could be killed by the organization that developed it (Elmore, 1997). To survive and spread, the ideas often needed help. The help often came through professional associations that embraced new ideas as emblems of cutting-edge professionalism. It also came through financial support from the federal government to support local adoption of new governmental practices that the federal government deemed useful and important (as in community policing (see Roth *et al.*, 2000).

The idea of going to scale dominant in the business world was very different. In their

view, an idea went to scale not by hopping from one organization to another, but by staying within one organization whose scale increased in response to effective market demand for its product. In this conception, the Boston police department would not put its ideas about how to deal with youth violence out onto the internet and hope that someone else would pick it up; it would go to Baltimore and offer to deal with their youth violence problem—at a price. The price would help to finance the continued growth of the Boston police department, so that it could go to Miami and Los Angeles as well. In short, the way the programme achieves a significant scale is not through a process of diffusion from one organization to another; it is through increasing the scale of the organization that owns the effective technology.

In principle, this second idea of how to take a programme to scale could work. If organizational changes occurred in the public sector that turned Baltimore police department into nothing more than a purchasing agent for reducing youth violence (among other desired results of security expenditures) rather than the monopoly producer of a public service called a police department, and if the Boston police department was encouraged to become an entrepreneurial firm that sought to sell its services outside of Boston, then the Boston police department could, in principle, open a branch office in Baltimore. This is precisely what is imagined in many privatization agreements in which localities contract with national organizations to provide standardized services in local areas. We accept the national or international reach of private businesses; but we confine government agencies to their particular geographic territories. Needless to say, however, most jurisdictions and departments don't particularly like the idea of contracting with a faraway department to provide what they viewed as a critical service. Typically, local governments want to retain control over their organizations and the technologies the organizations use.

So, the private sector concept that a new technology, product or service could go to scale through the growth of an organization that owned the technology and sold it to eager customers was an idea that was beyond public sector institutional arrangements. The purchaser for the innovation still turned out to be particular governmental jurisdictions, not private consumers. Their question was more often 'should we adopt this innovation in our own operations?' than it was 'should we contract with that other organization to provide this

service?’

Obviously, if the process of diffusion depended more on public sector organizations adopting innovations than it did on contracting with an organization to provide the newly invented idea, then one important variable affecting the rate at which ideas could go to scale was how innovative most government organizations were. If they were open to, or even eager for, important innovations, then the rate at which an innovation could spread would be much higher than if they had neither cultures nor administrative systems that could support innovation within them.

This observation caused us to begin thinking about a subject that suddenly seemed different than the question of what constituted a break-through innovation, and how it was created and disseminated. We began thinking about what circumstances favoured the creation of *innovative organizations* in the public sector. We also wondered whether innovative organizations were the likely sources of the break-through ideas or whether they were simply among the early adopters of ideas when they emerged, and whether the processes that led to big break-throughs were different from the ones that allowed organizations to become early adopters and/or create many small scale innovations that accumulated to something significant.

Model 2: Innovative Organizations and Continuous Improvement

Thus we were brought to a different literature and a different way of thinking about innovation (for example Argyris, 1993; Edmondson, 1997; Cohen and Eimicke, 1998). This second, ‘learning’ model of innovation describes creative, continuously improving or learning organizations. The private sector literature on innovation was (at that time) much more interested in the creation of innovative organizations than in ‘disruptive technologies’. So, we came to an important question: should the study of innovation in government be primarily about the processes that produced a break-through innovation, and that spread

There has also been a great deal of interest in the business field in what are called break-through innovations from particular industries. One hypothesis is that such innovations tend to come from outside or marginal organizations within a particular industry and spread through an industry by out-competing other organizations. There is also interest in how industries continually reposition themselves in their competitive environments—see Christensen *et al.*, 2004.

that idea through the world, or should it focus primarily on the creation of innovative organizations that seemed to have the ability to continuously innovate and learn, and seemed to do so partly by making many small changes that accumulated to significant changes in both operations and strategy over the long run?

As noted above, there is an important overlap between the idea of innovative ideas and their dissemination on one hand and the creation of innovative organizations on the other. Obviously, an innovative organization has to have the ability to invent and disseminate important ideas—at least within its own boundaries. Similarly, the dissemination of big ideas from one organization to another might well depend on how generally open and curious—i.e. how innovative—organizations within a particular field or particular industry are.

Yet, these two models focus attention on slightly different things. The intellectual issues at the core of the break-through model are: what constitutes an important innovation, and what are the processes that allow it to spread in the world. The intellectual issue that dominates our attention in the learning model is what sorts of organizational structures, financing, and cultures tend to create organizations that are continually innovative. In the latter, we still have to be interested in where ideas come from, and what allows them to survive and flourish. But now, instead of looking at one big idea and understanding how it moves across an industry, we are looking at the organizational supports for many small innovations and their diffusion throughout that organization. Our attention is directed to *organizational level variables* rather than *sector or industry level variables*. And we evaluate the innovations less in terms of their impact on a sector, or a field, than on the success of a particular organization as it constantly repositions itself.

This last distinction might be particularly important. When we define a sector, we hold a purpose relatively constant, and allow the technology to change. When we are thinking about the success of a firm, we have one model that says it will be successful if it finds better ways of producing what it is now producing. But we also imagine that a firm can be successful not simply by finding more efficient processes for achieving current goals, but also by finding some new, previously unconsidered use of the organization in producing and distributing a new product or service. In effect, organizations can succeed by migrating from one product or service, and from one sector to another, while

a sector can improve only by getting better at producing the goods and services defined by the sector.

One way to see the difference between these perspectives is to focus on our understanding of the relationship between ideas on one hand and organizations on the other. In the public sector, we tend to think of important innovative ideas as coming from outside government organizations—usually some disembodied source such as a foundation, a think tank or even an academic institution. The government organization, in turn, is seen primarily as the means for implementing that idea. In the private sector, in contrast, we think of the organization as the place where ideas are both created and implemented. One has to worry about the creation of organizations not only to implement ideas created by others, but also to create the context within which important new ideas are developed.

This distinction reveals an important and often overlooked divide in the way the public and private sectors think about institutions, management, and value creation. In the public sector, the important objects of thought and calculation are policies, including their development and implementation. In the private sector, in contrast, the important object of managerial attention is organizational performance including how to position the organization in its environment so that it can continue to survive and create value for its shareholders. An important implication of thinking about this distinction is that we tend to have different ideas about who the important leaders of value-creating activities are, and what they do that makes them important. In the public sector, we tend to value the individuals who develop ideas over the individuals who carry them out. In the private sector, the valuations are reversed. We are more interested in those who bring an idea to fruition than those who have ideas.

We also tend to have different ideas about the likely sources of good ideas. In the public sector, we tend to think that the individuals at the top of the organization, guided by the electorate are the best sources of good ideas. In the private sector, we are more inclined to take some significant advice from individuals at the front line of organizations who are directly in contact with the customers and the production processes of the organization.

Finally, we tend to have different ideas about the kinds of ideas that are important. In the public sector, we believe that big, robust ideas that change the way we think and act on

given problems are important. That is what it means to make a change in policy. In the private sector, in contrast, we are as apt to see that relatively modest changes in process, and in the way that we interact with particular clients, may turn out to accumulate to significant improvements in performance.

Conclusion: Four Different Processes Affecting the Rate and Quality of Innovation

We could go on and have a debate argument about which of these two models is the 'right' or 'best' way to think about innovation in the public sector. But a preferred tack would suppose both frames to be helpful in thinking about innovation in government. Our research and development agenda would then focus on several distinct processes that are important to innovation in government. That agenda would follow the lines that Hartley outlines elsewhere in this edition. My own particular bias would be to look quite closely at four distinct innovative processes:

- Process 1: How are big and important ideas produced?
- Process 2: What is the process that causes important ideas to be taken up and diffused throughout an industry?
- Process 3: What conditions, created by leaders and managers of organizations, allow those organizations to become continually innovative?
- Process 4: What processes, at the industry or organizational level, operate as a screen for distinguishing successful innovative ideas from unsuccessful experiments?

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