Public sector innovation

JOHN BESSANT
Managing Innovation

The case for public sector innovation

Innovation is essential in public services, both to deliver the 'more for less' agenda and to offer radical alternative approaches to major social and economic issues. Balancing the needs of multiple stakeholders, rising expectations for service range and quality, the potential of new technology and the rising cost of delivering public services is forcing innovation on to the agenda across all departments. In the UK, as David Albury suggests, the conditions are now approaching those of a 'perfect storm' requiring a significant innovative response. These include:

- persistent problem issues with no pathway to solution
- pressing long term challenges
- increasing demand for public services
- recession

Barriers to public sector innovation (PSI)

A number of reports in recent years have helped to uncover the impediments to innovation (good and bad) in the public sector. In a recent project looking at PSI interviews highlighted the following as being particularly pertinent(Bessant, Richards, & Hughes, 2010):

- lack of motivation and incentive – *"These are not so much rewards for innovators, but rewards for adopters. There are very few incentives for organisations to adapt and adopt innovations."*
- lack of market test/competition – *"There're high degrees of monopoly and entrenchment of position and no market test."*
- the need to balance three 'R's which may pull in different directions – risk, reward and reliability – *"We do need quite a lot of change, but people don't want unreliability."*
- demand side is weak – *"There's a demand pull weakness in the public service driven by low reward for success and high negative impact for failure."*
- contested decisions involving multiple stakeholders users are sometimes a key part of service innovation since production/consumption are closely

linked but users are often unable to articulate what they want -

- supply side weakness – *"The sources of knowledge are there but there is a weakness of intermediaries to help organizations use insights from academic learning."*

While public service does not have the 'adapt or die' imperative of organisations which exist in the market, evidence suggests that alternative dynamics can still operate to support innovation. For example, in the UK the National health service (NHS) now works with the grain of its complex professional networks to support innovation in a variety of ways whilst the Department of Work and Pensions (DWP) has in its pensions service a division with a strong track record of innovation. While rightly public officials may take a different view of risk, compared with their private sector counterparts, this does not rule out innovation, as these examples show. Similar examples are reported by the innovation support agency, Mindlab, on behalf of the Danish ministries of Economics, Taxation and Employment (Bason, 2010).

Types of innovation

The innovation process

Definitions of PSI vary but typical is that given by the UK Department of Business, Innovation and Skills: *'innovation is the process of identifying, testing, implementing and spreading ideas that add value'.* It is Important to note that innovation is not simply an event – the cartoon light bulb flashing on above someone's head – but needs to be seen as an extended set of linked activities ranging from initial idea generation or identification through scaling up and development to launch and subsequent diffusion across a population. The final stages of this linked process are just as significant as the early stages of ideas generation, and unless this is understood well-intentioned efforts to spread good ideas will not work

Four dimensions of change

Innovation as a process leads to a variety of changes – innovations – which can take several forms. For simplicity these can be reduced to four dimensions of change:

- 'product innovation' – changes in the things (products/services) which an organization offers,
- 'process innovation' – changes in the ways in which they are created and delivered,
- 'position innovation' – changes in the context in which the products/services are introduced, and
- 'paradigm innovation' – changes in the underlying mental models which frame what the organization does

It is also important to recognise that there are degrees of novelty in these, running from minor, incremental improvements right through to radical changes which transform the way we think about and use them. Sometimes these changes are common to a particular sector or activity, but sometimes they are so radical and far-reaching that they change the basis of society—for example the role played by steam power in the Industrial Revolution or the ubiquitous changes resulting from today's communications and computing technologies.

We can apply this model to think about public sector innovation and the table below gives some illustrative examples.

Innovation type	'Do better' (incremental)	'Do different' (radical innovation)
'Product' – what we offer the world	Improved service offerings - faster, simpler, better quality, etc.	Completely new service offerings
'Process' – how we create and deliver that offering	'Lean' improvements in health etc. – essentially taking the waste out of existing processes On-line versions of existing processes – e.g. application for car tax, passport, Gateway services access	Radical new process for delivering services – e.g. shift to online, outsourcing of key services, etc.
'Position' – where we position it in terms of markets, story told around it, branding, etc.	Opening up new channels to end users or engaging wider participation/social inclusion agenda for delivery of existing services	Opening up completely new – unserved or under-served 'markets'. Telling new stories to new user groups Radical repositioning of public service in end user's minds
'Paradigm' – underlying mental model of what we do, what we are about	Reframing of underlying 'business model' for services	Rethinking role and purpose of public service. Major projects – e.g. NHS, Open University

An important question in PSI is whether there is a predominance of one kind of innovation over another – for example in health care is the emphasis too strongly on

health technology and product innovations associated with that?

How innovation happens in the public sector

It is useful to examine the dominant mental models about how innovation happens. Models matter because they shape what we pay attention to and how we resource and manage the things they represent. At the extreme it is clear that one such model might be the cartoon representation of innovation simply involving 'light bulb' moments or Archimedes-type flashes of inspiration. If that is all we thing there is to innovation then we will pay attention to and support activities which generate many ideas – but we will probably fail at innovation because we haven't considered downstream development of those ideas, or the issues involved in successfully launching and diffusing them.

In thinking about innovation models we also need to recognise the complexity of the process which they represent – in terms of the number of players and activities involved. Early models were simplistic linear affairs and mainly about physical products and processes – the typical 'technology push' or 'demand pull' stereotypes.

These have gradually evolved to more complex and interactive models, weaving different knowledge strands together. Such complex interactive models are particularly relevant in the context of services where users are a key part of the equation.

We can think in terms of several model archetypes for how innovation happens in public services. It's not a case of one being better than the other but rather that we need different horses for different courses. And in turn this has implications for how we support innovation – staying with the metaphor we not only need different horses but different trainers, stables and support infrastructure.

The following list gives a number of such 'archetype' models for ways in which innovation can happen in public sector:

Model A: R&D led

In this model an idea is typically developed by specialists, refined, developed and launched. It is typical of R&D led private sector organizations – for example in pharmaceuticals or electronics where investment in specialists and dedicated facilities produces a stream of knowledge-based products. In the public sector the equivalent might be the range of products and techniques arising out of R&D intensive health sector work – for example, new treatments, procedures, robot surgery, etc or the MOD.

Model B: High involvement innovation

In contrast to the specialist-led model A, this model stresses the ability of all employees to contribute to incremental problem solving innovation through what are often called 'continuous improvement' or 'kaizen' programmes. Successful versions of this model ensure that there is clear 'policy deployment' in which the broad strategic objectives of the organization are clearly specified and understood so that they can act as the 'railway tracks' along which improvement activity is directed. Targeted in this way high involvement innovation can deliver significant traction in areas like quality improvement, waste reduction and efficiency gains. Examples of such high involvement innovation in the private sector would be the Toyota Way, GE's 'Workout' programme or Motorola's Six Sigma model. Public sector examples would include various successful implementations of 'lean' thinking in departments such as HMRC and DWP.

Model C: Diffusion-centred

The focus of this model is less on idea generation than on dealing with the challenge of how to spread and mainstream a good idea – 'amplifying' innovation. Successful innovation is more than either having a good idea or developing it into something which works – it also needs to be spread and adopted across a significant population of users. This places attention on understanding processes of diffusion, key actors and elements in the process, the importance of different communication channels, the psychology of adopter behaviour, etc. In the private sector such models underpin much marketing, especially in fast moving consumer goods sector. Public sector examples might include the NHS institute for Innovation and Improvement with its emphasis not only on prototyping of new ideas but on enabling widespread diffusion of established good practices.

Model D: Radical/discontinuous

This model underpins 'innovation as unusual' – the kind of radical thinking which leads to completely new products, services, processes or market positions. By its nature this kind of innovation emerges at the edge and enabling it needs a specialist and separate agency with the freedom to challenge and break with conventional approaches
– a licence to think the unthinkable. An early and famous example of this would be the 'skunk works' which Lockheed Martin set up to help them develop the – for its time – impossible innovation of an invisible aeroplane. By allowing the group significant autonomy and keeping it separate form the mainstream it was possible to develop the stealth technologies which later became a mainstream innovation for the business. Private sector examples include BT's Wakaba group, Unipart's 'Green shoots', Shell's Gamechanger, etc. – all of whom share a specialist fringe role within their businesses and carry the responsibility for radical rethinking and reframing. Public sector examples might include some of the radical policy think tanks and some of the Future Focus activity, but the question could also be raised about the relative absence of such models

on the public sector innovation landscape.

Model E: Entrepreneur driven

This model recognizes that much innovation arises from individual ideas in the early 'fluid' phase in the innovation life cycle. When new conditions – for example the emergence of new technologies or market constituencies – are present there is often no clear shape for the successful innovation which will eventually form the trajectory for long-term development and diffusion. Instead there are many competing ideas, representing diverse alternative solutions to the problem. Classically this is the territory in which entrepreneurs operate, a rich 'soup' of ideas and enthusiasm in which high levels of experimentation are characteristic. Inevitably the majority of such ideas – and the entrepreneurs behind them will fail and eventually 'dominant designs' emerge which form the basis for mainstream innovation and diffusion.

The value of an innovation model based on this is that it harnesses the fast creativity of diverse and enthusiastic individuals and small groups and may give important clues or even early entry to what becomes the dominant design for the future. Increasingly this approach is used by the private sector in trying to work in new industries where the dominant patterns are still not established and where harnessing diverse entrepreneurship is an important alternative strategy. Examples might be the dotcom bubble and subsequent exploitation of the internet, the emerging biotech-based pharmaceutical sector, nanotechnology and alternative energy – all sectors in which large established players are actively seeking out and working with entrepreneurial start-ups and amplifying potential innovations which might form the dominant design. It also underlines the venture capital model of growth, in which sponsors and entrepreneurs are connected to develop and scale innovations with a high level of novelty. (Interestingly it also forms the basis for attempts by large corporations to capture and work with entrepreneurial talent within its employees – a process called 'intrapreneurship' which characterises organic growth models of organizations like 3M, Google, Novozymes and Siemens. Typically these organizations stimulate entrepreneurial behaviour by signalling that a proportion of time can be spent on individual innovation projects – in 3M 15%, in Google 20% - and then providing a variety of internal development support pathways – Dragon's Den pitches, internal venture banking, etc. – to enable scaling and development of entrepreneurial projects. (Significantly the Google model not only allows for 20% 'exploration' time but also a further 10% which employees are encouraged to sue to look outside their normal frame of reference and to push their horizons – arguably an approach which has helped move a search engine business to be a player across so many different market segments)P.

This model has significance for the public sector since it potentially taps into the rich vein of social entrepreneurship distributed across individuals and groups around key regional, issues and concerns. It highlights the need for brokering and connecting to

enable these entrepreneurs to flourish and their ideas to reach a wider audience – the amplifying effect. Examples might include The Hub, Innovation Exchange, BBC Backstage, Young Foundation, NHS innovation challenge. etc.

Model F: Recombinant innovation

Innovation does not always involve pushing the frontiers of a particular market or technology; in some cases it can happen through transferring lessons from one world where they are well-developed into a new context. Such recombinant innovation involves learning across sectors and lay behind much of the undoubted success of Thomas Edison and his 'invention factory' at the turn of the 20th century. Key to making this happen are mechanisms to bridge across different worlds and in the private sector this is done via a number of intermediary organizations including web-based and a growing number of third party service sector agencies. A good example would be the design industry (IDEO, Whatif, etc.) where cross-pollination is a powerful source of new insights – examples include airport turnaround times using principles from manufacturing. Public sector examples might be the transferring of lean / six sigma principles which originated in manufacturing but could also include learning from radical experiments in different contexts – for example, Aravind eye clinics and 'bottom of pyramid' (BoP) learning around health care, mobile banking and services in BoP markets, etc.

Model G: User-led innovation

Based on the pioneering work of Eric von Hippel work, this model recognises that users are often initiators or at least co-creators of innovation at the 'fuzzy front end'. Ideas may be developed into prototypes by user innovators (a common model in the development of medical instruments which often are developed by clinicians) and then be picked up on and produced/refined by professionals. Private sector interest in this approach has grown, not least as a consequence of the emergence of powerful self- organizing user communities – such as that surrounding Linux – which have become major sources of innovative ideas. There is now extensive use of 'crowd sourcing' and innovation competitions to mobilize expertise and insight at the front end of innovation. (Lego, Swarowski,Caterham). In the public sector there is considerable scope for this kind of activity – in Denmark it became the centrepiece of a major innovation initiative and led to the establishment of a specialist group – Mindlab – with the mission of developing and diffusing user led approaches across the public sector ministries of Taxation,. Economic Affairs and Labour. In the UK a variety of activities – such as the experience-based design work at the NHS Institute are examples of this approach.

Model H: Long term co-evolution

This model relates to the specialised and occasional type of innovation in which transformational innovations emerge out of highly complex and chaotic environments. Under conditions where there are many different stakeholders and other elements – for example, technologies, markets, financial sources, etc. – it becomes impossible to predict the direction or long term trajectory of innovation. Instead complexity theory suggests something will eventually emerge as a product of 'co-evolution amongst these different interacting elements. An example might be the long-term picture of chronic disease management – we know that this is a growing problem involving a wide range of stakeholders – patients, carers, health professionals, patient's associations, drug and medical companies, pension providers, etc.

The growing incidence of chronic disease, its rising costs and increasing expectations mean that the current model is likely to be unable to deal with this challenge – but what replaces it is impossible to predict via simple extrapolation. Instead it will co-evolve out of the interactions of the various stakeholders. This does not lend itself to a structured innovation model but it is possible to develop some approaches to 'manage' innovation under these conditions. Complexity theory indicates that there are some patterns to complex system behaviour – for example, it is possible to identify 'attractor basins' zones where something begins to emerge – and to use amplifying feedback to enhance that to the point where it becomes a dominant design. The innovation management lessons here would be to be in 'there', engaged with the co-evolving space, be in there early, and to be in there actively, picking up on shifts which might become nodes around which radical new options emerge.

A private sector equivalent might be the Danish diabetes care provider Novo Nordisk which invests £1m/year into the non-profit Oxford Health Alliance – a diverse group trying to work on chronic disease in radically different ways. This investment represents their 'lottery ticket' – by being close to the discussion they are 'in there' and 'in there early' and in a position to detect where early possible radical solutions might be going and to follow up on these. It is not clear where public sector equivalent organizations or approaches might be found though some of the think tanks might represent communities in which this might be happening.

Conclusion

It is important to stress that this is not an exhaustive list but indicates the variety of complementary models which have relevance to and/or currently operate in the public sector arena. These are also ideal types – in practice there are likely to be hybrids and combinations at work. Some models are better suited to particular circumstances than others - for example model B suits continuous improvement/lean type activities whereas the entrepreneurial model E might be better matched to Third sector innovation of the kind which the Young Foundation targets.

In similar fashion some models are more appropriate to private sector challenges and

have become more widely known as a result – typically the R&D led, entrepreneurial and high involvement types. But in the public sector the biggest challenge may often be diffusion – spreading ideas. Thus there is scope for further refinement of model C to deepen our understanding and develop the mechanisms to enable effective and rapid 'mainstreaming'. Within this context we also need to recognize that innovations are adapted and configured as they diffuse – the concept of 'innofusion' – and that acceptance and mainstreaming may need to build this configuration element in.