



RSA

Lab

Move fast and fix things

**How to be a public
entrepreneur**

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About the RSA

The RSA (Royal Society for the encouragement of Arts, Manufactures and Commerce) believes that everyone should have the freedom and power to turn their ideas into reality. Through our ideas, research and 29,000-strong Fellowship, we seek to realise a society where creative power is distributed, where concentrations of power are confronted, and where creative values are nurtured. The RSA Development team seeks to grow the reach and impact of the RSA by developing strategic partnerships with a range of organisations and delivering rigorous action-research programmes.

Recent RSA studies have explored the rise in self-employment, the gig economy and the ethics of artificial intelligence. In each case, we have sought to dig behind the headlines, unpick the nuance of debates, and canvas views from across the political spectrum. Our goal is to explore the big challenges facing society today.

About Innovate UK

Innovate UK, part of UK Research and Innovation, is the UK's innovation agency. Innovate UK drives productivity and growth by supporting businesses to realise the potential of new technologies, develop ideas and make them a commercial success. Our vision is to see the UK as a global leader in innovation and a magnet for high growth, innovative companies, where new technology is applied rapidly and effectively to create wealth. We're an organisation of around 300 staff, drawn mainly from business. With a strong business focus, we drive growth by working with companies to de-risk, enable and support innovation. Since 2007 we have committed over £1.8bn to innovation, matched by a similar amount in partner and business funding. We have helped 8,000 organisations with projects estimated to add more than £16bn to the UK economy and create nearly 70,000 jobs. Innovate UK is a key player in pushing the agenda of design within UK businesses, championing the importance of its role in economic growth. In 2015, Innovate UK published their Design in Innovation strategy with a clear aim to make "UK businesses innovate better, grow faster and achieve greater commercial success through the effective use of excellent early-stage design."¹

1. Innovate UK (2015) Design in innovation strategy 2015 to 2019. London: Innovate UK

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Executive Summary

“Move fast and break things” was famously Mark Zuckerberg’s credo for entrepreneurs. “Unless you are breaking stuff,” he said in 2009, “you are not moving fast enough.”² This phrase came to epitomise the Silicon Valley start-up culture that has redefined modern life in the last decade. But while the private sector has been profoundly changed by the creative destruction of new tech, the public sphere still struggles to find ways to keep pace with disruptive innovation.

But as Marianna Mazzucato and others attest: at its best the public sector is a force for good, taking proactive action to solve public problems.³ This report counters the long-held caricature of the state as a slow, lumbering, bureaucratic machine and sets out to find the people, processes and practices in government that are ‘moving fast, and fixing things’ and demonstrating a new kind of public entrepreneurship. This is in part to address recent critiques⁴ of the UK industrial strategy and EU literature around ‘mission-driven innovation’,⁵ that they focus too heavily on supply side science policy as opposed to stimulating enterprise innovation. As Geoff Mulgan recently said, overly focusing on R&D is “anachronistic” when the tools for innovating have changed dramatically in the last decade with “everything from accelerators and challenge prizes, to uses of data and procurement.”⁶ We take this challenge on directly, looking at the procurement of enterprise innovation through government.

The case for the public entrepreneur

In the following pages we describe the findings from a six-month inquiry where we applied the RSA’s model of change ‘think like a system, act like an entrepreneur’ to the challenges of **procuring and scaling innovation through government**. Through qualitative workshops, deep dives into case studies around the UK and a global practice review, the RSA Lab investigated approaches to public procurement of innovation using the Small Business Research Initiative (SBRI) and unearthed examples where practitioners have acted

2. Fell, J. (2014) As Mark Zuckerberg Turns 30, His 10 Best Quotes as CEO. *Entrepreneur*. [online] 14 May. Available at: www.entrepreneur.com/article/233890

3. Mazzucato, M. (2018) *The Entrepreneurial State*. [online] Available at: marianamazzucato.com/entrepreneurial-state/

4. Mulgan, G. (2018) Making mission-oriented innovation more than just words. *Nesta Blogs*. [blog] 3 May. Available at: www.nesta.org.uk/blog/mission-oriented-innovation-seven-questions-search-better-answers/

5. Mazzucato, M. (2018) *Mission-oriented research & innovation in the European Union*. Luxembourg: Publications Office of the European Union

6. Mulgan, G. (2018) op cit.

entrepreneurially to enable the success of enterprise innovations.

Using this qualitative research, this paper makes the case for the public entrepreneur – explaining the forces that are driving the need for a new type of government actor and investigating the ways to foster a culture that supports appropriate risk and innovation.

The questions answered in this report are: What does it mean to be a public entrepreneur? How can public institutions set direction for public money? What cultures, mindsets and competencies are needed to act entrepreneurially? What is required to shift public sector cultures and overcome immunity to innovation? And how can we use public procurement tools to deliver public value?

To answer these questions, we looked at SBRI as it is one of the more innovative approaches to problem-solving available to public servants in the UK. SBRI is a flexible process that can stimulate enterprise innovation that brings both economic and social value. The report builds out a framework for procuring enterprise innovation – looking at three key phases: understanding problems, creating solutions, and achieving impact at scale. However, the aim of the framework is not to provide a ‘sausage machine for innovation’ using SBRI, rather it is flexible by design and could apply to a broader range of funding tools including commissioning, venture philanthropy, impact investment, challenge prizes, open procurement platforms, charitable grants, and social impact bonds – all of which are mechanisms to solve public or societal challenges.

Recommendations

One question that continually arises for public procurement professionals is this: can a true balance be found between economic and social value? The insights from this research suggest so, and the recommendations that flow from them are a means of catalysing innovation for public good. We direct our recommendations to a range of audiences – government practitioners who find themselves as lone actors driving positive change in their city, department or institution; government departments and agencies who need to foster a culture of entrepreneurialism and ‘safe/fail’ experimentation; and policymakers who may need to create the policy environment to support this change. To summarise, we recommend:

To foster entrepreneurial people...

- Every local authority, government agency or department identify and nurture Public Entrepreneurs to drive innovation, affording them with the safe/fail environment and leadership sponsorship needed to experiment with new tools and try out new practices.
- To develop the skillset and mindset of the Public Entrepreneur, an opensource learning curriculum should be widely shared to enable change through networks such as One Team Gov and others.
- Governments should create a skills passport or digital badges for public servants that allow for career portability

of public entrepreneurs encouraging regular departmental border-crossing.

To create the processes for public entrepreneurship...

- Pilot a new approach to mission-led public procurement more broadly, which we call “Invest to solve” working with partners in national, regional and local government, the devolved administrations and other agencies to provide support and direction for public investments.

To underpin public entrepreneurship with policy...

- Undertake a procurement policy sandbox in readiness for Brexit, testing ways to innovate with procurement and extend beyond the existing OJEU and R&D thresholds.
- Add a Public Value Test to the Social Value Act to apply to all methods of procurement and problem solving across the public sector.

1. Introduction

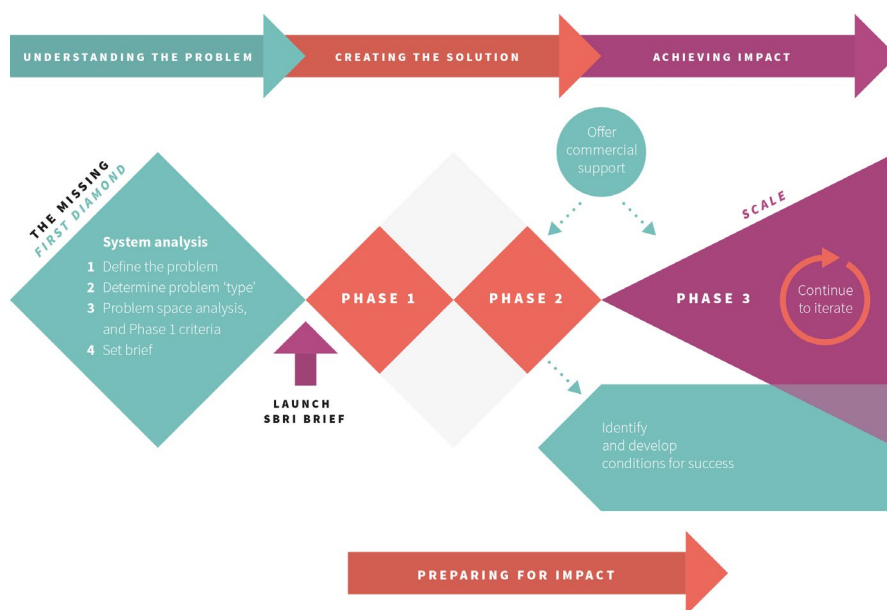
This report is produced by the RSA Lab in partnership with Innovate UK. It describes an action inquiry process where we applied the RSA's model of change 'think like a system, act like an entrepreneur' to the challenges of procuring and scaling innovation for public good. This is the RSA Lab's second investigation. The first looked at why government bodies that deployed the Small Business Research Initiative (SBRI) – a pre-commercial procurement tool – to enable public innovation encountered an 'immune response' to change. The resulting RSA report *From Design Thinking to Systems Change* focused on how government could tackle this by 'thinking like a system'. This second report focuses on how government actors can 'act like an entrepreneur'.

The first report concluded that design thinking was not enough to enable successful innovation to scale into government, and that because innovations were developed through Innovation Labs or via SBRI they were often disconnected from institutional norms and rules in current practice and so there was an immune response to change. We suggested the following:

- That a systemic understanding of the problems being addressed by SBRI ahead of setting briefs could optimise the success of the start-ups who respond to meet societal challenges and/or market demand.
- That deploying SBRI as an agile tool in itself could help to bypass the inertia of traditional procurement and act as a demonstrator of public investment.
- That a sophisticated understanding of markets and commercialisation could impact failure rate and guide the process toward impact.

These three phases were illustrated in the graphic overleaf.

Figure 1: The three phases for impact



In this follow-on inquiry we have looked more deeply at how public spending can be used to solve societal challenges, investigating the scope for entrepreneurialism in public procurement. Procurement is usually based on an underlying assumption that a problem is clear, and the solution is known and available. In a world characterised by the uncertain and the unknown, how do we work in rapid-changing environments to deploy public resources to solve society's challenges? We need new approaches to problem-solving. In this report we set out to explore what these could look like.

To do this, we have investigated the markers of successful (and unsuccessful) routes to procuring innovation with government funds (predominately SBRI) as well as the wider spend of public resources. We have unearthed real-world examples where practitioners have acted entrepreneurially to enable success of enterprise innovations. Through deep dives into case studies we have tested the RSA Lab's systems-based methods against them and created an open source toolkit for would-be public entrepreneurs to use.

The findings in this report are drawn from across the globe, but the deeper inquiry was undertaken with CivTech® in Scotland, the Northern Ireland Innovation Lab, the Government Digital Service in London as well as a range of local authorities and non-departmental public bodies across England. We are grateful to our participants for sharing their entrepreneurial mindsets and skillsets, and we hope that the learnings shared in this report can inspire others to 'act like an entrepreneur'.

2. The Case for the Public Entrepreneur

It is now over 20 years since Clayton Christensen's seminal book *The Innovator's Dilemma* brought us the concept of disruptive innovation. It described how and why new technologies bring down established businesses and put Silicon Valley start-ups on the map. But while the private sector has been profoundly changed by the impact of tech, it is still rare to find the 'GovTech' challengers forcing the collapse of outdated government systems. Perhaps they are slower in the public sphere because, as John Thornhill puts it: "Move fast and break things' is unlikely to appeal to governments that are left having to sweep up the shattered crockery."⁷

Public sector innovation is about fixing things – defining a problem and identifying the creative means and opportunities through which to address it – what the RSA frame as 'think like a system, act like an entrepreneur'. While the idea of 'breaking things' is clearly a model ill-suited to the purpose of the public sector, 'moving fast' speaks to the ambitions for government highlighted in Sir Michael Barber's 2017 review of UK Government productivity which seeks a public sector that is "delivering world class public services... turning public expenditure into outcomes that citizens value."⁸ This is the role of the public entrepreneur – the practitioner who finds ways to move fast without leaving a trail of destruction.⁹

Driving innovation *in* government

As Michael Bloomberg says, "innovation is very difficult... In the press, they call it failure. And so people are unwilling to innovate, unwilling to take risks in government."¹⁰ The statutory responsibilities of managing public money and safeguarding human lives set the public sector conceptually apart from a private sector that can 'fail fast'. It is an oversimplification to suggest that resistance to change in the public sector is mere risk aversion. As UCL's Rainer Kattel says, "the way innovations diffuse in the market environment, via imperfect competition and imitation, is hardly a way

7. Thornhill, J. (2017) How Small Tech can move fast and fix things. *Financial Times Online*. [online] 13 November. Available at: www.ft.com/content/627eaab2-c84c-11e7-ab18-7a9fb7d6163e

8. Barber, M. (2017) *Delivering Better Outcomes for Citizens*. London: HM Treasury

9. See for example: Klein, P.G., Mahoney, T.J., McGahan, A.M. and Pitelis, C.N. (2010) Towards a theory of public entrepreneurship. *European Management Review*, 7, pp.1-15

10. Levitt, S.D. and Dubner, S.J. (2014) *Think Like a Freak: How to Think Smarter about Almost Everything*. London: Penguin Books

for public sector innovations to emerge and to diffuse.”¹¹. Previous RSA research suggests that the role of a public entrepreneur is to be “proactive in making a case for, and facilitating, change while simultaneously making a case for, and delivering, stability.”¹². It is this essential tension we explore in this report.

A useful distinction of types of government innovation by the EU describes ‘innovation *in* government’ as transforming public administration, such as the shift to digital service provision and ‘innovation *through* government’ as initiatives that “foster innovation elsewhere in society, such as the public procurement of innovation, the unitary patent or support to social entrepreneurship.”¹³.

Innovations *in* government are process improvements, cultural shifts and new ways of doing things. These are what Clayton Christensen would term ‘sustaining innovations’¹⁴ – innovations that enable or improve existing services or systems, often driven by the ‘intrapreneur’,¹⁵ the bold (or frustrated) practitioner who drives improvement from the inside.¹⁶ The digitising of government has been the most visible expression of sustaining innovation in recent years. The UK’s Government Digital Service (GDS) and its counterparts in Estonia, Singapore and the United States have radically improved the user experience (UX) of their governments’ digital interfaces.

Designing a simpler, clearer, faster digital service, with ease of usability and language, across all government departments via one central portal – GOV.UK – has increased the UK population’s speed of access to information. Over 98 percent of driving tests are now booked online; 85 percent of self-assessment filing is done online; and 12 million people have registered to vote using the new digital service. The mammoth digitisation project created a model for innovation in government at scale – a notable sustaining innovation that came through clear direction to implement digital capabilities.

Where innovation in government could be described as ‘disruptive’ is in new ways of designing and delivering services – bringing users into the process of service design and the creation of digital marketplace platforms. Digital marketplaces have proliferated around the world, with a notable forerunner in the UK. In 2010, the UK government set out to diversify its e-procurement process

11. Kattel, R., Cepilovs, A., Drechsler, W., Kalvet, T., Lember, V. and Tõnurist, P. (2013) Can we measure public sector innovation? A literature review. LIPSE Working papers (no. 2). Rotterdam: Erasmus University Rotterdam

12. Hallgarten, J., Hannon, V. and Beresford T. (2016) Creative Public Leadership: How School System Leaders Can Create the Conditions for System-wide Innovation. [online] London: The RSA. Available at: www.thersa.org/globalassets/pdfs/reports/creative-public-leadership.pdf

13. European Commission (2013) *Powering European Public Sector Innovation: Towards A New Architecture: Report of the Expert Group on Public Sector Innovation*. Luxembourg: Publication Office of the European Union

14. Ibid.

15. Christensen, C.M. (1997) *The Innovator’s Dilemma: When New Technologies Cause Great Firms to Fail*. Boston, MA: Harvard Business School Press

16. Slocum, D. (2015) Five Questions With Alexa Clay On Misfits And The Dark Side Of Innovation. *Forbes*. [online] 5 August. Available at: www.forbes.com/sites/berlinschoolofcreativeleadership/2015/08/05/five-questions-with-alexa-clay-on-misfits-and-the-dark-side-of-innovation/2/#3a23538e1dab

and divert greater spend to SMEs. The GDS Digital Marketplace¹⁷ and its associated Crown Commercial Service (CCS) frameworks ('G-Cloud' and more recently 'Digital Outcomes and Specialists'), have delivered on both counts: diversifying the government's tech supplier base and driving over £3.6bn in sales, of which just under 50 percent by value has so far gone to SMEs.¹⁸

Driving innovation *through* government

The role of government is not just to provide frictionless services, it is also to solve public problems in health, education, inequality, employment and housing. Public actors, from city mayors to central government departments, are facing unprecedented challenges and fiscal pressures and their institutions are unable to address them at the rate at which they arise. And yet governments do have 'catalytic purchasing power',¹⁹ so this report looks at new practices emerging around the world that are shifting the way this spending power is used to create innovation *through* government. We will look at how governments can stimulate enterprise innovation for social challenges, create markets for 'tech for good' and scale what works.

When it comes to UK spending on innovation, procurement generally falls into R&D.²⁰ Pressure has been mounting on governments to move beyond supply-side science policy (investing in the 'R' of university research) and set direction for development of new technologies (majoring on the 'D' of enterprise development). As Richard Jones puts it: "Government can have a central role, by using its spending power much more purposefully to encourage innovation in the private sector, especially when linked to the strategic goals of the state."²¹

As R&D is exempt from EU procurement restrictions,²² the use of 'pre-commercial procurement' methods to fund and stimulate innovation *through* government has grown in recent years.²³ The established UK process for pre-commercial procurement is the Small Business Research Initiative (SBRI) which was created in 2009 as a means of connecting public problems in government with innovative solutions from the private sector. The largest portion of public

17. GOV.UK (2018) *Digital Marketplace*. [online] Available at: www.digitalmarketplace.service.gov.uk/

18. GOV.UK (2018) *Digital Marketplace sales: Latest sales figures for the Digital Marketplace*. [online] Available at: www.gov.uk/government/collections/digital-marketplace-sales

19. Disruptive Innovation Festival (2018) 2018 SUMMIT X DIF. [online] Disruptive Innovation Festival. Available at: www.thinkdif.co/sessions/2018-summit-x-dif

20. Morton, B., Paget, G. and Mena, C. (2013) *What role does Government procurement play in manufacturing in the UK and internationally and how might this change in the future?* Future of Manufacturing Project: Evidence Paper 24. London: Government Office for Science

21. Jones, R. (2018) The Second Coming of UK Industrial Strategy. *Issues in Science and Technology*. [online] Available at: issues.org/34-2/the-second-coming-of-uk-industrial-strategy

22. European Commission (2018) *Commission notice: Guidance on Innovation Procurement*. [online] Brussels: European Commission. Available at: ec.europa.eu/docsroom/documents/29261

23. NHS European Office (2013) *New EU Directive on public procurement*. [online] Brussels: NHS Confederation. Available at: www.nhsconfed.org/media/Confederation/Files/Publications/Documents/EU_public_procurement_briefing_Sept2013.pdf

expenditure through SBRI has so far come from Innovate UK,²⁴ but the potential for it to scale and serve as a ‘win-win’ for government and SMEs across the UK has been widely acknowledged.²⁵

For government to use its spending power to stimulate innovation, author of *The Entrepreneurial State*, Mariana Mazzucato, advocates for ‘mission-oriented innovation’ which can enable speed as it has “not only a rate, but also a direction.”²⁶ Public policy around the world is reorienting in this vein, European,²⁷ US²⁸ and UK government strategies²⁹ looking to direct public investment towards innovation – what Mazzucato would call “tilting the playing field.” In the US, the 2016 American Innovation and Competitiveness Act set a mandate to turn federal research into companies as “a national goal to promote economic growth and benefit society” and made provision for entrepreneurship and commercialisation programmes such as the American National Science Foundation’s *Innovation Corps* (I-Corps) to “bridge the gap between public support of basic science and private capital funding of new commercial ventures.”³⁰

Giving direction to technology entrepreneurs to meet social challenges can provide a market for an emerging cadre of ‘tech for good’ start-ups. Cassie Robinson, Strategic Design Director at doteveryone and co-founder of the Point People, has led a growing field of practitioners in the tech for good space since 2014.³¹ She says: “some of these organisations call it Digital Social Innovation, some Social Tech, some Civic Tech, some Responsible Tech and others Tech for Social Good... As organisations and individuals, we all believe that digital and technology have roles to play in addressing global and social challenges, and in levelling and redistributing power.”³²

24. Connell, D. (2017) Leveraging public procurement to grow the innovation economy: an independent review of the Small Business Research Initiative (SBRI). [online] London: Department for Business, Energy & Industrial Strategy. Available at: www.gov.uk/government/publications/leveraging-public-procurement-to-grow-the-innovation-economy-an-independent-review-of-the-small-business-research-initiative-sbri

25. Hazell, J. (2018) SBRI - more than £1 billion pounds in value to UK economy. *Innovate UK*. [blog] 13 March. Available at: innovateuk.blog.gov.uk/2018/03/13/sbri-more-than-1-billion-pounds-in-value-to-uk-economy/

26. Mazzucato, M. (2017) Why we need mission-oriented innovation policy. *RSA Blogs*. [blog] 25 September. Available at: www.thersa.org/discover/publications-and-articles/rsa-blogs/2017/09/why-we-need-mission-oriented-innovation-policy

27. UCL Institute for Innovation and Public Purpose (2018) *Professor Mazzucato’s ‘missions’ at the core of ambitious new €100bn EU proposal*. [online] Available at: www.ucl.ac.uk/bartlett/public-purpose/news/2018/jun/professor-mazzucatos-missions-core-ambitious-new-eu100bn-eu-proposal

28. Blank, S. (2017) Innovation – something both parties can agree on. *Berkeley Blog*. [blog] 16 January. Available at: blogs.berkeley.edu/2017/01/16/innovation-something-both-parties-can-agree-on/

29. Department for Business, Energy & Industrial Strategy (2018) The Grand Challenge missions. [online] Available at: www.gov.uk/government/publications/industrial-strategy-the-grand-challenges/missions

30. Blank, S. (2017) p cit.

31. Robinson, C. (2018) *The next chapter of Tech For Good Global*. [online] Available at: medium.com/@cassierobinson/the-next-chapter-of-tech-for-good-global-c926533955aa

32. Robinson, C. (2017) Coming Together as a Community. *Tech For Good Global*. [blog] 14 February. Available at: www.techforgood.global/blog/coming-together-as-a-community/

As challenge prizes and innovation funds become more popular and the devolution of responsibility for government spend (however small) is given to a wider field of practitioners, the need for non-procurement practitioners to be able to identify tech for good talent and act entrepreneurially with public funds grows. This also presents a challenge to the traditional practice of procurement, giving public procurement professionals the mandate to reinvent themselves as value creators.

The road from procurement police to value creator

Of all public actors, it is procurement that has the worst reputation for stifling innovation with ‘reasons why not’ – as one research participant said: “we need to move from being procurement police to being value creators.” But the OECD *Fostering Innovation in the Public Sector* report found that the values of entrepreneurialism conflict with those of perceived good governance:

“Generating public value through innovation is complex and challenging for governments. Innovation runs contrary to the perceived role of bureaucratic organisations. Innovation is new, unknown and risky; by contrast governments have a statutory duty, democratic responsibility and political mandate to deliver public services in consistent and equal ways. Managing these tensions can be complicated for governments, where the risk of innovating appears far greater than the risk of maintaining the status quo.”³³

In *The Art of the Possible in Public Procurement* the authors say: “For all of this desire amongst Commissioners to think afresh, there can be a countervailing force... That barrier is often perceived to be procurement – with regulations and iron-bound processes acting to stifle reform, hamper innovation and maintain the status quo.”³⁴ In the RSA Lab inquiry, we have found that such iron-bound regulations are often cultural norms and it is the maintenance of those norms that resist change, no matter how good or forceful the change strategy may be.

In an account of how an agile process for tech procurement failed in the Department of Homeland Security in the US, Eric Hysen laments the norms and rules that prevented change.³⁵ Having joined government from Google, he worked on the roll out of an open procurement process that operated in a collaborative way with suppliers to engage them in co-creation of solutions. However, the system broke down when an established process that allowed

33. OECD (2017) *Fostering Innovation in the Public Sector*. [online] Paris: OECD Publishing. Available at: www.oecd-ilibrary.org/governance/fostering-innovation-in-the-public-sector_9789264270879-en

34. Villeneuve-Smith, F. and Blake, J. (2016) *The art of the possible in public procurement*. [online] London: Bates Wells Braithwaite. Available at: www.bwbllp.com/file/the-art-of-the-possible-in-public-procurement-pdf

35. Hysen, E. (2017) Lessons learned from the government’s biggest attempt to fix tech procurement. [online] Available at: medium.com/@EricHysen/lessons-learned-from-the-governments-biggest-attempt-to-fix-tech-procurement-bd2265421211

companies to protest procurement decisions brought it to a halt. He says: “We can innovate in how we recruit and evaluate companies, but ultimately procurement regulations require massive, waterfall-style documentation to be produced at the very end. The protest process enforces this practice – Government Accountability Office staff only get involved after protests are filed and do their work by reviewing final documents after decisions have been made.” Hysen, a former Google engineer left the US Government in frustration with the system and says: “We need a system that allows the government to continue serving the public while maintaining the integrity of the acquisition process.” Risk aversion is not just the inertia of a “jobsworth” practitioner – sometimes real personal risk is baked into the system within process, and it is perhaps too much to ask practitioners to take on this burden when it may be interpreted as unlawful.

So, if you are working within the system to change the system, or from the outside in, perhaps as one of the digital first, agile design thinkers in government, perhaps as a service manager trying to find better ways of doing things, and you feel that there is a real risk that your work will get lost in the system, sadly you may be right. Innovations built in the margins often fail to materialise in the mainstream without wider system readiness to absorb them. But don’t despair. You’re probably that rare breed – the public entrepreneur.

The role of the public entrepreneur

“The story of innovation”, Hannah Shank notes, “is typically told as one of rule breakers, stay-up-all-nighters, people who are sharper and shinier than everyone else – whiz kids. But in reality, innovation, particularly in government, rarely relies upon a whiz kid. The real change makers aren’t 24-year-old male engineers parachuted in from Silicon Valley, but often a diverse range of people who have worked in or around government for years, who are invested in their communities, or who simply like intractable problems.”³⁶. Indeed a 1980 definition of the term public entrepreneur stated that their role was as internal champions of change: “assuming responsibility for a venture – in this case a particular project, program, or policy. In assuming such responsibility, the entrepreneur becomes the venture’s chief advocate and activist. He or she organizes support for the venture, manages the venture through the legislative maze, and assumes the political risks of being associated with the venture should it fail.”³⁷. In her 1965 PhD thesis on public entrepreneurship, Nobel Prize-winning economist Elinor Ostrom promised that, “in such an institutional setting there should be opportunities for persons to engage in public entrepreneurship by organizing new enterprise to secure appropriate forms of community action in

36. Schank, H. (2018) The enduring mythology of the whiz kid. *Fast Company*. [online] 21 May. Available at: www.fastcompany.com/90172847/the-enduring-mythology-of-the-whiz-kid

37. Advisory Commission on Intergovernmental Relations (ACIR) (1980) *The Federal role in the federal system: the dynamics of growth*. Washington, DC: ACIR

providing common goods and services.”³⁸ A 2018 conceit has more of a ‘new power’ flavour, emulating something of the private sector archetype of the start-up founder who knows how to hustle, move fast and win over audiences. Their skillset enables them to develop a richer understanding of the problem in all its complexity, with the entrepreneurial mindset to tackle it.

The public entrepreneur in action

High profile public entrepreneurs can be found in Innovation Labs and on accelerator programmes which are rapidly multiplying (there are now over 75 Labs across the globe from Toronto to Nairobi to Lima to Helsinki). As Nesta work on i-teams³⁹ and recent FutureGov research has shown,⁴⁰ Labs attempt to move government at Silicon Valley speed and are sometimes described as ‘grenades inside the bureaucracies’.⁴¹ FutureGov notes that their primary purpose is to experiment:

“True to their origins in science and commerce, the essence of a lab is experimentation. Labs commonly act as a lightning rod for new methodologies, drawing them together in one place and exploring how they work together (methodologies such as human-centred design, digital product development, data science, behavioural science and agile working). Labs upskill the civil service in best practice service and policy design, through practical application on live projects rather than theory-based training.”⁴²

The UK government’s Policy Lab has devised innovative design, digital and data science techniques and has built up a bank of examples of how to apply these to policy domains from cyber crime to mediation and divorce. Policy Lab’s director, Dr. Andrea Siodmok, has created a taxonomy of styles of intervention (see Figure 2), grouped into seven categories from low level to large scale – that categorise where innovation through government can be effective:

38. Ostrom, E. (1965) *Public Entrepreneurship: A Case Study in Ground Water Basin Management*. PhD. University of California - Los Angeles

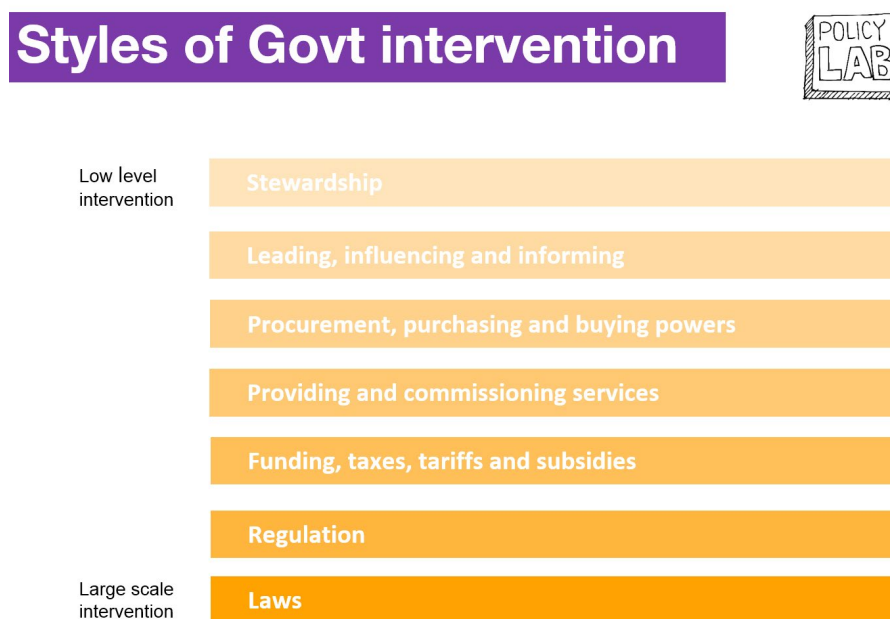
39. Baeck, P., Colligan, P. and Puttick, R. (2014) *i-teams: The teams and funds making innovation happen in governments around the world*. [online] Nesta. Available at: www.nesta.org.uk/report/i-teams-the-teams-and-funds-making-innovation-happen-in-governments-around-the-world/

40. United Nations Development Programme and FutureGov (2017) *Growing Government Innovation Labs: An insider’s guide*. [online] UNDP. Available at: www.eurasia.undp.org/content/dam/rbec/docs/undp-innovation-lab-report.pdf

41. Begovic Radojevic, M. (2017) Report launch: Growing Government Innovation Labs – an insider’s guide. *FutureGov Blog*. [blog] 26 October. Available at: blog.wearefuturegov.com/report-launch-growing-government-innovation-labs-an-insiders-guide-a5da66fbc021

42. United Nations Development Programme and FutureGov (2017) *Growing Government Innovation Labs: An insider’s guide*. [online] UNDP. Available at: www.eurasia.undp.org/content/dam/rbec/docs/undp-innovation-lab-report.pdf

Figure 2: Styles of government intervention⁴³.



If the primary role of government innovation labs is to build ‘bench strength’ in innovation,⁴⁴ for them to support public entrepreneurialism, they will also need to demonstrate how to deploy public money to seed innovation, identify markets and invest in scaleable businesses. This sets the task for Labs to develop capabilities beyond ideation and service design to incorporate commercialisation, commissioning and regulatory redesign as part of their portfolio.

The less high profile public entrepreneurs can be found all over the public sector. Often, they are a lone voice within service teams, seeking better ways of doing things. Close to the mechanisms through which problems can be addressed, they are able to move flexibly between them, leveraging the best tool at the best time. Through this inquiry we encountered many of them: Tom Alexander, Head of Strategic Business at Sutton Council who is driving the move to be an outcomes-based commissioning council, actively engaging young people in the procurement of the services they’ll benefit from; Dave Vincent, Chief Digital Officer at Invest NI who is using public funding to catalyse a concentration of tech start-ups in the AI sector in Belfast; public sector commercial consultant Rose Younger who is taking core elements of the CivTech® process and adapting them for her own Council team in Dudley; Joyce McKee of the Northern Ireland Adult Safeguarding Partnership who is convening system leaders in health and care in Northern Ireland to identify how to shift away from a failing system and to one that is fit for the future.

These people are those who are closest to the problem, they are the people who have to oversee service delivery and clean-up operations, to provide high quality school places and social care or

43. Siodmok, A. (2017) Mapping service design and policy design. *Policy Lab*. [blog] 22 September. Available at: openpolicy.blog.gov.uk/2017/09/22/designing-policy/

44. The competence and number of employees ready to fill vacant leadership and other positions

manage crises like cybercrime or floods. They have what Nicholas Nassim Taleb calls “skin in the game” – they are actively working through their own endeavours to make change, lifting old systems onto their shoulders to create the space in which new practice can emerge and take root. This is the ‘practitioner burden’ of being a public entrepreneur – a tough, emotional and exhausting role, but a worthwhile one that is focused on systems change. In the next chapter, we explore the cultural conditions necessary to support these entrepreneurs and foster entrepreneurialism in and through government.

3. Seven Ways to an Entrepreneurial Culture

Any leadership guru will tell you that an entrepreneurial culture is essential to facilitate innovation. Governments around the world are attempting to engender fresh thinking in their workforce strategies and there has been a pivot toward entrepreneurialism in the plans for UK government workforce transformation.⁴⁵ John Manzonei, chief executive of the Civil Service, espouses the values of an agile culture: “To achieve this transformation means breaking the mould of the traditional Civil Service career and casting a new one”, and initiatives like ‘One Team Gov’,⁴⁶ NHS England’s ‘one million change agents’⁴⁷ and Policy Lab open policy initiatives⁴⁸ are prototyping new working practices in public bodies which are collaborative, empathic and digitally networked, as opposed to working in hierarchies with tiered sign offs.

We are also living in the age of the start-up. There has been an entrepreneurial shift in labour market: in 2000 there were 3.5m micro businesses in the UK, today there are closer to 5.2m.⁴⁹ In the last 10 years, tech accelerators and incubators have expanded rapidly across the private, public and third sectors and start-up talent has grown exponentially.⁵⁰ The potential of ‘civic tech’ platforms are attracting a growing number of impact investors, with social venture funds like Bethnal Green Ventures aiming to identify and scale up ‘tech for good’ start-ups and PwC recently launching a scale up programme for GovTech businesses. The hopes for tech for good is that it will be a game-changer that uses emerging technologies to

45. Cabinet Office and Government Digital Service (2017) *Government Transformation Strategy*. [online] Available at: www.gov.uk/government/publications/government-transformation-strategy-2017-to-2020/government-transformation-strategy

46. One Team Gov (n.d.) Mission – OneTeamGov. [online] Available at: www.oneteamgov.uk/mission/

47. Bate, P., Bevan, H. and Robert, G. (2004) *Towards a Million Change Agents – A Review of the Social Movements Literature: Implications for Large Scale Change in the NHS*. [online] London: NHS Modernisation Agency. Available at: www.england.nhs.uk/improvement-hub/wp-content/uploads/sites/44/2017/11/Towards-a-Million-Change-Agents.pdf

48. Chari, V. (2018) How can we make it easier for policy makers to practise open policy? *Policy Lab* [blog] 11 July. Available at: openpolicy.blog.gov.uk/2018/07/11/how-can-we-make-it-easier-for-policy-makers-to-practise-open-policy/

49. Dellot, B. and Wallace-Stephens, F. (2017) *The Entrepreneurial Audit*. [online] Available at: medium.com/rsa-reports/the-entrepreneurial-audit-d6ca935fa8b7

50. Department for Business, Energy & Industrial Strategy (2017) *Business incubators and accelerators: the national picture*. [online] Available at: www.gov.uk/government/publications/business-incubators-and-accelerators-the-national-picture

transform our health, environment and working world.

These shifts are prompting what Indy Johar terms as “the rise of the post managerial society” – a time of organisational disruption driven by new technologies that render old hierarchies redundant. He says: “These are early signals for how the rise of platform, automation and AI economies are driving the demise of the administrative HQ and the birth of the post managerial economy.”⁵¹ But in practice, this is a tale of two cultures: old and new power.

Old and new power

According to Henry Timms and Jeremy Heimans,⁵² we are in transition between old and new power paradigms, with the outdated ‘old power values’ of expertise, confidentiality, formal governance and managerialism being replaced with ‘new power values’ that are digitally networked, open, participatory, peer-driven and transparent. But while our inquiry saw that these two cultures do co-exist in public bodies, we found that the new is not toppling the old. As Stephen Goldsmith and Neil Kleiman state, traces of old power run deep into culture and linger long after new strategies begin to change things. In *A New City O/S: Innovative Governance in the 21st Century*,⁵³ they say: “A highly routinized organization may be cost-efficient but, for that very reason, also be incapable of responding quickly to a sudden and unexpected change in the environment.”

Old power behaviours rooted in institutional structures and norms include the ‘cascade’ or ‘waterfall’ strategies that assume everyone will get in line. These follow prescriptive processes and accountability frameworks that have checks at multiple levels. Old power values are baked into operating environments, and highly resistant to change. Using old tools to address new problems often means the ‘computer says no’, and without regular exposure to new agile tools public institutions will always default to established operating systems. This is why institutions like the NHS find it so hard to adopt innovation – the broader operating environment of the institution is built to protect itself. Government is still some way from becoming a platform.

A key role that the public entrepreneur can play is as champion of cultural renewal, as Graham Leicester, author of *Transformative Innovation* says, this means “acting both as hospice workers for the dying culture and midwives for the new.”⁵⁴ This is the art and practice of maintaining order (keeping the lights on, avoiding turmoil,

51. Johar, I. (2018) The Great Restructuring Begins. *Dark Matter Laboratories*. [blog] 27 June. Available at: provocations.darkmatterlabs.org/the-great-restructuring-begins-dfba15d22019

52. Heimans, J. and Timms, H. (2018) *New power: How power works in a hyperconnected world--and how to make it work for you*. London: Doubleday Books

53. 51 Goldsmith, S., Kleiman, N. and Case, C. (2017) *A New City O/S: The Power of Open, Collaborative, and Distributed Governance*. Washington, DC: Brookings Institution Press

54. Wahl, D.C. (2017) *Graham Leicester introduces Designing Regenerative Cultures*. [online] Available at: medium.com/@designforsustainability/graham-leicester-introduces-designing-regenerative-cultures-4789f3631699

keeping people in work), while completely reinventing ‘business as usual’. The sections that follow lay out seven ways to foster an entrepreneurial culture.

1. Understand the wider system

If the purpose of innovation is to enable systemic change, then understanding the system is a vital first step. Design thinkers have become very good at developing ‘persona’ – fictional characters that represent the different users of a service or product. Creating personas helps to build a picture of users’ needs and experiences, but they do not go far enough to understand the behaviour of an organisation. For this you have to look at wider cultural systems – and public sector cultures are based on decades of common practice. Every culture is a unique composition of narratives, customs, practice, history, behaviours and people – which cannot be captured as a single fictional character.

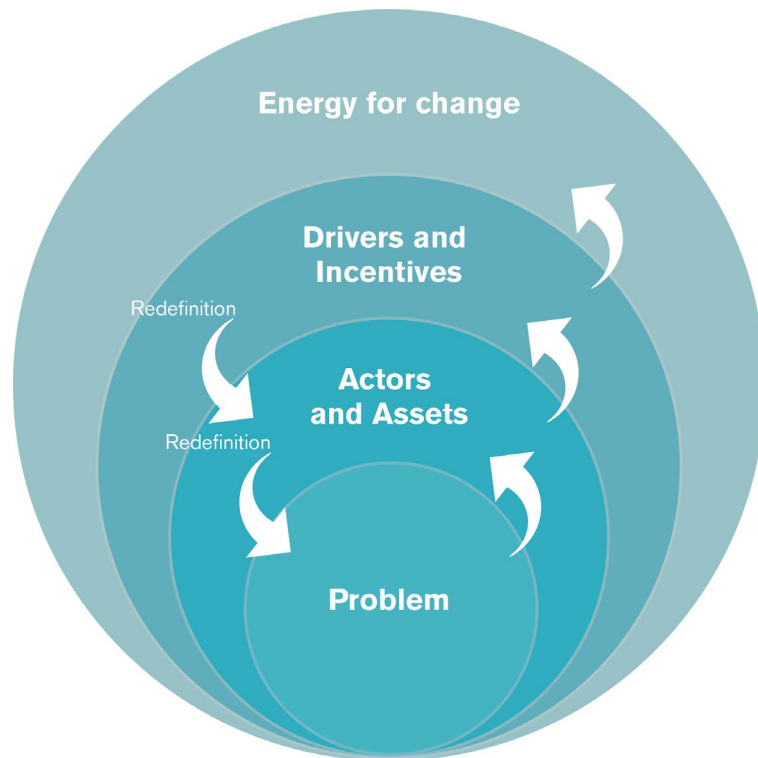
In a review of the factors influencing the adoption of innovation in health service organisations, Greenhalgh et al saw that culture and practice profoundly affected the process of assimilation and adoption of new practices and they advocate mapping the user system to understand how to enable change.⁵⁵ To understand cultural forces that will enable or block change, the RSA Lab looks at a simple set of criteria originated by Peter Senge.⁵⁶ The process diagram below illustrates these four key steps towards an understanding of a system:

- Start with the problem in the system that needs to be addressed.
- Understand the actors and assets that can be brought to bear.
- Understand and explore the institutions, incentives, and interests that shape behaviour and how they can be influenced.
- Observe the energy in the system – the forces that are supportive of change and those that are obstacles to it. Who and what will increase the likelihood of change?

55. Greenhalgh, T., Robert, G., Macfarlane, E., Bate, P. and Kyriakidou, O. (2004) Diffusion of Innovations in Service Organizations: Systematic Review and Recommendations. *The Milbank Quarterly*, 82(4), pp.581-629

56. Senge, P. (1990) *The Fifth Discipline: The Art and Practice of the Learning Organization*. London: Doubleday

Figure 3: Understanding the problem



2. Identify Incentives

Incentives are one of the main cultural forces that enable or block change. To cut out the policing nature of procurement, it's important to understand the incentives that hold it in place. In the UK, fear of 'Special Measures' – the status applied by UK regulators when public services fall short of acceptable standards – reinforce a risk averse culture that runs particularly deep in local authorities, schools and hospitals. The stewardship of taxpayer's money is the burden every procurement practitioner bears, with the omnipresent threat of a media headline exposing any misstep. Conversely, there are very few incentives for a procurement professional to innovate.

There are many rules that affect procurement from OJEU regulations to HM Treasury's Green Book.⁵⁷ Even though regulatory constraints have been loosened in recent years and new policies now encourage new ways of working with suppliers, the incentives to change are not strong and rarely does the responsibility for innovation lie with those who hold the purse strings.⁵⁸

In the case of SBRI, we see the government department as funder, driven by political and economic imperatives; the problem owner, driven by the desire to fix things and demonstrate value for money, whilst the enterprise sector in turn has business objectives to meet. In theory this is a simple picture; in practice this means many competing – and often mutually exclusive – incentives. The battle is often to see which incentive will prevail: is it political will, threat of fines, interpretation of the law, the needs of industry? These are

57. HM Treasury (2013) *The Green Book: appraisal and evaluation in central government*. [online] London: HM Treasury. Available at: www.gov.uk/government/publications/the-green-book-appraisal-and-evaluation-in-central-government

58. *The Public Contracts Regulations 2015* (2015) SI 2015/102. London: HMSO

scenarios where there is often no right answer waiting to be uncovered, just a way forward to be brokered. Within this, the challenge for the public entrepreneur is to help those within the system to find and negotiate ways to overcome the constraints that these incentives put upon them.

3. Anticipate immunity to change

If we reframe old and new power as a race running at two speeds, we can see the fast-moving entrepreneur laments the sluggishness of government and wishes it would just get out of the way, while the seasoned professional sees the entrepreneur as naïve and knows that change takes time and patience. A concept in *From Design Thinking to Systems Change* that speaks to both these frustrations is that of ‘the system immune response’. In summary, it suggests that within any system there are always ‘reasons why not’ to change: competing reward structures, custom and practice that form cultural norms, fears of sanctions from authority or humiliation in the media; or competing political imperatives. All contribute to immunity to change.

Figure 4: Innovation hits barriers to change

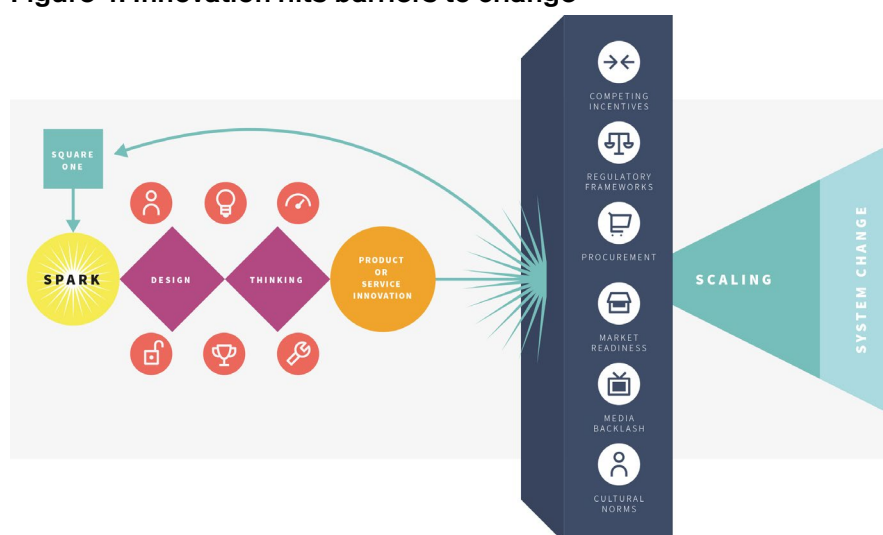


Table 1 overleaf lists some of the forces acting as blockers to procurement practitioners and public sector commissioners that we unearthed in this inquiry:

Table 1: Forces acting as blockers to procurement practitioners

Force	Description
Laws	<ul style="list-style-type: none"> ⊗ Regulation that prevents or enables action (State Aid regulations for example, were often quoted – or misquoted – as a reason why government cannot act as an entrepreneur)
Rules	<ul style="list-style-type: none"> ⊗ Rules that are inflexible and prevent innovation ⊗ Rules that are flexible and can be tested
Norms	<ul style="list-style-type: none"> ⊗ Custom and practice – how we do things around here ⊗ Priorities and trade-offs (e.g. balancing budget as top priority) ⊗ Exposure to innovation
Media	Media headlines were confirmed in our stakeholder interviews and workshop sessions as a primary driver of fear. The perceived catastrophic public outcry, and the repercussions that come from it.
Reprisal	<ul style="list-style-type: none"> ⊗ Fear of failing on statutory responsibilities ⊗ Fear of failing on targets –not delivering on time and budget ⊗ Fear of mistakes, negative results and extensive governance ⊗ Fear of being accountable for the failure of others ⊗ Fear of criticism – from the frontline to the boardroom ⊗ Fear of being punished or fired ⊗ Fear of change – prefer to be unhappy and secure than happy and insecure (loss aversion) ⊗ Fear of the complexity or scale of implementation
Technology	<ul style="list-style-type: none"> ⊗ Lack of awareness of technology capability ⊗ Gap between promise of technology and reality ⊗ Data protection (GDPR in the UK) ⊗ Legacy systems capability to absorb innovation ⊗ Security

Mapping these forces is essential to anticipate immunity to change and can provide a depth of understanding of an institution or place that helps set the right tempo for change in that context. Go too fast and the system will reject you. Go too slow and you are part of the problem.

4. Understand power

In most democratic countries, the political leadership is elected and responsible for setting the policy agenda, and the public administration or civil service is responsible for the delivery of that political mandate. That splits in two the role of the public entrepreneur, with the highly visible political leaders as those who publicly set the missions or prioritise problems to be addressed, and the civil servants who need to do the work of making it happen. The responsibility for entrepreneurial behaviour is shared, but the accountability is somewhat ambiguous.

In the RSA Lab, we have observed that entrepreneurs can demonstrate a blindness to the complexity of the cultures that they are seeking to change and oversimplify the role that power and authority play in getting things done which leads to immunity to change. The Lab has been adapting a framework based on anthropologist Mary Douglas' **cultural theory**, which recognises that change needs to take account of the different sources of power: **individual**

power driven by incentives; **group power**, driven by shared values and norms; and **hierarchical power**, driven by the rules of those in authority.

Almost all strategic planning is based on hierarchical power. As organisational change strategist Adam Kahane says: “The model I had internalized from all of my training had three basic steps... First, smart people think through the problem and the solution and make a plan to execute this solution. Second, they get the people in authority to approve this plan. Third, the authorities instruct their subordinates to execute the plan... Almost everyone I worked with was implicitly using some variation of the **three-step conventional, rationalistic, linear, hierarchical model**.”⁵⁹ The problem is that top-down dissemination strategies rely on uniformity and replication across multiple channels – which jars with the agile and collaborative tools now available and suppresses entrepreneurial behaviours by forcing compliance. Uniformity, by definition, trumps creativity.

Thinking that dissemination strategies work is an easy trap to fall into. Governments are good at thinking systemically and understanding the bigger picture from data and evidence, and the UK’s What Works Network is an example of a world class evidence hub. What governments are less good at is knowing how to act entrepreneurially, and often default to hierarchical strategies without realising it. In his review of UK government productivity, when Sir Michael Barber says that: “The overall task is clear: optimising the process of turning funding (primarily but not exclusively government funding) into policy outcomes for citizens”, he demonstrates how accurately government can diagnose problems.⁶⁰ However, when he describes the ways to solve the problem, he assumes that the levers of authority will solve productivity with a framework that requires all parties to get in line.

Complex organisations rarely line up behind a strategy, and if they do, the interpretations of it will be different across the system (eg different departments will all see the Industrial Strategy from different perspectives). Whilst it can be difficult to capture all the power, authority and incentives in a system, having a broad account of them fosters a conversation about where immunity may happen.

5. Create safe/fail environments

As Steve Waddell puts it, the new power energy of the entrepreneur is often at odds with the old power of the institution:

“Entrepreneurs are not fixated on destroying the old, although that is typically the effect of their innovation. Their energy is devoted toward creating the new. These change agents usually face substantial scepticism and resistance by incumbents. This, problems with scaling, or simply the inadequate power of the invention may make the entrepreneurs unable on their

59. Kahane, A. (2017) *Collaborating with the Enemy: How to Work with People You Don’t Agree with or Like or Trust*. [Kindle Edition] McGraw-Hill Education. Available through: www.amazon.co.uk/Collaborating-Enemy-People-Agree-Trust/dp/1626568227

60. Barber, M. (2017) *Delivering Better Outcomes for Citizens*. London: HM Treasury

own to bring about broad societal change.”⁶¹.

To capitalise on the potential of disruptive technologies (eg artificial intelligence, blockchain, machine learning, etc) public entrepreneurs will need to experiment with new tech in simulated and live environments. Some government actors will be very comfortable working in this way – for example GOV.UK regularly launches new or redesigned digital services in beta – others will feel extremely uncomfortable.⁶² But experimental and testing environments need to become the norm if government is to work at the speed of tech. As Indy Johar says: “Traditional regulatory bodies and accountability mechanisms may not be well suited to managing the emerging tensions between industry and society in a digital age. The challenge of propagating innovation while also protecting public goods, and detecting new public harms, is not yet solved.”⁶³ Government actors need to get comfortable with experimental methods – such as open innovation platforms and regulatory sandboxes like the one hosted by the UK’s Financial Conduct Authority that allows government to engage with business and civil society to test Fintech ideas, products and services in a controlled environment to identify regulatory shifts or safeguards they may require.⁶⁴

Dedicated funds, experimental spaces and cross-disciplinary teams that prototype new ideas go some way to enabling this, but as our research found, it takes more than the creation of an innovation lab to truly allow for ‘safe/fail’ experimentation. We caution against the Silicon Valley notion of ‘fail fast’ – as the reality is that any concept of failure in public services is anathema to politicians and officers alike. The idea of ‘fail’ suggests an absolute, binary experience. ‘Safe/fail’ or ‘learn fast’ environments are a more accurate framing of an ongoing process of testing, development and learning.

An entrepreneurial culture is a learning culture. New skills like commercialisation don’t just happen, they take continuous practice. To get to excellence requires that public entrepreneurs know what they don’t know and continue to learn and develop their knowledge. Developing a commercial understanding of which businesses can be created through innovation funds, comes through practice with real money (at an appropriate scale).

SBRI may be the right tool to demonstrate government agility and enable flexible R&D funding, but it could be stretched further by its users. While government agencies may see the *potential* of SBRI, the official evaluations show it does not always lead to the successful scaling of enterprise innovation. A recent review of SBRI said that “the public sector is still not taking full advantage of

61. Waddell, S. (2018) Four Strategies for Large Systems Change. *Stanford Social Innovation Review*. [online] Available at: ssir.org/articles/entry/four_strategies_for_large_systems_change#

62. Government Digital Service (GDS) (2015) *Beta on GOV.UK*. [online] Available at: www.gov.uk/help/beta

63. Johar, I. (2018) op cit.

64. Financial Conduct Authority (FCA) (2015) *Regulatory sandbox*. [online] Available at: www.fca.org.uk/firms/regulatory-sandbox

SBRI's potential" and noted that there was some frustration from businesses on their inability to navigate engagement with government.⁶⁵ The report called for the development of a third phase to SBRI (it presently has two: concept and prototype), to focus on supporting businesses through the commercialisation and scale.⁶⁶

6. Encourage flexible mindsets

Those new to public service often arrive with energy and passion, a desire to make a difference. They don't necessarily lose the passion to make a difference over time, but the cumulative effect of repeatedly hitting the system immune response can lead to a resignation that change is just too difficult. Bringing in new, flexible, innovative approaches to solve problems will require more cognitive load to manage than familiar 'tried and tested' methods. It is personally challenging to take on the burden of driving change and by doing so practitioners are opting in to feeling perennially uncomfortable at bucking the norm. Playing with rules and procedures can be very tiring. While recognising that this is uncomfortable, building resilient mindsets that are 'comfortable being uncomfortable' is key to enabling change. Developing the confidence to be a 'norm entrepreneur' is vital – this means stepping outside the current normal practice of an organisation and embodying practices that aren't commonly understood or upheld in business practice. The uncomfortable experience of pushing boundaries is also what builds the strength to create systemic change. This is the mindset of the public entrepreneur.

This flexible mindset is very alert and challenges the path dependency of traditional procurement, continually asking the public entrepreneur to be creative with the routes they find to solutions. For example, it's easy to default to thinking that solutions require money to solve them, but entrepreneurs – especially in the social sector – are used to scrapping around for resources and finding non-financial ways of getting things done. As Mark Swift, founder of Wellbeing Enterprises CIC, noted: "this is the resource challenge of entrepreneurs, that the majority have little by way of finance at the start... entrepreneurs go about creating artefacts / innovations in a low resource environment." For government and its agencies, alternative means to solve problems are available: policy, legal, economic, marketing and behavioural levers of change. For example, measures to tackle air quality might include congestion charging or making it cheaper to travel on public transport (economic levers), setting emissions levels for cars or industry (legal levers), communicating the negative health impact of poor air quality on residents (marketing response) and making it easy and safe to walk

65. Connell, D. (2017) Leveraging public procurement to grow the innovation economy: an independent review of the Small Business Research Initiative (SBRI). [online] London: Department for Business, Energy & Industrial Strategy. Available at: www.gov.uk/government/publications/leveraging-public-procurement-to-grow-the-innovation-economy-an-independent-review-of-the-small-business-research-initiative-sbri

66. Selviaridis, K. (2017) *Public procurement of R&D and innovation in the UK: Is there alignment between policy and practice? A study of the Small Business Research Initiative (SBRI)*. Lancaster: Lancaster University

to school and work (behavioural levers). A flexible mindset will see the potential of the whole gamut of options.

7. Practice agility - build supported learning environments

To build an entrepreneurial culture continuous practice and a learning culture need to be loudly championed. In an Innovate UK blog following *From Design Thinking to Systems Change*, we featured the work of CivTech® in Scotland as an example of where government was capitalising on the inherent flexible nature of SBRI and funding the development of innovative tech solutions to meet public sector needs.⁶⁷ Agile processes like this require experimentation and this is not generally a core competency in public administration. Experimentation in an environment unused to it can mean the stakes are high and nobody ‘has your back’ especially when there is no penalty for existing custom and practice. CivTech® is experimenting with SBRI in Scotland and is proving that it is possible to play with procurement. A shift like this takes traditional procurement out of its comfort zone, because it feels like it is pushing the boundaries of the law. What Alexander Holt, founder of CivTech®, says, is that we need to understand the difference between rules and laws, and that to be entrepreneurial, rules may need to be challenged. Spotting opportunities for flex in the system is a key skill, as is negotiation and lateral thinking.

Political leaders and senior civil servants need to act as champions for the public entrepreneur – endorsing their experimentation and publicly supporting them when they run up against challenges – reducing the high stakes and sharing responsibility. We saw this in the role the Scottish government plays with CivTech® and the NI Innovation Lab’s champion Malcolm Beattie in the Department of Finance in the Northern Ireland government.

While endorsement and support are vital, practice is also essential. To develop the skillset and mindset of the Public Entrepreneur, a learning culture must prevail and tools need to be in place to support this. One such tool is the opensource learning curriculum devised by Helen Bevan, Chief Transformation Officer, at NHS Horizons.⁶⁸ Bevan set up the ‘School for Change Agents’ in 2018 as a free virtual learning programme to provide change agents and leaders in health and care to build their skills, confidence and networks for leading change. Importantly it is open to everyone, with the view to building ‘change agency’ which is the power, individually and collectively, to make a difference. It is also accredited, so staff can build continuous professional development credits by taking the course.

A similar open learning process is available in the US, where the National Science Foundation delivers a learning programme for government entrepreneurs called Innovation Corps. Based on

67. Conway, R. (2017) Think like a system, act like an entrepreneur. *Innovate UK Blog*. [blog] 31 July. Available at: innovateuk.blog.gov.uk/2017/07/31/think-like-a-system-act-like-an-entrepreneur/#

68. Kemble, N. (2017) *School for Changes Agents Starts on 15th Feb 2018*. [online] Available at: www.rdforum.nhs.uk/content/2017/12/20/school-changes-agents-starts-15th-feb-2018/

the Stanford University ‘Lean LaunchPad’ class, it has trained over 1,500 science teams and was adopted by the National Institutes of Health as I-Corps at NIH in 2014 and at the National Security Agency in 2015.⁶⁹

Courses like these develop core skills and open minds, but importantly they also thicken networks that transcend the traditional hierarchies of organisations. Enabling collaboration across boundaries of departments or institutional roles and formalising this with skills passports or digital badges could allow for career portability of public entrepreneurs and encourage cross fertilisation of new practices.

In the next chapter we look at how to build on the foundations of an entrepreneurial culture to develop an entrepreneurial approach to procurement.

69. Blank, S. (n.d.) *Steve Blank Entrepreneurship and Innovation*. [online] Available at: steveblank.com/

4. Driving Public Value with Public Procurement

The UK public sector spends over £251.5bn annually procuring goods and services which accounts for 33 percent of public sector spend and 13.7 percent of GDP, so the potential for value creation is huge.⁷⁰ However, most public spend is through traditional procurement which buys everything from paperclips to major infrastructure and at its most simple is a process of defining need and matching it with providers. To direct public spend toward solving public problems, a different approach is needed.

SBRI is a flexible tool that can be used to counter this path dependency. One challenge for the deployment of tools like SBRI, however, is that business creation is often easier to track than the resolution of the problem – and the aim is to achieve both. Here we look at the ways institutions and cities can set direction for innovation funding and find solutions through enterprise innovation.

Growing markets and solving problems in health

The difference between innovation *in* and innovation *through* government, is that the latter has the twin goals of catalysing enterprises and solving public problems. NHS Innovation seeks to both deliver better outcomes for patients as well as act as an investor and wealth creator in the UK, translating scientific developments into benefits for patients, and contributing to economic growth. Working with partners in UK Government, including Innovate UK, it has created the Clinical Entrepreneur Training Programme to identify and support clinical entrepreneurs working in the NHS and catalyse innovation in digital health, genomics, data analytics and advanced technology.⁷¹

Programmes such as this build technical expertise and stimulate the imagination of practitioners to find solutions to public health challenges. However, their long-term impact relies on there being a market for the products or services developed: either within government and public services or in the consumer sphere. Some public service markets are considerably more complex than others, and health is one of the most challenging. When human health is at

70. Public Administration and Constitutional Affairs Committee 2017-19 (2018) *After Carillion: Public sector outsourcing and contracting* (HC 748). London: HMSO

71. NHS England (n.d.) *Clinical entrepreneur training programme*. [online] Available at: www.england.nhs.uk/ourwork/innovation/clinical-entrepreneur/

stake, getting medtech innovations to scale into the NHS takes more than directing the commercial journey of a frictionless tech product. While new innovations could transform healthcare, incentives to adopt them are often outweighed by the risks.

The 20th century process of scaling medical innovations into health systems was – to a degree – more predictable. According to the Kings Fund: “The first large-scale clinical trials of statins were held in the mid-1980s and statins became available on prescription from the NHS in the 1990s. By the early 2000s, the English NHS was prescribing around 8 billion daily doses of statins each year.”⁷² So where are today’s statins? The arrival of medtech start-ups and social enterprises for health improvement has set a range of challenges to the institutional structure of NHS commissioning – as they present a multiplicity of directions for health beyond pharmaceutical solutions (social prescribing; preventative care; wearable technologies; AI-driven non-surgical solutions; self-diagnostic tools and big data driven solutions). Health may be ‘more than a pill’ but driving adoption of these new products and services presents a major challenge.

One example is that of Poly Photonix. Richard Kirk, a medtech entrepreneur and his team invented the Noctura 400, an OLED-based, non-invasive and self-administered treatment that patients wear while they are asleep. Poly Photonix sell to healthcare providers and the Noctura 400 is currently only available privately through optometrists in the UK. It is undergoing a clinical trial in order to achieve FDA approval for scale-up into the US healthcare market. This trial is ongoing in 45 NHS hospitals.

After receiving £1.4m through a three-phase SBRI Healthcare, Poly Photonix started working with the NHS. One of the benefits of working inside the system, Kirk reports, is that they commission independent analysis about the products they are engaged with. They have published multiple reports about Poly Photonix including a recent publication that predicted it would save the NHS £300m per year. Kirk explains that for a while articles were written about his firm and he was given several awards, the High Value Manufacturing Catapult had an equity stake, and the company had access to senior NHS stakeholders. But despite CCG funding for an evaluation, the protocol was not written and they cannot get ophthalmologists to use the mask, nor can they provide it to them free of charge.

Contrasting this to how they conduct their business in France, Kirk explained that French ophthalmologists can make a unilateral decision to buy the mask and there is no engagement with procurement, ethics or analysts, the doctors just decide to do it and create small studies and evaluation projects and present at conferences without any initiation from Poly Photonix. Enabling this kind of autonomy for practitioners to undertake small studies is perhaps a route to the kind of experimental culture needed to support the

72. Collins, B. (2018) Adoption and spread of innovation in the NHS. [online] Available at: www.kingsfund.org.uk/publications/innovation-nhs#casestudies

wider adoption of emerging medical innovations.

In a 2016 article in *BMJ Innovations*, Axel Heitmueller, Managing Director at Imperial College Health Partners posits the thesis is that efforts to support and promote the creation of healthcare innovation will always hit barriers to adoption without fundamental systemic change.⁷³ He says:

“The real challenge is to create healthcare environments in which the benefits of innovations can readily be seen and understood by those who can use them to improve patient care, and in which healthcare organisations can readily support the procurement and integration of those innovations into their systems and processes of care. In order to do this, we need to create organisational cultures, capabilities, infrastructure, processes and resources that make the uptake of innovation more likely. We need to create this beyond each organisation if the health system is to adopt innovation that crosses boundaries of organisations which is even more challenging than single point solutions.”

One example where this kind of collaborative experimentation is taking place is in the Helix Centre in London, an innovation lab embedded in St Mary’s Hospital. The Helix is a pop-up design studio in the courtyard of a busy hospital that opened in 2014 to respond to increasing pressures on the NHS. It has core funding from sources including research councils and Innovate UK, corporate partners, and philanthropic trusts, but its projects are individually funded according to the aims and collaborations involved – some of which use SBRI Healthcare to catalyse enterprise innovation. Helix began as a joint project between the Royal College of Art and Imperial College London and in it designers and engineers work with clinicians to identify challenges and provide solutions. As the impacts of its innovations such as Amber Care Plans has grown, the centre has gained a global reputation for excellence and was featured in *Harvard Business Review* alongside the Mayo Clinic and the Consortium for Medical Technologies at Massachusetts General Hospital as one of the world’s leading healthcare innovation centres.⁷⁴

Driving creativity with procurement in cities

It isn’t just national institutions like the NHS that need to understand how to foster innovation. Cities and towns are grappling with a range of demands including population growth and demographic shifts, housing affordability, homelessness, mobility, air quality, resource efficiency, and employment, and they are increasingly emerging as testbeds for innovation for public benefit.

73. Heitmueller, A., Bull, A. and Oh, S. (2016) Looking in the wrong places: why traditional solutions to the diffusion of innovation will not work. *BMJ Innovations*, 2, pp.41-47

74. Bhattie, Y., del Castillo, J., Olson, K. and Darzi, A. (2018) Putting Humans at the Center of Health Care Innovation. *Harvard Business Review*. [online] 2 March. Available at: hbr.org/2018/03/putting-humans-at-the-center-of-health-care-innovation

Part of the reason that mayors cut through the old power/new power divide is that the political leadership and delivery gap is smaller. Mayors are more embedded within their administration and closer to their beneficiaries and spending power (although those powers are limited depending on where you are). With increasing devolution of powers to cities and localities, there is an opportunity to capitalise on the closeness of the political leadership and its administration in places. Tools like SBRI can provide cities with the platform to catalyse enterprise innovation in their locality.

Bold new policy instruments like the ‘Opportunity Zones’ in the US are encouraging cities to drive investments in low-income urban and rural communities.⁷⁵ City-based challenge prizes are also growing in popularity – the Mayor of London recently launched a Civic Innovation Challenge to encourage start-ups to work together with leading corporates and public organisations to tackle London’s most pressing problems,⁷⁶ and 35 cities in the US have been selected as Champion Cities in the Bloomberg Mayors Challenge, offering a snapshot of the problems facing US city leaders, with climate change, health, and jobs featuring highest on their agendas.

Urbanist Bruce Katz points to a group of vanguard cities in the US and Northern Europe that are inventing new models to invest in innovation, infrastructure and inclusion. In his work on New Localism, he notes that “cities are organizing private and civic capital to commercialise research and spur the growth of entrepreneurial companies.”⁷⁷ In Indianapolis, the Central Indiana Corporate Partnership has raised hundreds of millions of private and civic resources for investment in companies and research institutes in the life sciences field, a competitive advantage of the metropolis and region. In St Louis, the Cortex Innovation Community has used institutional capital from Washington University and other anchor institutions to build a globally recognised innovation district. These institutional models work because they deploy corporate, philanthropic and university resources through professionally managed entities that have clear missions and work in close cooperation with the public sector.

Open-data initiatives can also drive civic innovation in cities and foster enterprise growth. There are a multitude of data sources that can be used to gain insights on businesses across the city, such as data from public transport, internet and telephone service providers. When cities open their data to the tech community they can drive creative enterprise solutions to hyper local issues. A good example of this is shown in how Belfast set an open data challenge to find new ways to boost business rate revenue using an SBRI

75. Economic Innovation Group (n.d.) Opportunity Zones. [online] Available at: eig.org/opportunityzones

76. Greater London Authority (2018) The Mayor of London’s Civic Innovation Challenge. [online] Available at: www.london.gov.uk/what-we-do/business-and-economy/supporting-londons-sectors/supporting-tech-and-digital-sectors/mayor-londons-civic-innovation-challenge

77. Katz, B. and Nowak, J. (2018) How Impact Capitalism Re-Discovers Place. [online] Available at: www.thenewlocalism.com/newsletter/how-impact-capitalism-re-discovers-place/

competition. After the first stage, the council invested in four early stage proof of concept projects that could solve the problem of identifying formerly empty premises that had been brought back into use. One project used footfall data, another wifi and bluetooth signals, and two applied machine learning techniques to public datasets. The two machine learning projects made it through to the SBRI second phase, and over a two-week test period, they identified over £350,000 of uncollected rates, generating an immediate return from the project cost of £130,000.

For cities to derive benefits like this from innovation funds, they will need to invest in public entrepreneurialism as a core capability. Katz offers one key learning from his research into place-base revitalisation: institutions matter. “Over the past twenty years, a variety of institutions – business improvement districts, local development corporations, business incubators and accelerators – have been created to drive quality place making, enhance entrepreneurship and innovation, maximize resident-to-jobs linkages (particularly with anchor institutions) and spur development that is mixed-use and has market rate and affordable elements. Communities and intermediaries should strive to capture and codify best-in-class institutional models that can be adapted and adopted across places.”

Missions and medals tables

Beyond R&D, a mission that demonstrated the capacity of a procurement to invest in enterprise innovation was the London 2012 Olympic Games. By setting a mission like “the most sustainable Olympic and Paralympic Games ever” the Games were able to stimulate creative responses that led to cutting-edge enterprise innovations. Through setting technical challenges like “reduced embodied carbon” in procurement briefs, the Games acted as a driver of innovation with targets that forced supplier creativity.

Political leadership was key, as was a ringfenced budget of £9bn. The shared vision developed by the Mayor of London and WWF for a ‘One Planet Olympics’, was central to the candidate city bid and then, as the host city, London’s commitment to the world.⁷⁸ Alongside bold political leadership, the creativity of the technical team and public servants was exercised to ensure that key venues of London 2012 set world-beating standards for embodied carbon while also saving money. The evaluation of the One Planet plan’s impact, confirmed the spill over benefits of driving high standards through design and procurement: “The lessons learned in the building of the Games venues have had a significant impact on the practice of the British construction industry, inspiring a positive move to more sustainable building.”⁷⁹

78. Bioregional (2005) *Towards a One Planet Olympics*. [online] Available at: www.bioregional.com/towards-a-one-planet-olympics/

79. Bioregional and WWF (2014) *Towards a One Planet Olympics revisited*. [online] Available at: assets.wwf.org.uk/downloads/towards_a_one_planet_olympics_revisited.pdf

Creating solutions

These different approaches to innovation all involve public entrepreneurs – some inside and some outside of government. Those that were most successful convened a range of perspectives around a problem to find solutions. This included enabling solution providers to come together with problem owners as part of the process of procurement. This method – which is routinely used in SBRI processes and is also favoured by the G-Cloud digital marketplace – helps potential providers really understand the problem they are tasked with solving, rather than just reading a brief. It can also raise questions of the problem owner that they may not have thought about before, deepening their understanding of technical options. The public entrepreneur facilitates this process. In this way, the first phase of the process ‘understand the problem’ comprises two elements – understand the problem *and* explore ideas.

Bespoke Innovation Labs like the Helix Centre and accelerator programmes are rapidly multiplying as a means of catalysing change and can be very effective at driving experimentation. However, to avoid the trap of ‘innovation theatre’, where charismatic design activity takes place but problem resolution is not found, the task for Innovation Labs is to go beyond ideation and focus on the rigorous market testing of minimum viable prototypes – leveraging the best of iterative, design-led approaches, and focusing all eyes on the prize of impact at scale.

To achieve impact at scale there needs to be a comprehensive yet flexible process to secure public value from efforts directed at solving public problems. The public entrepreneur is the person to guide this. In the next chapter we look at three case studies that illustrate how to stimulate enterprise innovation for public good and show how government actors can ‘act like entrepreneurs’. Each case study is different, but they share the common principles of agility, adaptation, experimentation and collaboration.

5. Solving Public Problems with Tech Solutions

In *The Bit and the Rainforest*, Rainer Kattel examines the differences between the technical challenge and the social or environmental problem.⁸⁰ He says: “Some challenges require different kinds of knowledge and expertise from the public sector... we can argue that today our societies are increasingly apt in creating and using data (bits), yet data alone will not save the rainforests from climate change.”

There are many problems that may not respond well to a tech solution and many frontier innovations that are in search of a problem that hasn’t arisen yet. The role of the public entrepreneur is to know the difference. It is their job to spot when a problem lends itself to an emerging technology and to steer the development of an enterprise solution to meet the wider needs of society as well as build a commercial venture. The challenge of such a demand was not lost on our research participants. Malcolm Beattie, sponsor of the Northern Ireland Innovation Lab made the point that government can often “commission on imperfect knowledge and the market sells us what we don’t need.” Tom Alexander at Sutton Council shared his concern that public servants may fundamentally lack the commercial knowledge of the supplier market to ensure that what he invests in meets the needs of the problem, he said: “How can I procure a solution when I don’t know what it could look like?”

The “most sustainable Olympic Games” is a mission on a grand scale, while the challenge of business rates in Belfast is considerably smaller, but both need enterprise ingenuity to solve them. Through the RSA Lab Deep Dives we looked at different ways to solve public problems with enterprise solutions. The research team engaged with the following:

- The GDS team working on the GovTech Catalyst, which is the home of the government’s £20m innovation fund, and is an open call to all government departments, local authorities and public bodies like the NHS.

80. Karo, E. and Kattel, R. (2018) *The Bit and the Rainforest: Towards an Evolutionary Theory of Policy Capacity*. [online] Available at: www.ucl.ac.uk/bartlett/public-purpose/publications/2018/mar/bit-and-rainforest-towards-evolutionary-theory-policy-capacity

- The Innovation Lab in Northern Ireland who used SBRI to address a problem of environmental waste which required immediate attention and an enterprise solution to fix.
- CivTech®, the Scottish government's programme that is using SBRI to try to solve public problems in Scotland.

The GovTech Catalyst

The UK government launched the GovTech Catalyst in May 2018 to “call on technology firms to help tackle the UK’s biggest challenges”. The Government Digital Service took on administration of the process and using SBRI is challenging tech experts to find solutions for specific public problems. One of the core focuses for the Government Digital Service is their organisational skillset. As Digital Marketplace Director Warren Smith states: “building capability doesn’t require a change in regulation.” This focus on capability involves a fine balance between forward planning once a problem has been identified and a team’s ability to ‘pivot while you go’. In the GovTech context this is realised through a diverse team reflecting the typical makeup of a product development team in a tech setting. The team is comprised of a product manager, technology architect, delivery owner, and service designer who each bring their expertise to bear on the submitted challenges and enable the process to be managed responsibly, while remaining flexible enough to the emerging solutions.

Fifty-one challenges were submitted to the GovTech catalyst in the first round. They were judged according to whether the challenge identified an important public problem, which could be significantly impacted by a tech solution, whether it held a clear public user need, demonstrated an understanding of what a market for the solution might look like, and whether there was an appropriate amount of resource to support the development of the solution from within the submitting public agency or department. In addition to GDS, GovTech is drawing upon expertise and senior management from across five central government agencies – Cabinet Office, Department for Business, Energy and Industrial Strategy, Department for Digital, Culture, Media and Sport, HM Treasury, and Innovate UK.

The first of the GovTech challenges opened in May 2018 and firms bidding to the fund will have free rein to create truly innovative fixes. Over 60 percent of the challenges submitted came from central government departments or agencies, while around 25 percent came from local authorities. Solutions will be judged by the GovTech Catalyst steering group, which is comprised of representatives from BEIS, DCMS, devolved governments, Defra, GDS, HMT, Innovate UK, and Number 10. The solutions will then be available to the public sector to purchase.

The GovTech Catalyst works across government to shape challenges before they are launched. Phase 1 of the process is a challenge competition, whereby businesses pitch ideas for solutions to the problem. These submissions are then evaluated with

further follow-up if necessary, and then a shortlist is given up to £50,000 over a one to three-month period to develop their ideas into a functioning prototype. At the completion of Phase 1, the winning businesses and challenge sponsors report on their progress, they can then apply for Phase 2 funding and are assessed by the GovTech board. Some businesses will be taken forward to the second phase where they will receive up to £500,000 to produce a proof of concept that has been tested and found to be functioning successfully in its intended environment. The second phase lasts for up to 12 months and at its conclusion, the challenge sponsors are expected to formally and independently procure their developed solution, while the businesses can receive support from GovTech on commercialising their solution and registering with the Digital Marketplace.

The GovTech catalyst team can be described by a ‘front door’ into Whitehall, serving to connect tech firms to the *right* parts of government through giving them clear access points at which they can propose their latest innovations. Through our research, we identified the importance of conveners playing this role as a ‘tour guide’ to government. One of the biggest challenges that we heard from SMEs who had gone through SBRI was their lack of knowledge in navigating the politics and processes of public sector procurement processes, especially at the stage when they attempt to scale into government.^{81.} The problems translated into challenges for the first cohort of tech businesses are:

- ***Identifying terrorist still imagery (Home Office).*** Home Office research shows that more than two-thirds of terrorist propaganda disseminated online is still imagery. This project will support both government analysis and removal of this harmful material.
- ***Tracking waste through the waste chain (DEFRA).*** The Department for Environment, Food and Rural Affairs is seeking a new technological approach that could help record, check and track waste, helping boost productivity, reduce costs, and protect both human health and the environment.
- ***Tackling loneliness and rural isolation (Monmouthshire Council).*** The Welsh government recognises that rural transport is vital to local communities, and businesses. A technological solution, exploiting vehicles with spare capacity could support rural economies.
- ***Cutting traffic congestion (DfT).*** The Department for Transport believes that greater collection and new analysis of data could help target interventions to cut congestion.
- ***Deploying smart sensors on council vehicles to improve services (Blaenau Gwent County Borough Council).***

81. Cunnington, K. (2018) The Government Transformation Strategy - one year on. *Government Digital Service Blog*. [blog] 8 February. Available at: gds.blog.gov.uk/2018/02/08/the-government-transformation-strategy-one-year-on/

Local authorities have large numbers of council vehicles crossing their areas every day. If they can be equipped with innovative data capture systems, they could understand potholes, litter, recycling, parking, air quality and more in real-time, every day, for no added cost. This could mean reduced service delivery costs and better local services.

Solving a pressing problem in Northern Ireland

The deep dive session in Northern Ireland demonstrated that another way to achieve innovation through government is to retain a laser-like focus on fixing a problem, with the enterprise creation acting as a secondary or spillover benefit. In this case, public entrepreneurial actions led to win-win scenarios which fixed a pressing environmental problem and had the additional benefit of retaining local employment and seed financing a domestic provider of leading edge biomass technology. The process was imperfect, but from our perspective shows what a ‘good’ case study of ‘acting like an entrepreneur’ looks like: messy, agile, adaptive and motivated by a societal challenge.

In December 2012, Invest NI together with the Northern Ireland Department of Agriculture and Rural Development, Department of Enterprise, Trade and Investment, and Innovate UK launched a Phase 1 SBRI called the ‘Sustainable Use of Poultry Litter’ to explore the potential for an innovative solution to the waste-management of chicken litter across the region.

The reason for the call was that chicken excrement from across farms in Northern Ireland was leaking into the water supply, which was responsible for the NI Government not meeting their obligations to the EU Nitrates and Water Framework Directives and facing sanctions from Brussels. The Phase 1 SBRI was for £1m to support the research and development of a concept to sustainably process the litter. Given the scientific literature, which had been published to date, the SBRI was expected to produce a concept for a modern incinerator.

The process started with a launch event with around 80 individuals, and bidding consortia began to form at this stage. Bids were assessed against the strength of the technology proposed and the commercial viability of the solution. Nine commercial contracts of around £65,000 to £75,000 were awarded, and three of these were assessed to be extremely promising. The SBRI process had been planned to extend into a Phase 2, but Invest NI determined that what would be required of the companies during Phase 2 could no longer be classified as R&D. Given the urgency of the environmental impact of the litter and the looming EU sanctions, the departments decided to launch a loan scheme for the Sustainable Use of Poultry Litter (SUPL).

The SUPL loan scheme was originally for £12m to support 40 percent of the design and costs of operation and construction of anaerobic digestion demonstration units. Two solutions were awarded loans – the Glenmore Project based in the Republic of Ireland in Ballybofey, led by Connective Energy Holdings and the

Tully Project based in Tully Quarry by Stream BioEnergy. The Glenmore Project was a £23m project involving a £9.3m SUPL loan, and its operation made for a circular economy involving the bottling and sale of CO₂, liquid fertiliser, and saleable biogas. The Tully project was a £23.3m project involving a £7.4m SUPL loan and £1.3m in equity from the SUPL scheme, it is the first anaerobic digestion plant in the world to be exclusively processing poultry litter. The Tully Project was the higher scorer in the Phase 1 SBRI competition, and ahead of its launch in September as been operating with a 45 percent increase in its processing capacity. One of the key architects with the SBRI to SUPL project, Eoin McFadden, explains that processes like this have “always been about an entrepreneurial approach to problem solving.”

This case study shows not only the potential of SBRI to identify and overcome assumed norms (ie that an environmentally unfriendly incinerator was the only approach), but also its ability and flexibility to produce a solution that solves a complex social problem and grow the economy simultaneously.

CivTech®: a platform for public service innovation

CivTech® is the Scottish government’s award-winning programme that adapted the traditional two-stage SBRI process. The process begins with ‘Challenge Definition’, engagement with government organisations across Scotland to identify problems that require an innovative unknown solution. These organisations become ‘Challenge Sponsors’ and commit the budget to support the process. Previous challenges have covered areas such as environment, health, cyber, transport, tourism, local government, and young people.

The second step is the ‘Challenge Stage’, where challenges are released and open to submissions. Any type of business can apply to compete from sole traders and newly formed start-ups to established businesses. CivTech® and the Challenge Sponsor assess the solutions over a four-week period to identify three who will go through to the ‘Exploration Stage’. The third stage is a Phase 1 SBRI where the selected three companies receive £3,000 each over a three-week period to develop their submissions in partnership with the challenge sponsor. One team is then selected to progress to the ‘Accelerator Stage’ where they receive £20,000 over a four-month process to create a minimum viable product (MVP). This comprises 40 workshops on product, business and personal development, as well as facilitating access to executives across the public sector and involving citizens in the development process. The fifth step is the ‘Demo Day’ to demonstrate solutions to government bodies and private investors. The final step is the ‘Post Accelerator Stage’ where the winning company and their challenge sponsor can continue working together to develop and scale the solution. For the first two cohorts, companies could receive up to £80,000 at this stage.

CivTech® sees its value proposition as brokering between government and the commercial sector. Whilst accountability sits with the host department, the role of the broker is in spotting talent and

matching it to the departmental need. The entrepreneurial broker plays a key role in seeing the potential market for the proposed solution, while also connecting it to the problem.

By not retaining any of the intellectual property and working under the stepped £100,000 funding limit, the process is relatively low risk for sponsors who after £3,000 could have a concept. In its first two years, the process has achieved traction within both the Scottish public sector and start-up communities. Sixteen of 18 companies are still operational, with the first cohort of nine companies winning over £1.23m in contracts post accelerator and over 30 new jobs created, with one challenge sponsor making a cost avoidance of £1.5m in the second cohort.

Providing a coworking space for the companies and challenge sponsors enables the cross-pollination of tech, skills and expertise. This brings together public, private, third sectors, academia, investors and citizen groups where everyone plays a part in a curated manner. Blending these sectors within a single studio creates an energy around the delivery of product that is rarely seen in policy making.

Proximity to the problem

If the goal of innovation through government is to solve public problems, then these case studies show a range of agile routes to prototypes can enable this, pointing to the vital brokerage role required to enable public entrepreneurship. The chicken litter case study, however, demonstrates how quickly a tangible solution can be found to an urgent problem. This required a flexible, problem-solving mindset and a sophisticated understanding of the problem, alongside deep knowledge of the process and best use of different funding tools (SBRI/Loan finance), and the ability to navigate trade-offs between what should happen in an idealised situation, and what was possible given incentives and constraints. This is acting with the confidence of an entrepreneur, while showing the competence of a systems thinker.

Procurement teams and problem-owners will rarely be solution experts, but they must be able to see the bigger picture, be curious to learn about options and find answers to the challenges they face. This is the open mindset of the public entrepreneur. In the next chapter, we look at the biggest challenge to face them on this journey: scale.

7. Achieving Impact at Scale

According to Tech Nation over the past five years, the UK digital tech economy has attracted more venture capital and private equity than any other European country.⁸² To add to this the Public 100, a recently published list of UK GovTech companies claims that the market for GovTech in the UK could soon rival that of Fintech market. But here it is important to remember that public sector markets rarely behave in the same way as their private sector counterparts.⁸³ While this report has detailed the entrepreneurial work of innovators in governments around the world (I-Corps, GovTech, CivTech® and the NI Innovation Lab), a common theme is that the enterprise innovations run into scaling challenges. Even with great evidence-based minimal viable products, many struggle to get innovations deployed at scale and operational in the field.

Scale is one of the most feted and yet most opaque concepts. With tech for good it can mean many things: from a campaign going viral on social media to the much sought after billion-dollar valuation of a ‘unicorn’. Perhaps lessons about scale can be learned from the world of international development, where funding has always been directed towards social impact. The International Development Innovation Alliance (IDIA) 2017 report on scaling innovation says:

“Scaling is more than only the growth of an organization, which is the dominant model pursued by those in the venture capital world. Adaptation and replication through other entities (eg via franchising, licensing and sometimes just pure imitation) are also valid and important routes to scale. Funders therefore would benefit from greater guidance around the diversity of pathways, actors and approaches available across the scaling process, and how to plan for and execute effective partnerships / ‘hand-off’ to these stakeholders at appropriate points.”⁸⁴

82. Tech City (2017) *Investment in UK digital tech*. [online] Available at: technation.techcityuk.com/investment/

83. Desmond, J. and Kotecha, B. (2017) *State of The UK GovTech Market*. London: Public. Available at: www.public.io/wp-content/uploads/2017/07/Public_GovTech_market.pdf

84. International Development Innovation Alliance (IDIA) (2017) *Insights On Scaling Innovation*. IDIA. Available at: www.educationinnovations.org/sites/default/files/Insights%20on%20Scaling%20Innovation.pdf

The report makes the essential point, that for problems to be solved and social enterprises to be created, sustainability and scaling of innovations are so closely related they must be considered jointly. They say: “While it may be possible to scale up an unsustainable innovation, this would be futile... Equally, if an innovation is scaled up without adequate attention to sustainability, its impact will be undermined. Finally, the various influencing factors that support or limit scalability will also be relevant for sustainability, including financial viability, the policy and political environment... For these reasons, ‘scaling’ should be viewed holistically as the process of replicating, adapting and sustaining an innovation across large geographies and populations for transformational impact.”

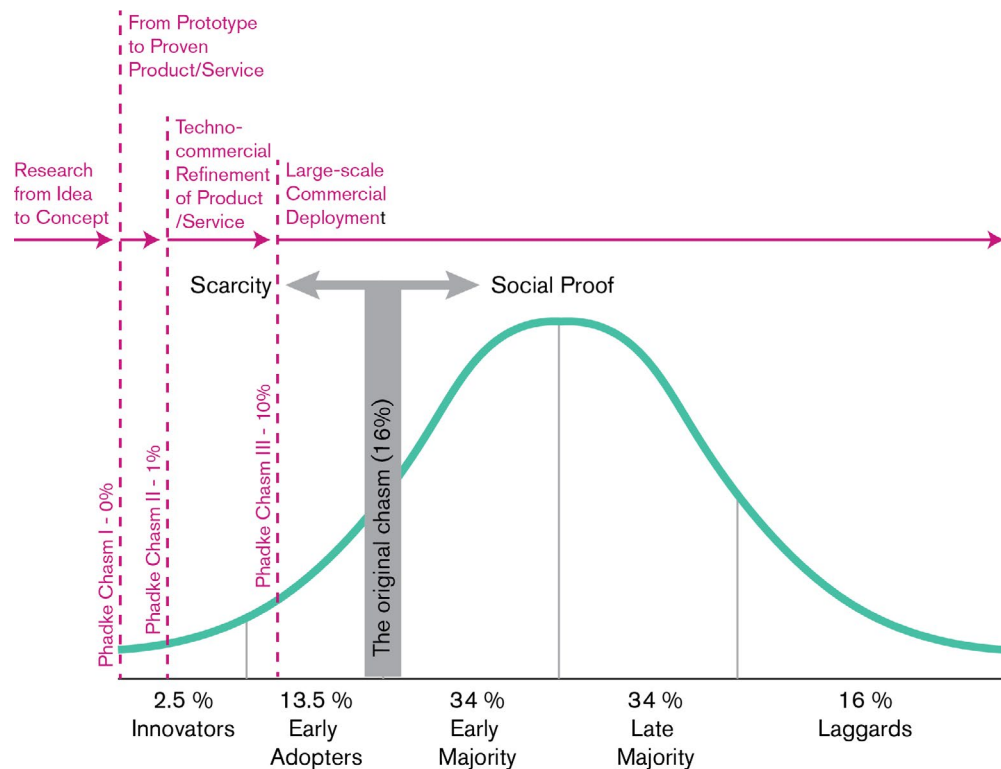
Getting innovation adopted in government

“Replicating, adapting and sustaining innovation” is not as simple as it sounds. Many models of enterprise scale are premised upon assumptions of diffusion based on Everett Rogers’ 1962 adoption curve that follows a pathway from slow diffusion, through rapid growth, to saturation, then slowdown. As we suggested in our last report, while Rogers’ theory is still widely used, this curve does not speak to the complexities of scaling tech innovations into government institutions today.

Uday Phadke, author of *Camels, Tigers & Unicorns* suggests that Rogers’ diffusion theory overestimates the rate of customer growth in the early stages of commercialisation.⁸⁵ He speaks to the complexity of market entry by showing that there are three chasms to be crossed before mainstream markets can be accessed. He describes a “Triple Chasm Model” of scaling (as illustrated below) which he applies to all firms irrespective of whether their customers are private or public sector. For him scale and sustainability are interlinked, he says: “the key to success lies in successfully crossing Chasm II, which is concerned with establishing a sustainable business model.”

85. Phadke, U. and Vyakarnam, S. (2017) *Camels, Tigers & Unicorns: Re-Thinking Science And Technology-Enabled Innovation*. London: World Scientific Europe

Figure 5: Triple chasm model of scaling



Building a sustainable business model is a core part of pre-commercial development and tools like SBRI give companies the opportunity to cross Phadke’s first two chasms and take an idea to an emerging concept solution and a proven prototype. However, the challenge for both the public sector buyer and the would-be GovTech enterprise is large scale deployment in government – crossing chasm three. This is where the idea hits up against the absorption capacity of the government institution it is trying to change – as illustrated in the Poly Photonix case. Phadke cautions: “Popular enthusiasm for commercialising science and technology is unfortunately not matched by a clear understanding of the structures, processes and mechanisms which actually drive this transformation. This gap is serious because it affects all those involved in generating ideas, transforming them into viable products and services, and funding the process.”

If start-up entrepreneurs can show a tendency toward naivety with assumptions about the ease of absorption into public institutions, government actors can equally demonstrate a naivety about commercial markets. Kostas Selviaridis in his 2017 report on SBRI called for more active support for commercialisation activities of SMEs in line with the remit of the US equivalent scheme (SBIR) which formally caters for a Phase 3 focusing on commercialisation.⁸⁶ Through our inquiry, we have come to agree, as this would potentially help increase the rate of turning promising ideas and prototypes into marketed products. The intention behind this third

86. Selviaridis, K. (2017). *Public procurement of R&D and innovation in the UK: Is there alignment between policy and practice? A study of the Small Business Research Initiative (SBRI)*. Lancaster: Lancaster University

phase would be facilitating the readiness of new products / services to be adopted.

Understanding barriers to adoption

Commercial nous and knowledge of the structure of the target institution alone will not enable scale – knowing the shape of something does not mean you can alter it. As we suggested earlier, complex organisations rarely ‘get in line’ and their structures, incentives, rules and norms can all combine to create what we termed a ‘system immune response’ to the absorption of innovation. We based this on the concept of ‘immunity to change’ originated by Harvard psychologist Robert Kegan and his colleague Lisa Lahey at the Harvard School of Graduate Education.⁸⁷ Their theory looks at how and why individuals and groups inadvertently work against their own goals to prevent change happening and can be applied when we think about ‘immunity to scale’ in organisations.⁸⁸

To understand barriers to adoption, the RSA Lab advocates the use of system mapping techniques based on Kegan’s thinking to understand the cultural forces that will enable or block scale, looking at the actors and assets that can be brought to bear, the institutions, incentives, and interests that shape behaviour, and how they can be influenced to increase the likelihood of adoption.

Mapping institutions is not a simple task, especially in government bodies where custom and practice has shaped norms for decades, or incremental change has fragmented systems. In a BMJ Innovation article from 2016, Axel Heitmueller, Adrian Bull and Shirlene Oh provide a useful analysis of the level of fragmentation that can occur in institutional systems by describing the barriers to adoption of new tech innovation in the NHS.⁸⁹ They say:

“We know that there are a number of barriers to the adoption and diffusion of innovation - cultural, operational, structural and regulatory... UK healthcare has become a highly fragmented system with more than 200 payers (a mix of Clinical Commissioning Groups and central commissioning), nearly 200 trusts with turnovers ranging from more than £1bn to a few hundred million, more than 8,000 primary care practices and a structural separation between the NHS and social care of which 90 percent is provided by private organisations. This creates a confusing myriad of entry points for entrepreneurs and industry as almost all of the above organisations make autonomous purchasing decisions. Such a complex system cannot provide an efficient market for those who wish to sell new products or services into it.”

87. Harvard Graduate School of Education (2017) *Robert Kegan*. [online] Available at: www.gse.harvard.edu/faculty/robert-kegan

88. Usable Knowledge (2001) Overcoming “Immunity to Change”. *Usable Knowledge*. [online] 25 July. Available at: gse.harvard.edu/news/uk/01/07/overcoming-immunity-change

89. Heitmueller, A., Bull, A. and Oh, S. (2016) Looking in the wrong places: why traditional solutions to the diffusion of innovation will not work. *BMJ Innovations*, 2, pp.41-47

They point to the competing incentives that such a level of fragmentation creates: “savings from the adoption of innovation do not always occur to those making the investment, or they appear to take too long to materialise to be meaningfully accounted for in annual budgeting. As a consequence, invest to save schemes are increasingly challenging.” To avoid the burn-out of the individual public entrepreneur continuously fighting against this type of system immunity, it is incumbent upon governments to understand these constraints and provide spaces to experiment with methods to address them.

The public entrepreneur as steward of scale

While we have no silver bullet, the case studies in this report point to different ways to foster enterprise innovation and work collaboratively with problem owners to get innovations to scale and solve public problems. We have given some examples of experimental spaces such as the Helix Centre that create fertile territory for adoption in government. GovTech scale-up programmes will have the greatest potential of success if they work closely with the problem owner to solve problems first, with the wider market capture as a secondary feature. This is an ‘invest to solve’ approach as opposed to a traditional ‘invest to save’ one – the key difference being that funds are more ‘patient’ and don’t prioritise immediate savings, but rather focus on collaborative experimentation to find the solution to a problem.

The role of the public entrepreneur as broker of this work is key and could be otherwise described as ‘innovation stewardship’. This goes beyond the ‘resource stewardship’ that is prized in invest to save programmes (where practitioners are judged on their efficient management of public funds) and focuses on the stewardship of the problem resolution and scale into government (as illustrated in the chicken litter case study, when the practitioners used whichever tool was appropriate to solve the problem at hand). The Helsinki Design Lab describe stewardship as “the art of getting things done amidst a complex and dynamic context” and see it as a core capability for agents of change.⁹⁰ Convening problem owners with problem solvers alongside a diverse array of experts and civil society actors in an open experimental space should become the operating system of the public entrepreneur.

This report has shown how GovTech Catalyst and CivTech® as well as Innovation Labs are doing this, but there are opportunities to build and test these systems into mainstream practice. Departments and mayoral offices could allow for agile teams to come together to focus on the problems that their departments are facing and use SBRI from example structures like GovTech Catalyst or CivTech® to enable scale. One example of where this is happening is in the Department for International Development (DFID) which is experimenting one such system

90. Boyer, B., Cook, J.W. and Steinberg, M. (2013) Helsinki Design Lab: Six Stories About The Craft Of Stewardship. Sitra. Available at: helsinkidesignlab.org/peoplepods/themes/hdl/downloads/Legible_Practises.pdf

with its Emerging Policy, Innovation & Capability (EPIC) team that builds “digital, emerging technology and innovation capability across the organisation, with other UK government departments and external partners, and driving cultural and organisational change.”⁹¹. EPIC provides coaching and consulting across DFID’s various programmes and offices, promoting new tech such as Blockchain, UAVs, and 3D printing and managing two demonstration programmes: the Global Innovation Fund (a venture-style development innovation fund) and Amplify (a human-centred design-led, early-stage innovation fund programme).

Solving problems, scaling solutions

While the nirvana is to create businesses that harness the potential of disruptive technology to solve the problems of our time while smoothly entering the supply chain for market distribution – rarely is anything that smooth. We saw this kind of ‘win win’ with the Northern Ireland chicken litter case study – but it was considerably less polished in its process (and we would argue, necessarily so).

Impact at scale looks different with every problem it seeks to solve. Our research suggest that scale-up programmes currently show clear direction of travel toward venture capital funding as the answer to scale. While this is understandable given the mandate to both solve problems and create business, it does mean that the primary marker of success is in enterprise creation not problem solving. But today’s societal challenges present such a complex array of problems that the routes for tech for good will not always mirror venture capital markets. One solution to the scaling challenge then might be to pilot an ‘Invest to solve’ programme inside a central government department like the Treasury, in city mayor’s offices, or in major public service providers like the NHS to provide a patient route to scale and commercialisation – with the priority being solving the problem.

91. Department for International Development (2018) *AI (Grade 6) Head of Innovation*. [online] Available at: civilservicejobs.service.gov.uk/csr/jobs.cgi?jcode=1591464

8. Recommendations

To have impact our recommendations aim to support those practitioners with the mandate to solve societal challenges – the public entrepreneurs who are seeking to move fast and fix things. The following recommendations are aimed at creating the conditions for public entrepreneurship: they focus on the *people* required to navigate this framework; the *processes* they need to support them; and the *policy* change required to enable impact.

To foster entrepreneurial people...

To unleash the latent talent within local authorities and regional governments, we recommend that every mayor's department, local authority, and government agency identify, nurture or recruit a Public Entrepreneur to act as steward for innovation – affording this person or team with the safe/fail environment and leadership sponsor needed to experiment with new tools and try out new practices. This doesn't mean that every locality needs to find a 'whiz kid' or establish a Lab – many of the tools we describe in this report can be adopted virtually by existing teams with no requirement for policy change. To champion public entrepreneurship may simply require executive endorsement of those passionate individuals who are already trying to drive change.

To develop the skillset and mindset of the Public Entrepreneur, an opensource learning curriculum should be widely shared to enable change through networks such as One Team Gov and others. The curriculum could be akin to the School for Change Agents⁹² from NHS England, Omidyar Foundation's system change MOOC,⁹³ or Forum for the Future's School for Systems Change.⁹⁴ These action learning environments cultivate the space for learning communities to develop new practices, and share examples of their impact, and start to build a new field within the public sector.

Through our research, we identified the importance of public entrepreneurs playing the role as '*tour guide*' to government – navigating the politics and processes of public sector procurement processes and departmental norms. Tour guides need to have travelled – so we recommend the development of 'skills passports' to support the cross fertilisation of knowledge and skills. These

92. NHS (n.d.) School for Change Agents. [online] Available at: www.schoolforchangeagents.com/login.asp

93. +Acumen (2018) *Systems Practice*. [online] Available at: www.plusacumen.org/courses/systems-practice

94. Forum for the Future (n.d.). *System change for sustainability*. [online] Available at: beta.forumforthefuture.org/school-of-system-change?gclid=EAIaIQobChMIs_C9ls6e3AIVTb7tCh3bHAS3EAAYAiAAEgJJR_D_BwE

skills passports or digital badges for public servants mean that skills credits can be collected and verified and allow for career portability of public entrepreneurs encouraging regular border-crossing, and deeper understanding of the cultural conditions of different parts of the system.

To create the processes for public entrepreneurship...

Building on the success of SBRI, there is an opportunity to pilot a new approach to mission-led public procurement more broadly which we call 'Invest to solve'. This would be a service that assembles the right teams with key knowledge and expertise around a particular societal problem and the commercial knowhow to match problems with markets. This could sit in central government working with GDS and the GovTech team. Local Invest to solve pilots could be tested in regional and local government, the devolved administrations and other agencies to provide support and direction for public investments.

To underpin public entrepreneurship with policy...

Undertake a procurement policy sandbox in readiness for Brexit, testing the thresholds that extend beyond the existing OJEU R&D threshold. This should purposefully model and stress test the potential of higher thresholds post-Brexit to enable greater uptake of these enhanced methodologies.

In the policy sandbox, develop and test the use of a new procurement category of 'Social Impact' to support the delivery of 'Invest to Solve' pilots. If tests show that this adds value to the process, add a Public Value Test to the Social Value Act.

Conclusion

Throughout this report, we have looked at the attributes of the public entrepreneur, the cultural conditions needed to foster their success and the tools they can use to stimulate enterprise innovation for public good. What we have discovered through this process is that the life of the public entrepreneur is hard. It is either a high stakes game where practitioners themselves take on the risk of failure, and failure itself is seen as catastrophic, or it is contained in the Lab, with scaling into mainstream practice an ever present challenge.

But there are bold experiments underway and the ones with SBRI that we catalogued show how public funds might be used to stimulate innovation for public good and give some form to what an 'invest to solve' approach might look like in mainstream practice. Through this inquiry the RSA Lab also built out a framework for innovation through government – looking at three key phases: understanding problems, creating solutions, and achieving impact at scale, a detailed playbook for this can be found in the Appendix.

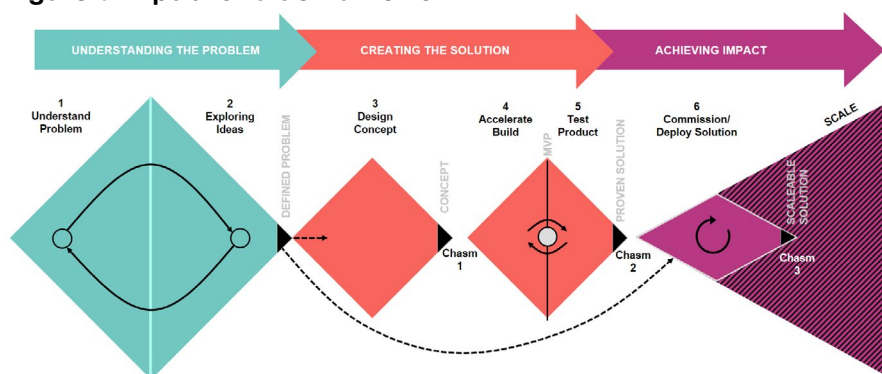
Finally, it is important to note that shifting traditional practice and acting as a public entrepreneur will never be an entirely painless experience. It takes more than a bullish hacker stance to make change happen – it takes competence and confidence to use tools

like SBRI to take appropriate risks with public money to stimulate greater returns, so this is not for the faint-hearted. Our intent with this report is not to present unachievable models of perfection – but rather to demonstrate that there are emerging pathways to new practice and passionate public servants who are already making change by ‘moving fast and fixing things’.

Appendix: A Public Value Framework

The aim of this framework is not to provide a ‘sausage machine for innovation’ using SBRI, rather it is a flexible process that simply identifies core components of the journey to enterprise innovation and could apply to a broader range of funding tools including commissioning, venture philanthropy, impact investment, challenge prizes, open procurement platforms, and charitable grants. The suggested Public Value Framework is illustrated below:

Figure 6: A public value framework



In this inquiry, we looked at how innovations succeed or fail to solve public problems in a range of contexts. The RSA Lab set out to understand the relationship between problems and solutions. By tracking processes that have worked in different ways we sought to establish principles for public entrepreneurialism and a flexible framework that could drive the creation of public value. Ways to use this framework is set out in the Public Entrepreneurs Toolkit, below:

1. Understanding problems

The problems we are required to address through public funding are increasingly complex: how do we tackle homelessness, stimulate enterprise innovation, reduce obesity? We need an alternative approach to understanding the problem before we can think about investing in a solution. Problem definition occurs under incomplete information and a limited understanding of what potential solutions look like. Here, we look to the framework to understand how to take an emergent problem as a starting point and deploy a range of methodologies to fully understand it and enable a clear problem statement to be prepared. It does this through stages:

1. UNDERSTAND PROBLEM undertaking research to understand the problem more deeply, including a range of perspectives.
2. EXPLORING IDEAS engaging the market to gain a range of commercial and/or tech insights, including horizon scanning of new trends and developments, and historical review of what has been tried before.

Figure 7: Understanding the problem

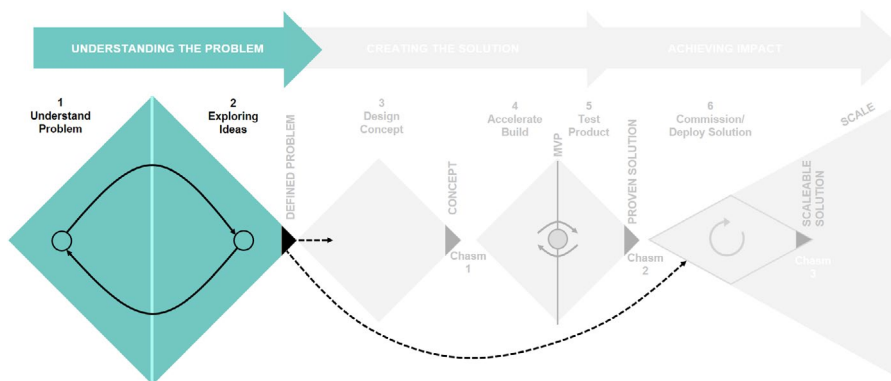


Table 2: Understanding the problem

Understanding the problem	
<p>1. Understand the problem <i>What are you trying to achieve?</i></p> <p>Reach a clear problem statement through sufficient understanding to identify if a problem is worth solving.</p> <ul style="list-style-type: none"> ◆ Understand the problem from a range of perspectives. ◆ Engage the problem-owner to ensure they are clear about the problem and the potential routes to solution. ◆ Understand incentives in the system and the system complexity. ◆ Talk to those most affected by the problem. <p><i>How do you do it?</i> Engagement, research, literature review.</p> <p><i>What works</i></p> <ul style="list-style-type: none"> ◆ Identify the problem-owner as the service manager or accountable person. ◆ Ensure the problem-owner fully understands the problem or challenge, and that they are agnostic about the solution. ◆ Be proactive at this stage, as it will ensure you can select the right route to solve the problem. ◆ Ensure that there is no existing solution already available. ◆ Deploy resource(s) to the most promising problems to help understand which are most suited to SBRI. 	<p>2. Explore the ideas <i>What are you trying to achieve?</i></p> <p>Identify whether there are potential solutions or elements of a solution in the world, so that you know if there is value in proceeding to the 'create a solution' phase and prepare an initial problem brief.</p> <ul style="list-style-type: none"> ◆ Host an open session between the problem owner(s), the potential beneficiaries and the market provider(s). ◆ If there are solutions available already, consider why are they not being deployed? Is it that the solution has some drawback or is it an adoption challenge? ◆ Where potential solutions exist, review applicability for the current context. <p><i>How do you do it?</i> Open days, Workshops, Briefings.</p> <p><i>What works</i></p> <ul style="list-style-type: none"> ◆ Encourage networking – a spillover effect can be the connections made ◆ Ensure the potential providers can question the problem owners ◆ Promote the sessions widely and encourage as broad a range of companies / start-ups etc to attend as possible. ◆ Do your own research to see who/what is currently available in the market. ◆ Ensure you are not seeking to solve a problem that has been solved elsewhere. ◆ Do be prepared to revisit the original understanding of the problem in the light of new insights

To tackle a public problem with start-up ingenuity we need to unearth and explore a range of potential solutions, brokering between competing ideas, and drawing on creative and innovative approaches. This part of the process takes the problem statement as its starting point and goes through three stages: design the concept, accelerate the build and test the product.

- ### Figure 8: Creating the solution

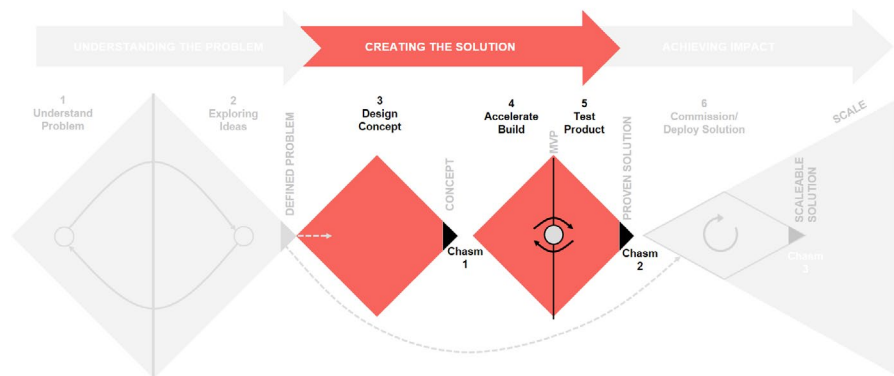


Table 3: Creating the solution

Creating the solution		
3. Design Concept <i>What are you trying to achieve?</i> Produce a working prototype that demonstrates whether a potential solution is possible ♦ Identify and build potential component parts of a solution	4. Accelerate Build <i>What are you trying to achieve?</i> Move from prototype to working proof of concept with a minimum viable product ♦ Fund the acceleration phase directly to the provider and indirectly through the support ecosystem	5. Test Product <i>What are you trying to achieve?</i> Reach a proven, viable market-ready solution that can be commissioned ♦ Use the proven solution to prepare a brief / specification
<i>How do you do it?</i> Deploy start-up (eg challenge prize) or design routes (eg design Sprint, Social Lab) at this stage in order to build, test, iterate.	<i>How do you do it?</i> Support start-up or design routes (eg design Sprints, user testing) at this stage as providers build, test, iterate	<i>How do you do it?</i> Determine the most appropriate Investment Route
<i>What works</i> ♦ Co-locate providers working on the problems to share expertise and cross-fertilise new ideas unrelated to the brief ♦ Provide a support ecosystem such as mentoring, tech, admin etc ♦ Don't be afraid to pull on a weak prototype or solution that shows little promise ♦ Be aware the best solution may just come from an innovator working on the problem in their spare time	<i>What works</i> ♦ Don't be wedded to the original route, be prepared to pivot ♦ Be clear that the funding at this stage may come from a range of sources ♦ Do continue to provide the support ecosystem ♦ Don't be afraid to pull out if the MVP can't be reached or the solution shows little promise	<i>What works</i> ♦ Be flexible with the finance options / packages used ♦ Don't pursue a solution just because you've reached this stage and it doesn't look as though it will really solve the problem ♦ Don't be afraid to use insights to move back to a different phase, perhaps reworking the original concept, if there remains promise

3. Achieving impact

Public entrepreneurs, having arrived a proof of concept by the end of the development phase need to have tested markets and commissioning processes through which the intended solution can solve the problems. This is the hardest part and is where substantive work is required. The public entrepreneur must be able to learn how to create the conditions for scale right at the beginning, not waiting to the end of the process to commercialise and/or deploy the innovation they have brought into being. So our final step is:

6. COMMISSION/DEPLOY SOLUTION: solution commissioned and deployed for the first time to solve the problem/challenge.

Figure 9: Achieving impact

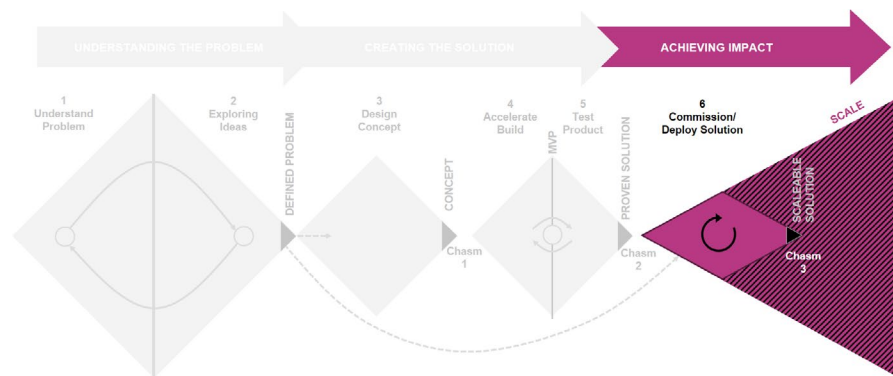


Table 4: Achieve impact

Achieve impact
<p>6. Commission/Deploy the Solution</p> <p><i>What are you trying to achieve?</i></p> <p>Buy and implement the solution to the problem</p> <ul style="list-style-type: none">♦ Follow a more traditional commissioning route using the specification developed through the process♦ Consider “immunity to scale”. <p><i>How do you do it?</i></p> <ul style="list-style-type: none">♦ Prepare a specification and run the most appropriate commissioning process♦ To understand barriers to adoption, map the system you are trying to enter: the cultural forces that will enable or block scale, the actors and assets that can be brought to bear, the institutions, incentives, and interests that shape behaviour, and how they can be influenced to increase the likelihood of adoption. <p><i>What works</i></p> <ul style="list-style-type: none">♦ Bring problem owners and problem solvers together – test in live environments♦ Check back to the original problem to ensure that it, or the context, has not changed in the time taken♦ Be flexible with the specification and the process at this stage. Having run a nimble and responsive process to date, one that hopefully creates value for all involved, it does not make sense to enter in to a more traditional, negotiated, value-extraction, contractual dynamic at this stage

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