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Creating a thriving environment for innovation in public health service delivery

Brief 1: Definitions, barriers, and enablers of innovation capability

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1. Introduction

Health systems face the combined challenge of increasing demand due to a rising burden of chronic disease and limited resources[1]; they also face rapidly changing environments and emerging public health threats that need a quick response.[2] These challenges create a pressing need for innovative capabilities[3] and ongoing fundamental rethinking of how we design, finance and deliver health services.[1,2,4] Moreover, health systems need to transform to meet the changing health needs of populations [5]— thus the need for innovation in health systems is self-evident.

The Western Cape health system faces the same set of challenges confronting government health departments and agencies worldwide. Still, it may feel the burden of some challenges more intensely due to inequality, unemployment, poverty, and health inequity.[6] Alongside these, a growing body of evidence shows the significant impact of social and physical environments on the health of communities.[2]

The COVID-19 pandemic has also shaken things up, impacting the ability of health systems to provide undisrupted health services, amplifying gaps in delivery, and showing that governments need to rapidly upscale investments in essential public health functions.[7,8] In addition, COVID-19 drew attention to vast inequalities in access to healthcare and the need for new patient-centric models of care.[8] However, it has also sped things up and led to urgency-driven innovation across the globe and nearer to home in Cape Town and the Western Cape.

In the PRIMI project, we recognise that the project stakeholders are and will continue to be under immense pressure to "work smarter" with increasingly limited resources due to COVID-19 associated fiscal pressures as well as a low-growth economic environment. There exists the need to transform the entire health system to be proactive rather than reactive.[9] Getting "more for less" requires innovation in healthcare delivery, clinical care and interventions, and systems design[10]—that's the challenge here, and the opportunity.

PRIMI's remit is primary healthcare. The approach focuses on organising and strengthening health systems so that people can access health and well-being services based on their needs and preferences early on and in their everyday environments.[7] It entails three inter-related and synergistic parts[7,11]:

1. Comprehensive, integrated health services,
2. Multisectoral policy and action to address wider determinants of health, and
3. Empowering people and communities.

Why the focus on primary healthcare? It is the foundation of a good health service,[5] and investment in quality primary health care will be crucial for achieving universal healthcare worldwide.[7] Enhancing impact through innovation can accelerate this coverage and help maintain the gains already made.[7] In addition, implementing innovation will likely impact downstream health outcomes and costs, prevent disease progression, and reduce demand at secondary and tertiary healthcare facilities.[12]

However, in many cases, primary healthcare has to be re-engineered. It requires experimentation with new approaches to care delivery to initiate contact with users and promote access, equity and quality, all while moving to greater cost-effectiveness.[13]

But innovation in health systems is not straightforward; it is challenging and complicated.

2. Thinking about innovation

It is easy to get caught up in swathes of alternatives set out in review articles, but from the outset, it is critical to have a practical working definition so that we're thinking in similar terms when we speak about innovation.

Though there's no hard and fast definition for innovation, there's consensus that at its core, innovation is about doing something new and different; and getting it out there.[14,15]

Thought leaders, IDEO[1], define it like this:

> *Innovation is the ability to generate and execute new ideas—incremental, evolutionary, or revolutionary—and it starts with creativity.*[16] *And creativity is the ability to look past the obvious—to transcend traditional ways of seeing the world to create something new.*[16]

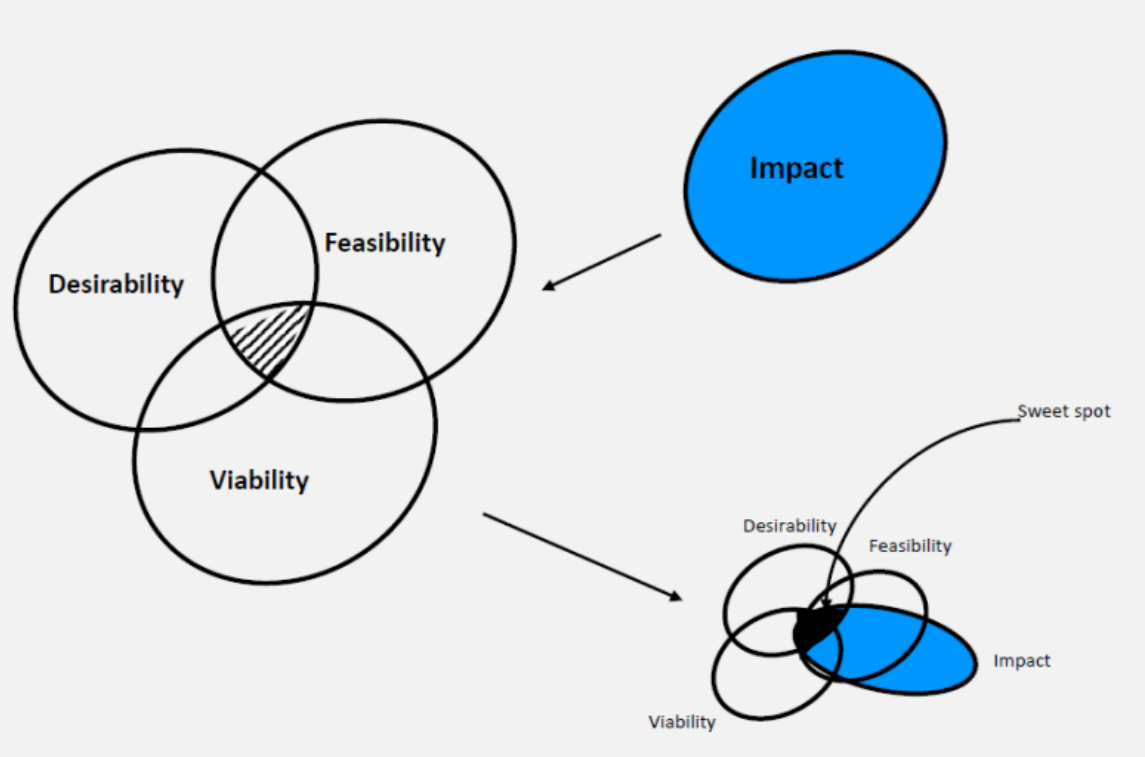
It can signify both **an activity**, and **the outcome of the activity**. So, innovation outcomes include things like new technologies, models, regulatory frameworks, and even processes.

But we're going to focus on innovation **as a process or action**—a structured, collaborative process that involves different parts of an organisation and outside partners to create and exploit new opportunities and find new ways to solve complex problems.[17]

It's more accurate to think in terms of innovation processes and activities[1,18]—all the technological, scientific, organisational and financial steps which actually lead or intend to lead to the implementation of innovations. Activities can either be innovative in their own right or, while they may not be novel, may be necessary for implementation.[18] These processes include *adoption, implementation, sustaining, dissemination and scale-up.*[1] But it's not that straightforward. Each of these processes can involve another *series of processes within themselves.* Innovation processes rarely follow a linear and predictable sequence, and they tend to overlap and interact in complex ways.[1] In reality, innovation processes are dynamic and tend to be quite messy.

Whether you're thinking about process or outcome, innovation strategy often refers to the *innovation sweet spot, which lies at the intersection of desirability, viability, and feasibility* (see Figure 1).[19] More recently, there have been nudges to include a fourth layer to the framework: integrity, which takes the broader, future impact into account (i.e.: *responsible innovation*).[14,20]

Figure 1: Impact—A new innovation sweet spot?[2]



[1] IDEO a multinational design and consulting firm and are thought leaders in design thinking and innovation.
[2] Fecheyr D. How to test whether your innovation strategy is socially responsible. Board of Innovation. Published online 2019.

3. Public health delivery innovation: how is it different and the same as innovation elsewhere?

We've already framed the challenge as **"more-for-less in the face of ambiguity and uncertainty"**, but government departments need to innovate for other, less apparent reasons. For example, they have a role to play in the real economy as early customers, there's pressure to attract and retain highly skilled individuals, and the need to maintain credibility.[17] New technologies are emerging, and knowledge is increasing faster than ever before; there's a public expectation that government should keep the pace.

Public sector innovation looks a little different to its private-sector counterpart. Key differences are drivers and objectives. The private sector is often more agile and responds to tech changes and changing environments; they pursue competitive advantage.[3,14] On the other hand, the driving factors in the public sector are often multiple and competing, and they often require striking a balance between competing values.[14] That said, external forces aside, the main drivers of public sector innovation are usually **the need to respond to delivery challenges (supply-side), increased demand for services, or fiscal pressure.**[3] Longstanding challenges and inefficiencies around affordability, outcomes and quality are not new[25]—they do, however, provide fertile ground for innovation.

The OECD maintains that there are three necessary elements to public sector innovation: **novelty, implementation *and* impact**—innovations that aim to achieve real value for society.[14] The Public Health National Centre for Innovations[3] (PHNCI) takes it further, listing features it considers absolutely critical an innovation practice or activity in the sector[2]:

- **Responds to the dynamic state of change** in health systems,
- Involves **the entire stack of partnerships, stakeholders and end-users** for co-creation and collaboration,
- Lends itself to **adaptation, replication and diffusion,** and
- They **create data for evaluation** and course correction.

Where possible, they should **use open-source tech to facilitate uptake and replication.**[2]

There's also a weightier component to innovation in the public sector: social responsibility. There's a burden to distribute the resulting benefits widely, to share them equitably, and that they are sustainable.[1]

Building an understanding of how innovation happens in government departments is gaining traction with researchers and policymakers. It's a trend that shows that complex, 'wicked problems' need new and different perspectives because sometimes traditional approaches don't work.[14] Of course, government departments can adopt innovation practices from other sectors, but ultimately, they must chart their course and reimage how they innovate and operate.[17,26]

Health systems and public healthcare delivery innovation.

"Health care innovation is thinking creatively about what healthcare is and how we deliver it".[4] That means we're *not* just thinking about new drugs, apps and devices, but **service innovation, new ways of organising care, measurement tools, adaptive strategies, and new payment models that move from fee-for-service to a value-based approach.**[5,27] That could be through creating and introducing something entirely new, but equally legitimately, by adapting an idea that's had success in another sector or setting and deploying it in healthcare.[27]

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https://www.boardofinnovation.com/blog/how-to-testwhether- your-innovation-strategy-is-socially-responsible/

[3] PHNCI is a US based organisation, which is a division of the Public Health Accreditation Board, that aims to fostering alignment and spreading innovations in public health practice. It also aims to be a go-to resource for ideas which inspire innovation in public health to improve the health of urban and rural communities in the US.

It should be an **ongoing systematic process that can generate incremental or radical change.**[2] Still, although there's a close link between continuous improvement and innovation in health care, they're not the same thing.[28] They draw on similar expertise, but **innovations typically involve a step-change** (discontinuous change).[28]

Public health innovation refers to developing **new processes, policies, products, or programmes** that increase **quality, impact, and efficiency.**[2] They can transform entire systems to increase equitable access to quality care.[12] Still, to achieve this in the face of dynamic and ambiguous change, public health innovation practice must be transformed.[2]

Figure 2 illustrates that innovation in public health practice can be conceptualised as practices that move along three points of a spectrum[2]:

1. **Emerging practices** are public health innovations that **come from a single or small group** of health departments and are **new to the field,**
2. **Leading practices** that have been adapted and adopted, or replicated by other departments; **not necessarily innovative, but they are still not 'business as usual'**—instead, they become best practices with increasing numbers of health departments likely to emulate them, and
3. **Prevailing practices** are **diffused and in play** throughout the public health practice community.

Figure 2: Public health innovations — A continuum[4]

Once the evidence of the effectiveness of the innovation grows, it can become a prevailing practice that can transform the field of public health.[2] Just like there is no defined roadmap for successful public sector innovation, there's no single approach to managing and leading innovations that will work best in all situations in healthcare.[4]

Now that's a fair amount of background, but it should provide ample context for landing on the same page when thinking about and speaking about innovation in healthcare. Finally, tying that all together, we share a comprehensive definition of innovation in healthcare:

An innovation is any combination of activities or technologies that breaks existing performance trade-offs in attaining an outcome, in a manner that expands the realm of the possible.

Defined in healthcare as "more for less." More value, better outcomes, greater convenience, access, and simplicity for less cost, complexity, and time required by the patient and the provider, in a way that expands what is currently possible.[24]

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[4] Source: Public Health National Center for Innovations (PHNCI). Innovation Stories: Share, Inspire, Repeat. Published 2021. https://phnci.org/innovations/innovation-stories-share-inspirerepeat

4. Why is it so difficult?

There's consensus that it is difficult for managers and policymakers alike. In part, that's due to the broad, overarching challenges at play, which we have little control over—they lead to seemingly fixed, immovable constraints.

Size and complexity

Health systems are vast and complex.[4,26] The magnitude of the complexity has emerged over generations and influences innovation processes in a way that's different to other sectors.[4] Moreover, many role-players (each with an agenda, often competing), professional and organisational cultures, distinctive economics and massive politics add to the mix.[4,29] In addition, there are challenges of fragmentation and integration.[30] As a result, the problems faced by the public sector tend to be complex and wicked, more so than in private organisations, even in the same system.[26]

Competing demands

Next is the challenge of dealing with fiscal pressure *and* the demand to innovate. We've already pointed to the "perfect storm" of escalating demand, growing expectations of quality care, and needing to tighten control on expenditure—and that's not about to change anytime soon. Everyone is affected: government departments, health care providers, patients and payers[4]; it's also increasingly difficult, even for countries where access and affordability haven't been issues before.[11]

But it's not just the increase in demand that's piling on the strain. There's pressure to find fiscal space to grow and maintain the capacity needed to innovate and even use budget-cutting exercises to accelerate innovation[14,31]—all with the added pressure of public scrutiny of stewardship of funds.[14,32] Easy, right? Hard to use budget-cutting moves when you're at the receiving end of budget cuts yourself, as has been the case for government public health departments in many countries.[2] How do you find space to build innovation capabilities when meeting day-to-day needs is becoming increasingly difficult? Tough questions indeed, but at the same time, they're great starting points for framing up innovation challenge statements.

Unintended consequences

Lastly, and weirdly, innovation itself can be the problem. How? New technologies require an up-front investment. But they can also increase costs down the line by making it possible to "do more" in healthcare. For instance, innovation can radically improve individual health outcomes, but new drugs and technologies can also extend life expectancy, and better diagnostics can identify more people that need to be treated.[4] Therefore, there's also a risk that innovation in health systems can lead to progress in one area and worsen things in another.[4] Predicting the potential impact is complicated.

Barriers and enablers

Of course, there are other influences over which one has little control[33]—the prevailing economic climate and external threats like a global pandemic. This may seem bleak, but just as there are factors that work to deter innovation, there are others that *facilitate* innovation in healthcare delivery—barriers and enablers.

Many of these barriers and enablers of innovation are not unique to health systems. Truthfully, it seems that most are generic across domains. That said, context matters—factors don't exist in isolation but interact with each other and the local context where you introduce the innovation[1] and emerge with varied intensity and dimensions.[30] That local context includes geography, human capital, resources and infrastructure.[30] These interactions are unpredictable and complex, so successful innovation needs to grasp how these factors interact at whatever level[4]—from individual hospitals to government health departments or even national healthcare systems. And the individual factors emerge with varied intensity and dimensions.[30]

It is also difficult to say which enablers are more important or better than others. However, one crucial factor has been identified to be a crucial enabler and barrier to innovation— is organisational culture; the openness (or lack thereof) to trial new ideas and carry the associated risks is significant.[28,32,33]

Figure 3: System factors acting as barriers and enablers

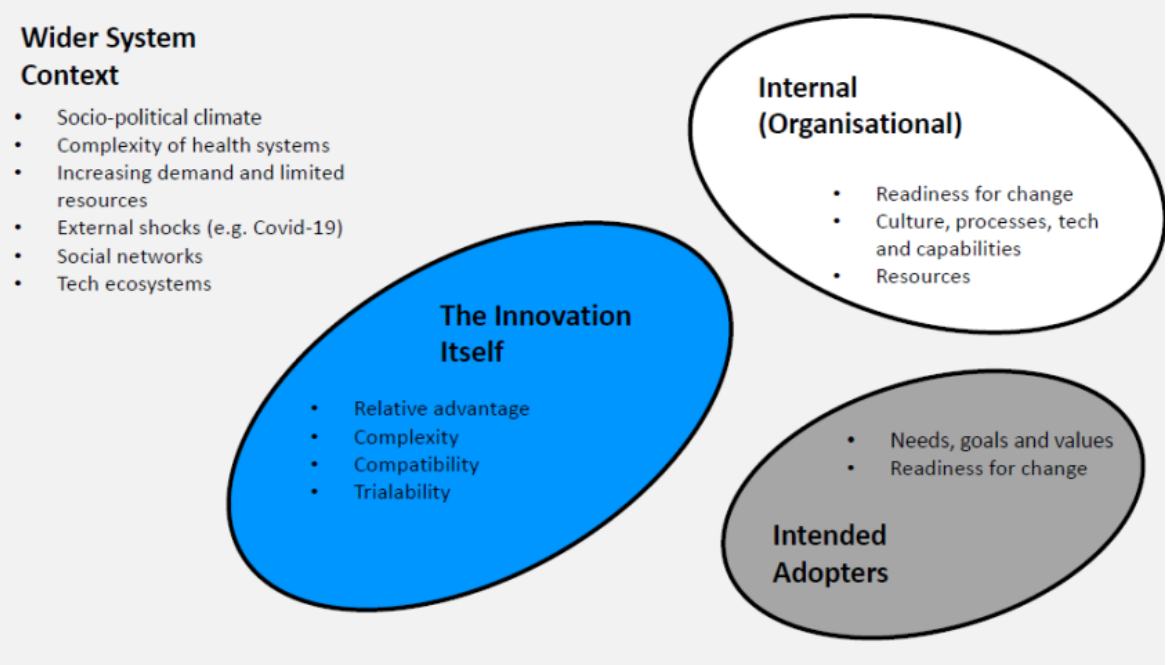


Figure 3 illustrates these barriers and enablers of innovation. A simple framework divides barriers and enablers between external factors (socio-political climate, health system complexity, etc) and those within an organisation (structures, processes, technologies and capabilities, etc).[14,33]

Though, as we've already seen, the broader system context plays a significant role, as do the characteristics of the innovation itself (relative advantage, complexity, compatibility and trialability) and the characteristics of the intended adopters (their needs, goals and values; their readiness for change).[1]

Next, we'll take a brief look at some of these external factors that stifle innovation. Then consider the external enablers of innovation. After that, we will deal with a critical group of internal factors which, significantly, aren't fixed and immovable but can be built and strengthened—innovation capabilities.

5. Digging deeper into barriers to innovation

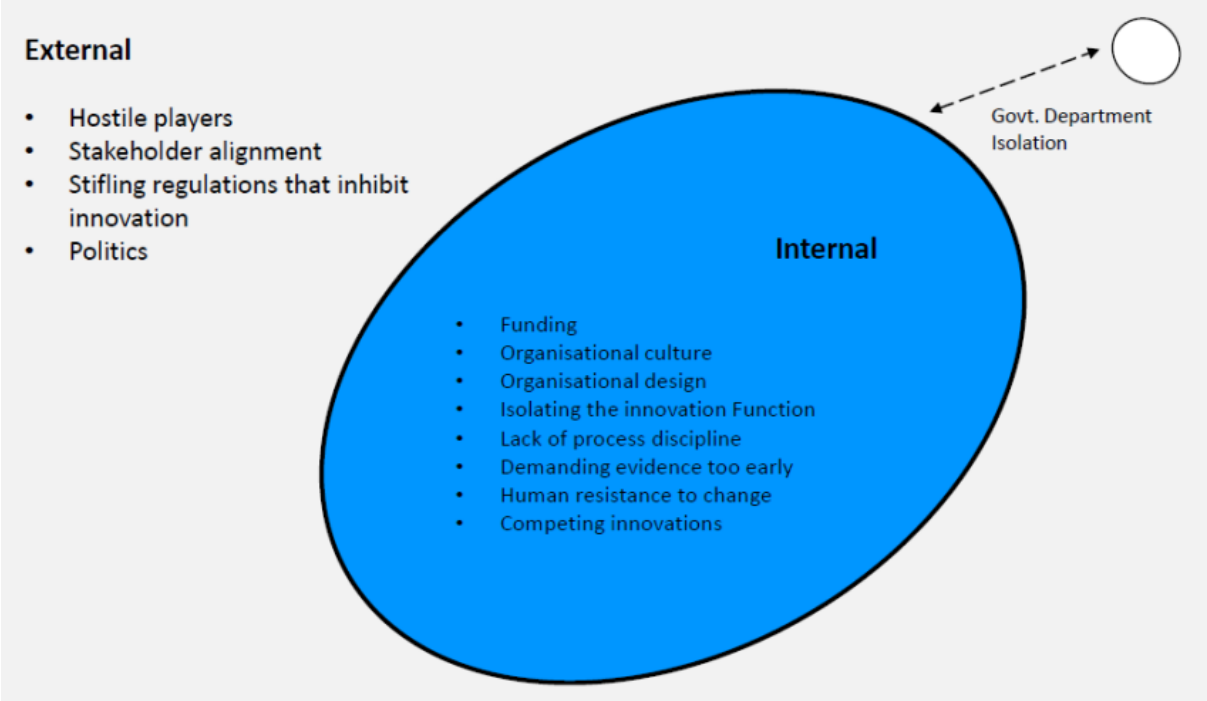
Despite the clear need to innovate, government and public sector organisations, like their peers, face both external and organisational obstacles to achieving their innovation goals, as shown in Figure 4.

These external barriers include:

1. **Hostile players**: "Status quo" players tend to see innovation as a direct threat to their power and can use their influence to resist change—for example, government health departments may face opposition to from external partners if a new technology or care pathway could displace them; they may even weigh in to try and influence policy.[29]
2. **Stakeholder alignment**: Creating change in the public sector almost always involves engaging and aligning multiple stakeholders with different missions and perspectives—this can slow down or even paralysing progress. There's also the risk that ideas with more significant innovative potential get put aside while pursuing ones that present less resistance and are most likely to secure consensus.[26]

3. **Regulations that inhibit innovation**: It can be a challenge for lawmakers and regulatory bodies to keep up with the rapid evolution of technology and new and evolving threats to public health,[24] so restrictive policies and regulations stay in place and don't produce supportive conditions for health innovation,[2,13] and ultimately, only legislators can remove these barriers.[29]
4. **Politics**: Any innovation believed to entail political risk or run against the dominant political forces within a local context is severe opposition.[33] Adversarial approaches to government decision making can put a health department at the crossroads of an issue but without complete control of it.[26] And, sometimes, resources are wasted on politically "fancy" projects driven by lobbies without accountability.[30]

Figure 4: External and internal barriers to innovation



Other barriers act internally within the organisation:

1. **Funding and resources**: Funding is a significant challenge[17,28–30]—sufficient human and financial resources are paramount for implementing and sustaining innovation, even the fear of shortage can block efforts.[33] It's not enough to invest only in R&D, but you need to spend on the entire innovation value chain.[30]
2. **Organisational culture**: Some consider culture the *main* barrier to spreading innovation.[28] Let's face it. The public health field is naturally risk-averse—there's a tight regulatory structure as failure has potential human costs[2]; and it's operating under continuous public scrutiny.[14,17]
3. This risk-averse culture often associates failure with underperformance[26]—**fear of failure and innovation are contradictory constructs.** Resistance to change can be an innovation killer; closed-minded attitudes towards externally developed ideas make it impossible to capitalise on the vast amount of knowledge outside the organisation's boundaries.[31]
4. **Organisational design**: Asking public sector workers to innovate may not go very far if the organisational environment does not support innovation.[14] For example, **hierarchies** can keep people with ideas and decision-makers apart[26]; the administrative nature of many jobs can make people feel separated from their work's impact.[14] But the massive source of friction is **the requirement to adhere to rules and regulations rigidly**, even when there's ingrained ambiguity—without flexibility, innovation is strongly discouraged and, in the worst cases, impossible.[31] Most public organisations aren't comfortable with the degree of organisational flexibility required.[14]

5. **Isolating the innovation function**: Building a central hub for innovation but isolating it from the rest of the organisation essentially risks cutting off the "engine to idea generation and mobilisation." This means that those tasked with the innovation mandate are cut off from the thousands of employees with direct contact with citizens and on-the-ground programmes.[23]
6. **Lack of process discipline**: While it's true that there is no 'one-size-fits-all' approach,[30] not employing specific, proven innovation processes and frameworks can be setting an initiative up for failure.[17,23]
7. **Demanding "hard evidence" too early**: There's a crucial role for evidence and demonstrating the value of innovation, but the extent of screening an idea should be proportional to the magnitude of change to prevent the risk of "paralysis through analysis".[23]
8. **Human resistance to implementing change**: Innovators regularly underestimate the opposition to change and are surprised when "obviously superior" solutions are not embraced by those who must implement them.[31]
9. **Competing innovations**: There's a risk that competing or complementary innovations in the same system can lead to stakeholder fatigue, disengagement and uncertainty.[1]

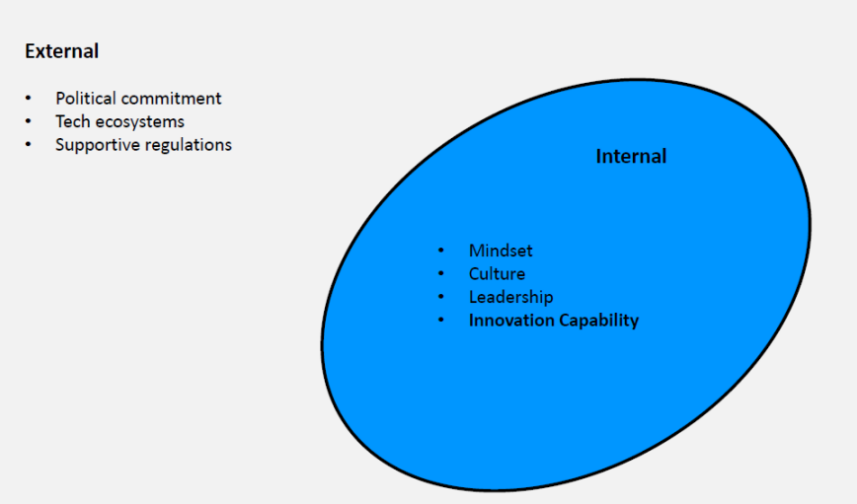
Finally, there's another barrier significant in its own right: **Government department isolation**. Many, perhaps most, problems governments face span department boundaries.[26] Moreover, departments have vast amounts of data buried in separate processes and databases and work in isolation, restricting cross-fertilisation as a driver of innovation.[2,30] Although a multi-sectoral approach to health and service delivery is typically pursued in policy documents, in reality, it's hard to make this happen.

6. External enablers for innovation

What makes the difference in creating and building an environment that promotes and supports innovation? Figure 5 shows that in the same way as barriers, some factors exist within the organisation and others outside. The *external factors* that stimulate innovation include:

1. **Political commitment**: Successful public sector innovation requires strong commitment at national and regional levels is a key determinant.[30]
2. **Regulations and legislation**: An essential pre-condition to innovation is favourable regulations and related legislation— this also extends to the transparency of decision making and no corruption.[30] And it seems that more innovation flows from less regulation. A key driver of healthcare innovation during the COVID-19 pandemic has been a hands-off approach at various levels of government due to the unprecedented nature of the pandemic and urgent need to provide care.[34] Innovation is enabled when regulators set metrics, measure outcomes, establish objectives and processes for stakeholders to follow, with the aim of implementing guidelines that act as catalysts for innovation.[24] Then there are intermediary enablers, which are the processes that connect innovation policy and implementation; like forming regulatory bodies that shape practice around specific innovations.[30,33]
3. **Technology ecosystems**: Tech ecosystems assist innovation through a combination of resources, participants, and relationships.[29,31]

Figure 5: Innovation enablers: external and internal



But why are some organisations able to innovate again and again while others hardly innovate at all? Data tells us that the biggest challenge when it comes to innovation is implementation and culture:[32]

> *"The reality is that ideas are worthless without effective execution and a culture that can manage that".*[32]

Let's put it this way—**the ability to execute and the associated culture are the enablers that drive successful innovation**. And these *internal factors* that enable you to execute successfully are what we call **innovation capability**.

7. Moving towards internal enablers: building innovation capability

A capability is the ability to achieve a goal. It consists of **numerous processes, knowledge, assets, and systems;** and typically exists in the form of many different sub-capabilities.[35] So, **innovation capability** means the potential to innovate—**build, sustain, and launch innovations repeatedly in an effortless manner.**[35]

An innovation lens can help identify the competencies and capabilities needed to search for, plan and implement innovation initiatives. Organisations that own these capabilities build the ability to successfully integrate other vital capabilities and resources to stimulate innovation.[36]

A way to think about innovation capability is the potential to innovate and transform knowledge and ideas into new models, products, processes and systems.[36] Again, taking things back to our working definition, that's through and any combination of activities technologies which break performance trade-offs in attaining an outcome—it's the capability to expand the realm of the possible.[24]

It's a higher-order capability—the ability to mould and manage multiple capabilities.[36] Some sub-capabilities are linked to an individual's capability to lead initiatives within and beyond their organisation[33]; others belong to the organisation.

So, innovation capability means "the potential to innovate"—and that potential is deeply dependent on a related set of foundational elements. We explore the foundational elements in a second brief in this series.

8. Conclusion

In this brief, we explored what innovation means, how it is likely to differ in a public sector context and the broad sets of barriers and enablers. We started moving towards discussing how innovation capability can be built, and what is required for this.

In the next brief, we consider the enhancing practices that boost innovation capability and how these can be built, both in the short- and long-terms. This is essential requirements for any organisation or system focused on renewal and that is trying to move towards delivering greater value to those it serves over the longer term.

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