Observatory of
Public Sector Innovation

Transferring and adapting: diffusion of innovation knowledge and lessons

ALPHA VERSION: FOR DISCUSSION AND COMMENT

The Observatory of Public Sector Innovation collects and analyses examples and shared experiences of public sector innovation to provide practical advice to countries on how to make innovation work.

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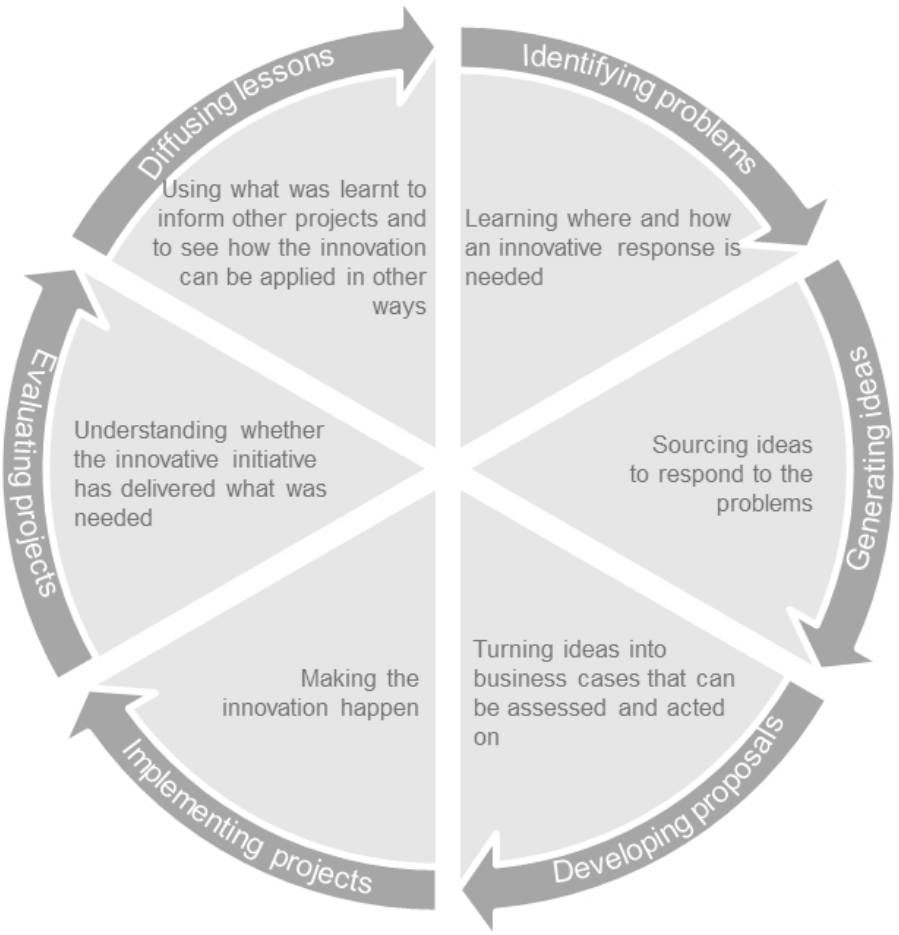
Summary

Public sector organisations are dealing with large and varied changes in their operating environment. Many traditional practices are no longer delivering the results that are expected or needed. There are pressures to perform, to meet changing expectations of government and to build trust that government can meet the needs of citizens. There is a need to lift productivity and effectiveness, and to work with citizens in new and more inclusive ways.

These pressures mean that public sector organisations will need to look to innovative approaches in order to meet the demands placed upon them. Organisations need to integrate innovation as part of their core activities. This means that they need to systematically put in place processes for the identification of problems, the generation of ideas, the formalisation of business cases, implementation of promising projects, evaluation and the diffusion of results. This process has been identified in the Innovation Lifecycle.

Figure 1. Innovation lifecycle



The Importance of Diffusion

The last phase of the innovation lifecycle is diffusing lessons. However, anyone who has worked on an innovation project knows that this phase is not the end. Depending on the outcomes of the project, many subsequent trajectories are possible. In some cases, the end is also a beginning.

Diffusion of lessons need not only happen at the end of a project as much of the learning that occurs in other stages is perhaps just as useful as the final results. Diffusion should be considered as a practice designed into all phases of the innovation lifecycle in order to capture all kinds of learning—including the deeper tacit knowledge that informs future projects within and across contexts.

The diffusion of lessons phase must be especially considerate of adjacent phases: the evaluation phase helps establish the knowledge and practices that are relevant to share; and, the identifying problems phase establishes the demand of knowledge and practices for innovation projects. The first lifecycle report, identifying problems, focussed heavily on how individuals, teams, and organisations learn and since those

mechanisms and structures are relevant to understand the "demand-side" of innovation knowledge and practices, this report draws heavily from it.

Learning is a fundamental part of the overall innovation process. Innovation without learning is luck, and governments cannot rely on luck or chance to answer citizen expectations. Individuals, teams, and organisations stand to gain a lot learning from others what is working, what is not working, what might be possible, or what might be potential problems. Of course, direct adoption, particularly of solutions, from other contexts and around complex problems, is likely to lead to surprises and unintended consequences. The key is transfer, not replication, for most types of innovation.

Diffusion versus dissemination

Before more distinction is drawn in this report around the different types of diffusion, it is important to clarify the difference between more passive forms of diffusion (referred to hereinafter as simply diffusion) and more active diffusion (referred hereinafter as dissemination). Dissemination refers to the declaration or institution of more stable patterns of knowledge or practice, supported by empirical evidence.

Diffusion at different human scales

Both formal and informal diffusion happens at different human scales. While the relevance of this report and the innovation lifecycle overall is focused at the individual, team, and organisational scale, the influence of and interaction with system elements cannot be ignored. Since diffusion and learning involve humans and because humans relate differently at different scales, different approaches to diffusion must be considered according to the factors influencing each scale:

- Individual (i.e. cognitive, interpersonal, attitudinal, behavioural, emotional)
- Team (i.e. interpersonal, in-group identity)
- Organisational – (i.e. dominant narratives, authority, values)
- System – (i.e. cultural norms, language)

In the public policy context, inter-organisational and international dissemination and diffusion are often topics of greatest focus. While this scale is of great relevance for public sector innovation and does impact innovation at the organisational level, the factors affecting policy transfer are distinct and may differ from the diffusion of innovations that are not policy-focused.

A Changing Context

Public sector has always had to diffuse knowledge. In fact, due to the increased accountability and transparency required of the public sector organisations that comes with being entrusted with public funds and public value, some diffusion is required by law. As a result, many public sector organisations have extensive information systems built for this purpose. Consequently, bureaucracies built to support such accountability and transparency also have support systems to diffuse standard practices, best practices and good practices. These result in reliable and repeatable processes which

keep a large organisation functioning while ensuring public trust. These diffusion processes are of critical importance. However, when standard, best, and even good practices no longer match the changing functions and needs placed on government due to an increased rate of change outside of government, the way governments approach diffusion needs to change.

There are several contextual factors which suggest that particular attention needs to be given to diffusion for innovation:

- Diffusing new things is different and more difficult than diffusing things that are already somewhat understood. Innovation is an uncertain and exploratory process, and involves different considerations than diffusion about existing things, where the process is better understood.
- Public sector organisations are operating in a context of constant new information which makes the scale and scope of diffusion and learning very different from the world in which public services evolved.
- As governments face more complex problems, different types of knowledge and practices are important to share. The tacit knowledge around which new practices worked and why becomes increasingly valuable.
- In an increasingly information rich and interconnected world, new information may be easily drowned out due to the volume of competing information as well as the rise of new information brokers.

Facets of Innovation

Public sector innovation will occur in contexts with different levels of uncertainty, and those different contexts will require different strategies, working methods, and types of dissemination and diffusion. Innovation can include:

- a purpose (e.g. discovery, making something work better, achieving a goal or responding and adapting to external pressures)
- uncertainty (i.e. you don't know what might work or there is a high potential for changes that will make existing strategies obsolete or untenable)
- a variety of possible different strategies and forms of innovation, involving different capabilities, competencies, actors and resources

Based on the dimensions of direction and certainty, four facets emerge:

- Mission oriented innovation
- Enhancement-oriented innovation
- Adaptive innovation
- Anticipatory innovation

It is risky to rely on one single type of innovation and associated working method or diffusion practice, whether innovative or not. Thus, a portfolio approach should be taken to offset the risk of any one strategy not working and governments should build

diverse capabilities, working methods, and diffusion and dissemination practices accordingly.

Phases of spread

For purposes of discussion and exploration, this report defines three phases of spread to describe the prominence and exposure of an innovation within a given context and at the scale of the organisation, the main scale of analysis of the innovation lifecycle.

Phase of spread: What is the level of exposure of the innovation in a new context?

- **Emergence**
- **Early use**
- **Assimilation**

Considerations for Effective Diffusion for Innovation

Several factors should be considered in revealing what makes diffusion effective:

- **Enabling Conditions:** What are the enabling conditions that encourage organisations and individuals to reflect and allow people to diffuse new knowledge and practices?
- **Type of innovation:** Did the innovation involve a product, service, policy, process or other type? The diffusion the innovation will be heavily influenced by its type.
- **Channels:** What are the channels for diffusion? How is new intelligence about the world and the changing operating context accessed?
- **Methods and Approaches:** What are the methods and tools that can be used to deliver information within and across contexts in ways that correspond to how people learn?

Type of innovation

There is much discussion of diffusion of innovation as it pertains to the individual adoption of a product, usually a technologically-enabled one, as a private consumer. In the public sector organisational context, different types of innovations must be addressed differently with respect to diffusion. These draw heavily from the 10 Types of Innovation (Keeley, 2013[1]) and include:

- Network (proximity to others who create value)
- Structure (physical, technological, etc)
- Process
- Communication channel
- Stakeholder relationship
- Role in a system

- Revenue model
- Service/Product
- Service/Product cycle
- Purpose or Value
- Explicit shared understanding

A number of factors about the innovation itself affect how it is diffused (or not). These include:

- Cultural compatibility
- Perception of simplicity
- Tangibility/trialability
- Perception of benefit by users
- Perception of uncertainty
- Early positive feedback
- Adaptability / customisability
- Interoperability with context ("innovation-context fit")
- Fulfils a broadly experienced need to fulfil a job (functional, social, personal)

Enabling Conditions

Organisations can maximise their diffusion of innovation by giving consideration to a number of enabling factors, including:

- Absorptive capacity - the capacity to absorb and integrate learning from outside of the organisation
- Knowledge networks – active and distinct formal and informal networks for sharing information, data, and tacit knowledge
- Tension for change – a compelling need for change (i.e. crisis)
- Relationships – formal and informal knowledge, practice, and resource sharing
- Organisational memory – an awareness of the reasons behind the current status or problems
- Openness - being open to different perspectives, including those from non-traditional sources or established formal and informal organisational hierarchies
- Breadth of skills – multi-disciplinary diversity
- Depth of expertise – familiarity with content or process, built by exposure
- Permission to question – psychological safety for those who dare question the status quo

- Permission to try – a tolerance for exceptions to established rules or procedures
- Safe spaces to fail – tolerance for unexpected results or untested solutions
- Purpose – clear understanding of what the organisation is trying to achieve
- Capability – the ability to act and build on the new things

With the right environment for diffusion, organisations will be better placed to understand, recognise, make sense of, and use new knowledge and practices when they emerge.

Channels for Diffusion

Organisations will also need to ensure that they are sharing information through the channels which relevant information is sought, both formally and informally. Organisations should consider:

- What initiates the search for knowledge and information?
- Where do individuals and organisations seek knowledge and information?
- How do channels differ based on whether explicit or tacit knowledge is shared?
- Which sources are considered the most credible or trustworthy?
- Are there any big gaps in diffusion channels?
- How do individuals and organisations react to channels that provide them with information that is surprising or challenges the status quo?

The right mix of channels can ensure that organisations are receiving the intelligence they need.

Approaches and Methods

A number of methods can also assist with the process of diffusion, and how to begin to respond. A number of methods are proposed, based on their ability to meet or contribute to some or all of the following features:

- Clarifying intent and purpose
- Infrastructure and processes
- Exploiting structures created by others
- Urgency and anchoring
- Behaviour modelling
- Passive learning
- Unlearning
- Staff mobility and turnover
- In-project reflection

- Using the language of innovation
- Keeping space for the questions
- Creating environments of trust
- Innovation labs

Table 1. Summary of Key Considerations for Effective Diffusion of Innovation

Type of Innovation	Enabling Conditions	Channels for Diffusion	Approaches and Methods
Network (proximity to others who create value) Structure (physical, technological, etc) Process Communication channel Stakeholder relationship Role in a system Revenue model Service/Product Service/Product cycle Purpose or Value Explicit shared understanding	Purpose Capability Absorptive capacity Knowledge networks Tension for change Relationships Organisational memory Openness Breadth of skills Depth of expertise Tolerance for risk A systems perspective	Networks MOOCs Open innovation platforms Structured organisational learning programs Data sharing platforms Learning expeditions and study visits Formal knowledge exchange networks Peer-to-peer learning programs Project-based learning Informal chatter	Clarifying intent and purpose Infrastructure and processes Exploiting structures created by others Urgency and anchoring Behaviour modelling Passive learning Unlearning Staff mobility and turnover Using the language of innovation Keeping space for the questions Creating environments of trust Innovation labs

Chapter 1. Introduction

Governments operate in a world of change (and sometimes volatility) where there are increasing or changing expectations from citizens about what public services are and can be. As new possibilities are demonstrated around the world – by other governments, by industry or not-for-profits, in consumer products and in services – there is a legitimate expectation by citizens that their own governments can *and will* do better. If, or when, such expectations are unmet, the level of trust in public institutions and faith in their ability to deliver will suffer.

Governments are also operating in a world of constraints (financial and political). Rarely is it the case that governments can simply mandate for something to be or spend their way out of a problem. Increasing effectiveness and productivity requires changing how governments operate. Further, in this resource constrained environment, there is a strong incentive to adopt the solutions of others to avoid "reinventing the wheel."

Building trust in government, achieving greater productivity, and working in new ways means changing habits and culture. That means doing new things, stopping old ones, thinking about things in new ways, breaking rituals, and organising and working with others in new ways.

OECD and European Commission Studies on the Innovation Lifecycle

In recent years, governments have started responding to this need supporting, funding, facilitating or encouraging more innovative responses in their public services. As a result, a body of knowledge around public sector innovation has grown, with many governments, not-for-profit organisations, and private companies contributing. Yet this large body of knowledge can actually make it more difficult for time-pressed public servants and resource-constrained organisations to explore new possibilities while simultaneously delivering on their existing responsibilities.

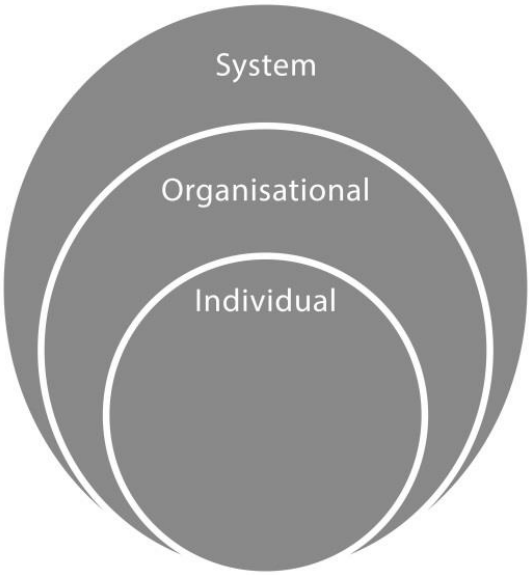
This series of studies, funded under the European Commission's Horizon 2020 program, aims to take stock and review what is known, identify possible gaps in that knowledge, and to provide guidance about:

- The issues faced by innovators and organisations when trying to introduce novel initiatives
- What tools and methods are most appropriate at different stages of the innovation process and under what conditions
- How a stronger innovation capability may fit with existing processes and initiatives.

The studies will contribute to a better understanding of how public sector organisations can effectively use the innovation process to get better outcomes, including by:

- Identifying problems and learning where and how an innovative response is needed
- Generating ideas to respond to those problems
- Developing proposals that turn those ideas into business cases that can be assessed and acted upon
- Implementing the innovation projects that proceed
- Evaluating (and integrating) the outcomes of those innovation projects and whether the innovative initiative has delivered what was needed
- Diffusing the lessons from those evaluations, and using those lessons to inform other projects and how other problems might be responded to.

Figure 1.1. Level of analysis



The studies focus on the organisational level of analysis, since this is the level at which projects, programs, and processes are established and carried out. This is where an innovation lifecycle is most relevant. Of course, nothing happens without individual actions and all processes are influenced by the system in which they operate, so other levels of analysis cannot be ignored when approaching an innovation lifecycle.

What is the role of diffusion?

Diffusion must be a core feature of effective organisations. Innovation without diffusion serves the immediate problem owners without fully leveraging the investment spent to learn lessons. Diffusion prevents public sector organisations from expending resources to uncover information that already exists as well as painful and insightful lessons learnt by others, both inside and outside of individual organisations. Diffusion can build consensus and a body of evidence around new methods or practices. In organisations, these lessons and collective intuitions are often considered "institutional knowledge" and are valuable not only in day-to-day operations but also

for understanding what is possible, relevant, and valuable with respect to the existing operating model, stakeholder expectations. This deep institutional wisdom also allows individuals and teams to sense new signals and do better sense-making and contextualisation with them. Diffusion of innovations can create a signal through the noise in an information rich environment and can be served by but also contribute to an organisational purpose or mission. Finally, diffusion can be a source of rich in-project feedback, which can serve to detect early weaknesses or help understand the organisational infrastructure and systems limiting its success.

What enables effective diffusion for innovation, which mechanisms and channels exist and which approaches and methods can help? This study looks at these elements and considers how organisations, those that work within them, and those that work with them can enable the diffusion of innovation.

Chapter 2. What is diffusion?

Diffusion is difficult to quantify because humans and human systems are complex. It may be impossible to fully and accurately identify and measure what causes diffusion of innovation. This section considers the purpose, origin, paradigms, models, and aspects of diffusion so that it may be defined appropriately loosely.

The organisational purpose of diffusion

Innovation is an important process for any organisation. New ways of doing things, new ways of thinking, new ways of organising – innovation is a big part of how organisations become able to do new things, and become able to respond to problems where existing strategies may not be working as well as needed. Any organisation that has to operate in a changing world has to innovate if it is to stay relevant.

Yet innovation is also a process that, by definition, means changing how things are, and thereby going against the status quo. Therefore any innovation introduced will come up against barriers or resistance. The barriers might involve competition from business-as-usual pressures for resources or organisational investment. They might involve scepticism about whether an innovative response is required or what form it should take. Or there may be resistance from those who are invested in the way things currently operate. Or it may just be difficult to introduce something that has not been done before, and so is uncertain with no surety about the outcome and the risk of unintended consequences.

There are also organisational challenges. An organisation can only pursue so many ideas at any one time. New skills or capabilities may be required. Promising innovations need to be integrated with the organisation's existing practices. Previous activities may need to be stopped.

Thus innovation should not be thought of as an easy process, but one that needs to be managed in order to deliver beneficial results.

Such attributes mean that innovation should be a strategic activity – i.e. there needs to deliberate consideration of where novel responses are really required and why. An organisations needs to be able to answer the question, "Where is innovation most needed?" or risk tying up resources and effort in trying something new that unnecessarily distracts from organisational priorities and delivering on what is expected.

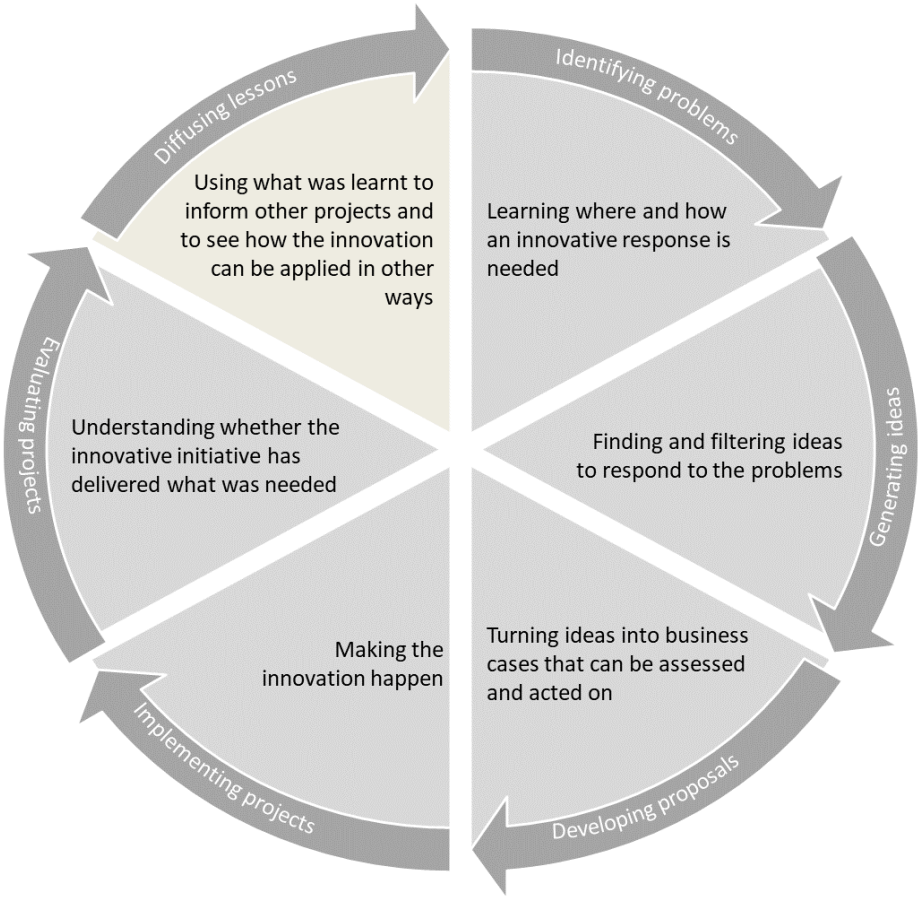
That is not to say that there are not times that innovation is opportunistic. There may be a chance to change how things are done and to introduce a novel approach which will lead to better outcomes without responding to a specific problem. E.g. there may be a chance to experiment with a new technology platform before the need is clear. Such innovation can be valuable in understanding what is now possible, that previously was not.

However, in the public sector, innovation will generally be problem-oriented. For instance, in a public sector environment there are often accountability requirements

that mean the possible costs of experimenting on something where there is no apparent need will likely outweigh the potential benefits. Competition for scarce resources (financial as well as political) also tends to prioritise attention on problems rather than opportunities. In addition, a problem can help generate a pressure *for* innovation to happen from stakeholders and partners, to potentially match any pressure *against* innovation happening from others either inside or outside of the organisation. The barriers to innovation are likely to be reduced when the reason for innovation is clear.

While the diffusion of lessons is best included as a method imbedded in the entire innovation process, it is most commonly addressed after an innovation has been implemented and normalised, or at least when some empirical results can be shared. It is important to point out that in the public policy cycle, a focus on evidence quality and repeatability of results will necessarily limit the scope of diffusion to what is stable, well defined, easy to communicate and well understood. In other words, this type of diffusion is more focused on results and measurable impact. While it is important for this information to guide due diligence analysis and decision-making amongst policy-makers, novel and emergent practices and knowledge will not be codified to the extent that it fits the traditional criteria for reliability. This paper describes different types of diffusion, via different channels, and for different purposes, some of which may not directly apply to the policy-making cycle.

Figure 2.1. Innovation Lifecycle: Diffusing Lessons



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Traditional diffusion models and their limitations

The dominant paradigm around diffusion of innovation is largely defined by Everett Rogers' classic work, *Diffusion of Innovations*, in which the author describes categories of adopters: early adopters, early majority, late majority, and laggards (Rogers, 1962[2]). In the author's model, four main elements influence the spread of a new idea or product: the innovation itself, communication channels, time, and a social system. This process relies heavily on human capital. The innovation must be widely adopted in order to self-sustain. Within the rate of adoption, there is a point at which an innovation reaches critical mass.

Figure 2.2. Rogers' Diffusion of Innovation model

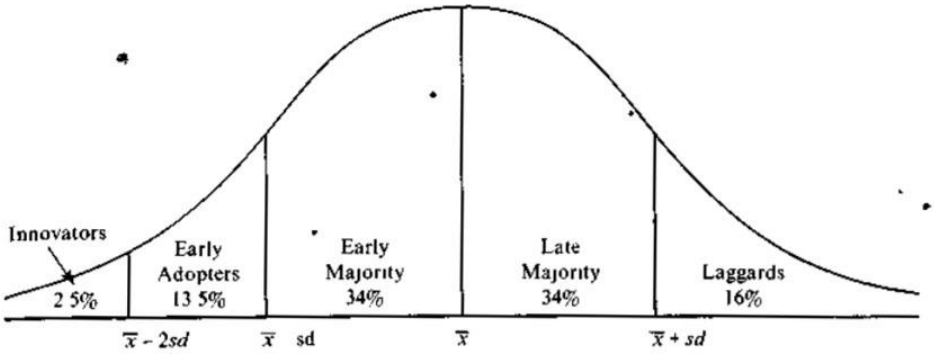


Figure 7–2. Adopter categorization on the basis of innovativeness.

The innovativeness dimension, as measured by the time at which an individual adopts an innovation or innovations, is continuous. This variable, however, may be partitioned into five adopter categories by laying off standard deviations from the average time of adoption.

Source: (Rogers, 1962[2])

Box 2.1. Rogers 5 stages

Rogers suggests five stages in the decision-making process as an individual considers adopting an innovation. (Rogers and York, 1995[3])

- Knowledge
- Persuasion
- Decision (accept/reject)
- Implementation
- Confirmation

The editions of *Diffusion of Innovations* are the most heavily cited among bodies of knowledge related to public sector innovation (De Vries, Tummers and Bekkers, 2018[4]) and remains the dominant paradigm. Since its introduction, the model has evolved and been applied to fields beyond the one in which it was developed, rural sociology and the adoption of agricultural products in the middle of the 20th century in the United States (ROGERS, 2004[5]). In addition to medicine, it is often referenced with respect to the adoption of commercial digital technology products and at the scale of the individual.

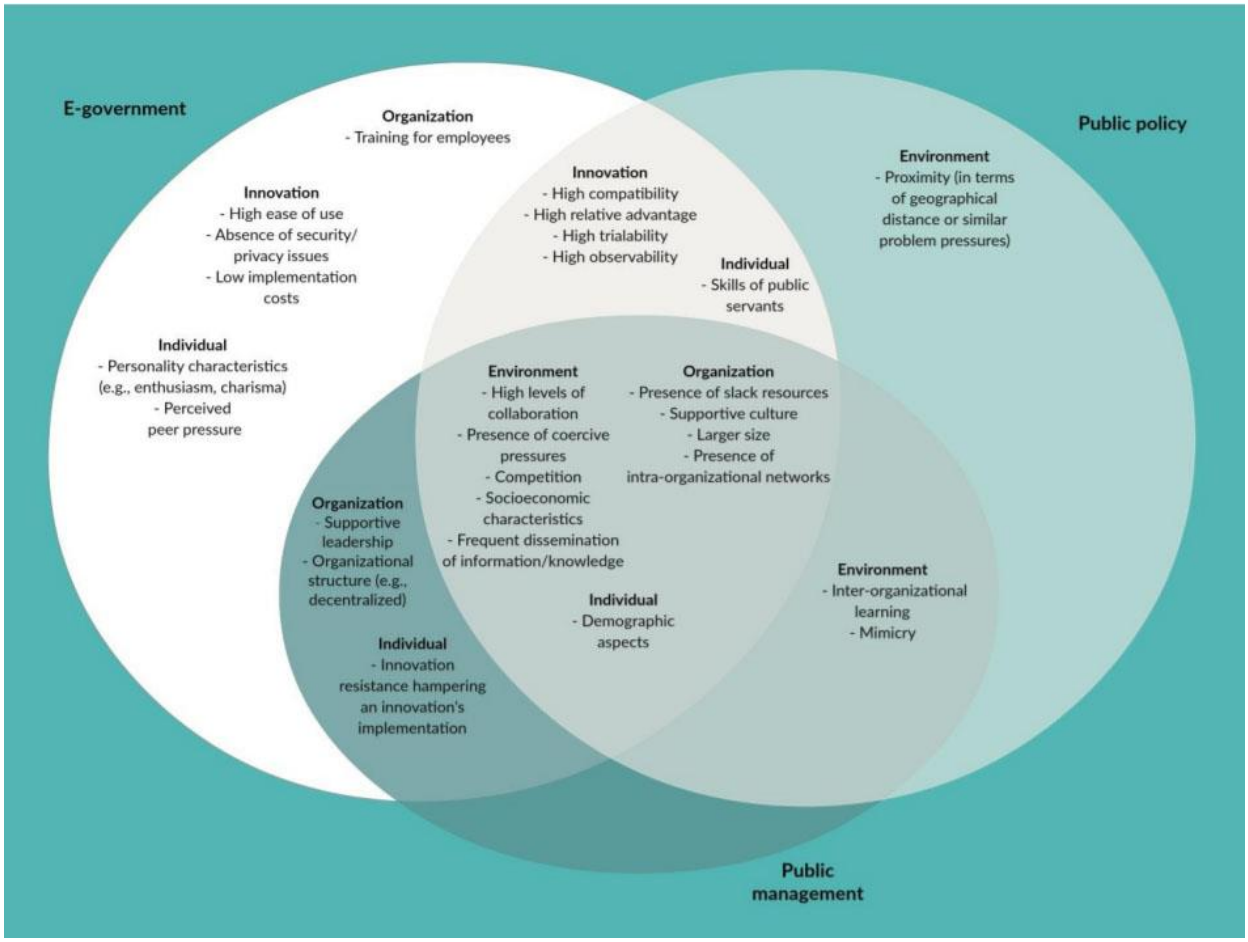
However, the model has its limitations (Greenhalgh et al., 2004[6]) (ROGERS, 2004[5]) Criticisms include:

- There is a focus on individual innovation and/or the individual adopter
- There is a pro-innovation bias, an assumption that an innovation is necessarily better and produces a net positive result
- Adoption focusses on personality traits (such as openness and an enterprising mindset)
- Research findings assume transferability to new contexts and settings without variance
- The model, developed in a private sector product innovation context, does not necessarily represent policy or process innovations
- A presumed driver is competition among private firms for market share

Innovation diffusion in the private sector, particularly in marketing, is modelled by relatively sophisticated ways, including agent-based modelling and social network analysis. Relatively little modelling has been conducted for public sector diffusion and the models that do exist tend to exist in separate paradigms: public management, public policy, and e-government (De Vries, Tummers and Bekkers, 2018[4]). As this report covers later, these paradigms also differ greatly in their level of analysis and antecedents to diffusion.

Figure 2.3. Diffusion paradigms and their overlap

Organisational, innovation, individual, and environmental aspects in paradigms of diffusion literature



Source: (De Vries, Tummers and Bekkers, 2018[4])

One aspect of Rogers' diffusion model that was not carried through into sub-disciplines is the distinction between diffusion and adoption (De Vries, Tummers and Bekkers, 2018[4]). The words diffusion, dissemination, spreading, adoption, adaptation, scaling, and others are sometimes used interchangeably. In fact, some choose to ignore the distinction altogether, opting to refer to the collection of diffusion and adoption theories and models with terms adoption-diffusion (Straub, 2009[7]).

Pattern stability

Organisations need to ensure that their approach to diffusion is matched with the stability or repeatability of the knowledge or practice of interest. Highly unstable patterns represent novelty, and sometimes chaos, while more stable patterns are obvious and expected to everyone in the organisation. Instability, a lack of constraints and stable relationship between cause and effect, can be sources of innovation. However, if an organisation does not plan to be surprised with this instability and does not create an avenue for it to be explored, it may be treated as a severe threat and

swiftly contained and rejected. This may be especially so if the innovation affects core operations, shared beliefs, interpersonal power dynamics, or assumptions of public value of a government institution. In most cases, governments experience novelty as a crisis and move quickly to contain it. If an organisation is to take advantage of learning from novelty, other strategies are needed to deal with instability and new types of knowledge and practice.

However, many organisations tend to apply by default approaches best matched with more stable patterns or obvious knowledge or practices. Standard practices, best/better practices, and good practices are widely applicable and effective for the transfer of practical guidance and actions around well-understood situations and problems, particularly when their associated bodies of knowledge contain much empirical evidence.

Government organisations, as well as organisations and bureaucracies in general, often lack the incentives, capacity and methods to address more unstable patterns in knowledge and practice. Novelty and emergence come with associated risks and rarely fit well with established methods for evaluating return-on-investment and value for money.

In novel and emergent domains, complexity is high. As natural pattern-finders, humans will tend to rely on cognitive shortcuts to make sense of new situations and place familiar structures and understanding around unusual phenomena. There is a natural desire to come to consensus quickly, make decisions, and move on. Messes and redundancy are often seen as wasteful, so they are often eliminated. Working in this way is a great way to optimise an organisation but can lead to the organisation missing important weak signals of changes underway.

Diffusion or dissemination of an innovation will be influenced by the stability of the body of knowledge or practice around it. To distinguish between innovation diffusion mechanisms, and reduce ambiguity around terms such as “best practice,” this report distinguishes several domains of pattern stability. Pattern stability refers to the level of consensus/dominance of knowledge or practice, the amount of repeated and repeatable evidence, and the development of explanatory models to describe and share knowledge and practices with others. As with many processes and interventions involving humans, there is a trade-off between consensus and coherence (Snowden, 2012[8]). Coherence refers to the level of nuance and ambiguity of an innovation while consensus refers to collective agreement of what it is, how it works, and how it should best be applied.

Of course, the more unstable a pattern, the less likely that people have language or meaning assigned to it, let alone the organisational capacity to address it. For the purpose of discussion, the stability of patterns of knowledge and practice can be described as follows.

Box 2.2. Pattern stability

- Novel – highly volatile and unknown to everybody

- Emergent – nascent and enabled by a combination of forces
- Better/Best – describable by experts and supported by evidence
- Standard – obvious and well-known to most people

By recognising the stability of patterns in knowledge and practice of interest to an organisation, an appropriate diffusion approach and channel can be applied. As discussed in Chapter 4, a diversity of approaches to diffusion are needed based on the stability of patterns, which is related to the type of innovation being undertaken.

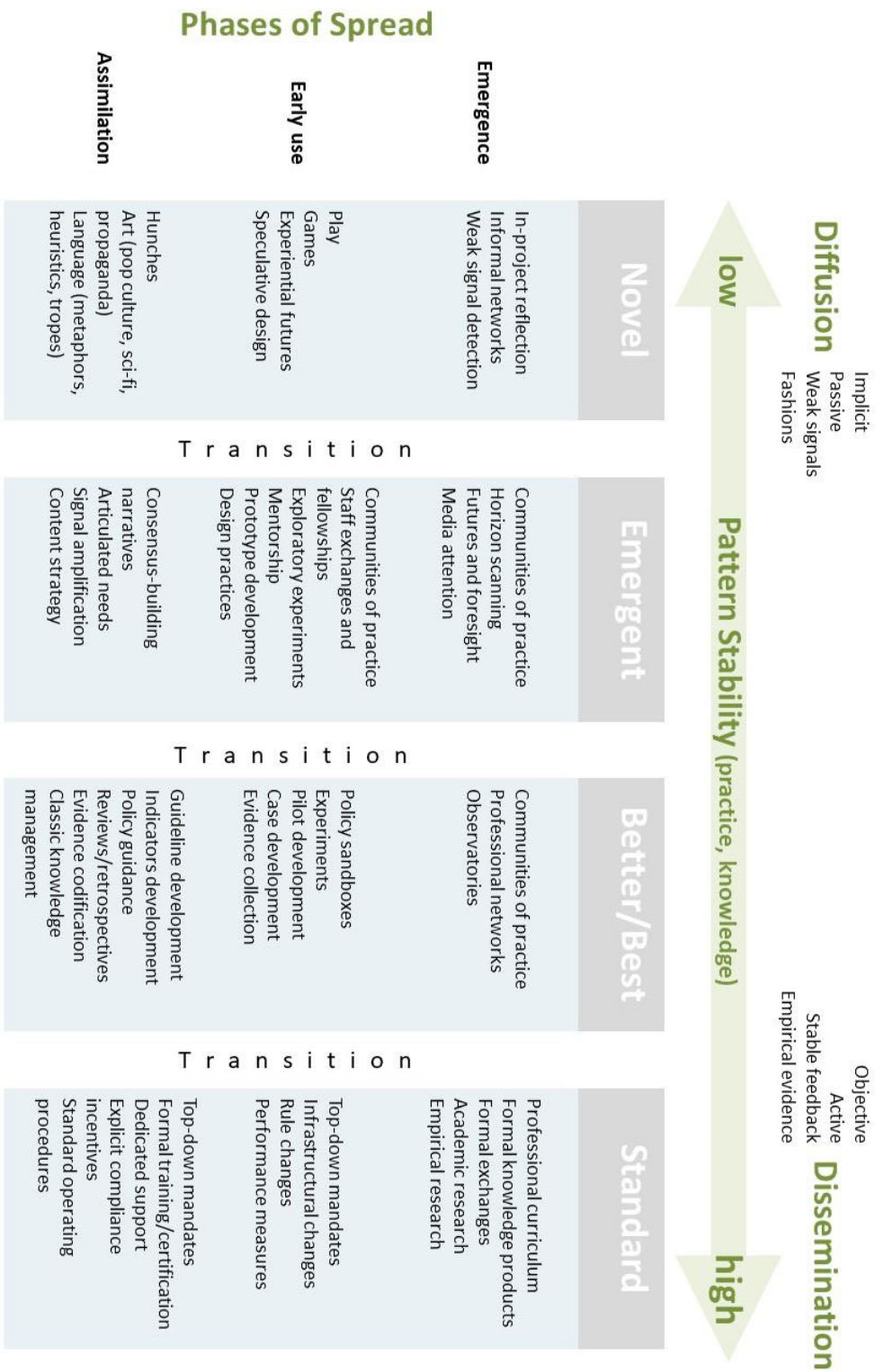
Phases of spread

Diffusion of innovations is a social process that is affected by numerous factors and reinforced or dampened by personal and social interactions with it. Generally, the spread for either passive diffusion or active dissemination can be thought of in three phases, although there is no distinct boundary between them and they are not necessarily linear. (Greenhalgh et al., 2004[6]) and (Andriani and Carignani, 2014[9]) provide frameworks for spreading from social science and natural science, which are more relevant for the public sector than from frameworks from those describing market saturation for products.

- Emergence: the receivers become aware of the innovation, recognise it as novel, are able to make sense of what it is and how it can affect the receivers' context, and consider how the innovation would affect them personally. This can be an implicit or explicit recognition that the innovation is "a thing" even if it does not have a language around it.
- Early use: individual and collective sense-making of an innovation, including trials and experiments with its use in a new context. The receivers have access to information about how to access and use the innovation, have initial functional and social feedback from early trial use, and understand how the innovation could affect the systems it touches
- Assimilation: individual and collective inclusion of the innovation by habit, ritual, and/or common understanding. The receivers have adequate feedback about the consequences of accepting the innovation and have sufficient opportunity, autonomy, and support to adapt and refine the innovation.

It needs to be noted that the emergence, early use, and assimilation processes and mechanisms will differ greatly for different facets of innovation as well as different patterns of stability of the associated knowledge or practices.

Figure 2.4. Diffusion and Dissemination



Chapter 3. A Changing Context – A New Urgency for Diffusion (Chapter revised from (OECD, 2016[10]))

Public sector organisations have always had to deal with change, and there is a long history of innovation in the public sector.

What is different now?

Much has been said over recent decades about how the public sector now operates in a world of increasing change and new and powerful technologies, dealing with new or more fully appreciated complex/wicked problems, with resource and capacity constraints, and greater expectations by citizens informed by experience with a private sector providing more targeted and contemporary services.

Why is this really different though, and why does it really require a changed response? Surely the work of the public sector has never been completely straightforward, that there have always been unmatched stakeholder and citizen demands, constraints and new challenges? Yet has not the work continued on, with real progress made?

This study suggests that there are three interconnected and reinforcing factors that explain why now is different. These factors are:

A changed understanding of the operating environment, from one where information was relatively scarce to one of astonishing abundance

A changed understanding, learnt from this new abundant information, of the problems and issues where an innovative response is required

A changed understanding, learnt from innovative responses to those problems, of what can be done, which in turn provides increased information about the world and what works.

This ongoing and reinforcing cycle of change means that the need for public sector agencies to get better at identifying problems and learning is increasing.

The following explores and explains each of these factors in turn.

A Changed Understanding of the Operating Environment

Once upon a time, public sector organisations faced an environment where:

- A lot of their work was highly standardised and relatively routine
- There were new challenges and problems, but there were relatively clear lines of accountability and responsibility
- Issues tended to be relatively slow moving, with some time taken before most political issues registered and became dominant issues needing a response
- There was recognition that agencies housed considerable expertise and could be expected to know what could or should be done

- They could plan with a fair degree of confidence and under relatively stable financial frameworks.
- In more recent times, there's been a lot of change happening. While there can be debate over how much change there has been, how fast it is occurring, and whether the rate of change is accelerating, one thing would seem clear: it is pervasive and ubiquitous.

One of the main forces underpinning this change is a move from relative little/scarcity to relative abundance of information in its different manifestations. For instance, significant change can be seen in:

- **Data availability** – there is a growth in government data sets, and a massive growth in externally collected/generated data sets. The Internet of Things and a growing proliferation of sensors likely means that there will be an ever greater abundance of data for all sorts of indicators, whether health, environmental, economic, or social. Where once governments may have had to rely on proxies or estimates, in the near future it is possible that government agencies will be able to draw on unprecedented amounts of real-time data.
- **Relevant and accessible external knowledge** – once upon a time accessing knowledge outside of an organisation was slow and potentially difficult. It could be hard to find out who knew what, and the means to share information were much slower and more laborious to coordinate. In today's connected world, accessing, aggregating and analysing relevant information from outside of your organisation is vastly easier and less costly.
- **Customer / citizen insights** – data and information sometimes tell us only so much. Sometimes there's a need for 'anecdata' or insights drawn from the lived experiences of citizens and those using government services. Social media and other real-time feedback mechanisms combined with more sophisticated tools and ethnographic approaches provide a rich source of such insights. At the same time, design thinking is becoming an increasingly important tool for governments. Gaining not just a greater understanding of what people are doing, but also insight into why, is easier than ever before.
- **Actors with possible influence or impact** – in a connected world, it is easier for individuals and small organisations to have an impact, and on that is possibly global in nature. Where once government agencies might have needed to only think about and engage with a small number of powerful institutional actors, now start-ups and citizen ventures can pop-up very quickly and with significant affect.
- **External events or developments that matter** – in an interconnected world, events in one field can more easily have cascading ripples across the board. Where once public sector agencies might have limited their monitoring or planning to a small number of situations, now developments from unrelated arenas can often have big impacts on the work of an agency.
- **Possible futures** – in a world with a small(er) amount of data and information, where there were fewer actors or events that might have a direct impact on

the work of an organisation, planning needed to deal with a much narrower range of possible futures or scenarios. In an interconnected world, with rapid changes in information and technology, there is a much wider range of possible futures, and that makes planning and trying to be prepared a lot more complex.

- At the same time, some of the same conditions that have resulted in this shift from scarcity to abundance have also meant that organisations are also in a better position to consider and experiment with a lot more ideas. Design thinking, ICT tools, ready availability of data, computational power and simulation – these and other factors mean that the cost of having and testing an idea (to some extent) is far cheaper than it once might have been. It is now far easier to quickly develop, validate and prototype an idea with relevant people – in a way that once would have either been impossible or have taken far more time and resources.

Figure 3.1. Move from Scarcity to Abundance of Information

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A Changed Understanding of Where Innovation is Needed

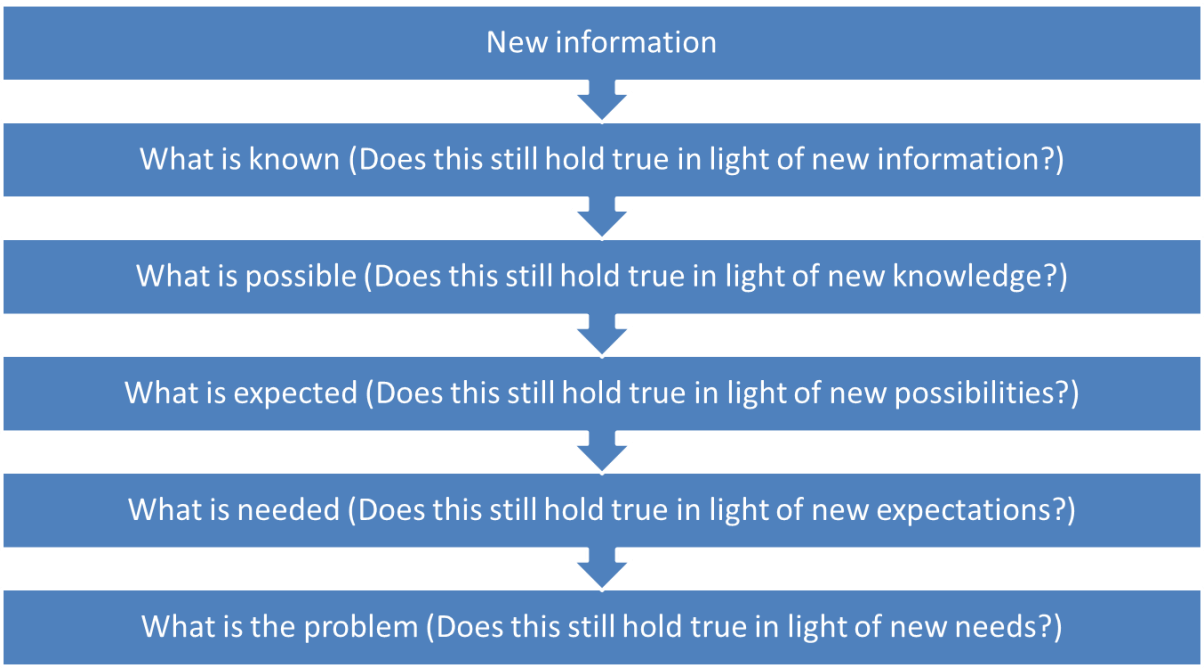
The impact of this growth in new information is manifold. Coming from a background of scarcity and control, the public sector tends to view more information as a definitive good. However in some ways it can make the operating environment more difficult, rather than less. For instance, it now may be uncertain what information should be drawn on and how for what issues, who should be consulted about what, and who needs to be involved in what projects. It can be hard to filter what is relevant and what is 'noise'.

Specifically in regards to innovation, it is suggested that the growth in information has the following impacts:

- What is known needs to be revisited – new information means that it cannot be assumed that what was known is still relevant/valid or applicable
- What is possible needs to be revisited – new knowledge means that it cannot be assumed that what was possible before still is. Old possibilities will have been replaced by new ones
- What is expected needs to be revisited – new possibilities mean that expectations of what *could be* will inform expectations of what *should be*
- What is needed needs to be revisited – new expectations mean there will be new (unmet) needs.
- What is the problem needs to be revisited – new needs mean there will be new (or revealed or better understood) problems.

In other words this process of revisiting – of learning or relearning – leads to a changed understanding of the problems where innovative responses are needed.

Figure 3.2. New Information Leading to New (or Better Understood) Problems



A Changed Understanding of What *Can* be Done

The learning process does not stop once the problems are identified however. A problem is not a static artefact – it, and the understanding of it, will change as the problem is engaged with, and more is learnt. This learning continues as organisations

experiment to see what can be done, and this further reveals the nature of the problems they are trying to address.

Sometimes this experimentation will be minor and can fit within existing practices, existing procedures and existing organisational structures.

Sometimes though, just as with disruptive innovation in the private sector, there will be a need for new 'business' or operating models – new ways of organising and working to deliver the innovation needed (whether a government program, a service, a policy or regulation, or even a new way of conceptualising or delivering an aspect of government).

This is not surprising – after all, much of the public sector as an institution came about in the late 1800s/early 1900s and reflected the trends of the time including the industrial revolution, the emergence of bureaucracies, and a belief in scientific management. Part of this industrial model was about the control of information through rigid hierarchies reflecting its previous scarcity.

It makes sense that without major changes, the public sector as an institution may struggle to deliver some of the innovative responses required in a world of constant new information. Experimentation with new practices, with new ways of thinking, and new ways of organising and new conceptions of how government works may be needed.

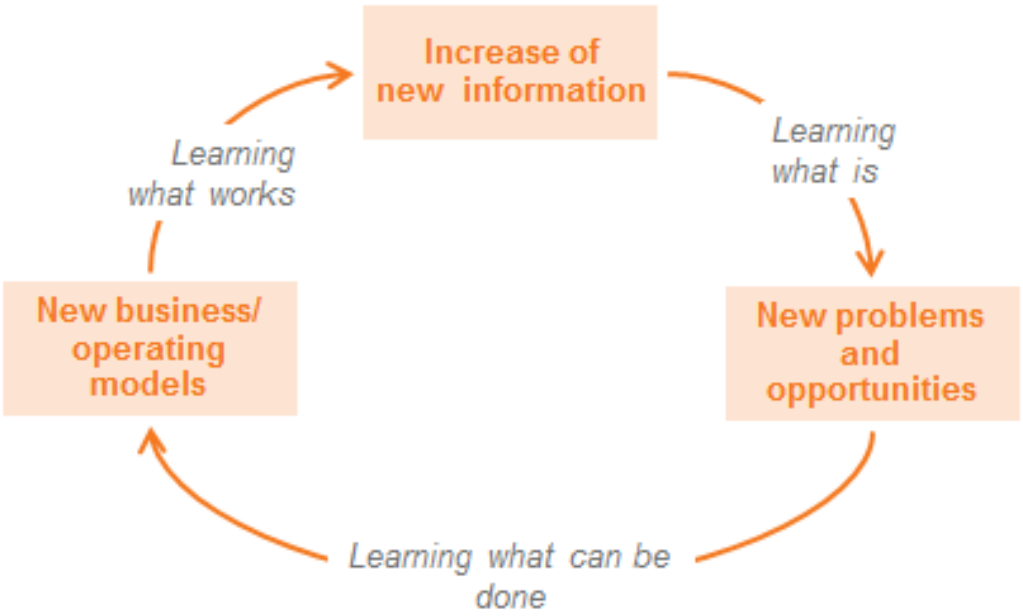
This in turn will lead to learning about what works, and this new information will lead to learning about what is needed (and thus new problems requiring innovative responses).

A Changed Context Requires a Changed Approach to Diffusion

In summary, these various changes suggest that government organisations cannot rely on things continuing as they have, nor that policies, programs and services can stay the same. Organisations must continually revisit where innovation is needed, and then seek to respond, to adjust, to adapt (and sometimes even transform).

Governments, as part of a wider dynamic system will react to changes from elsewhere with their own changes, which in turn will generate other changes, each of which may require a reassessment of what needs to be done, what can be done and how it should be done.

Figure 3.3. New Information, New Problems, New Ways of Responding and Continuous Learning



At each stage of this cycle *learning is key*, whether it be:

1. Learning what is – what is known, leading to learning of what is possible, then what is expected, then what is needed, then what is the problem faced
2. Learning what can be done – what are the responses to those needs, those problems
3. Learning what works – so not only what can be done, but what should be done and what is sustainable.

This requires placing ongoing learning and innovation as fundamental activities of public sector organisations.

Chapter 4. Facets of Innovation

Public sector innovation is multi-faceted

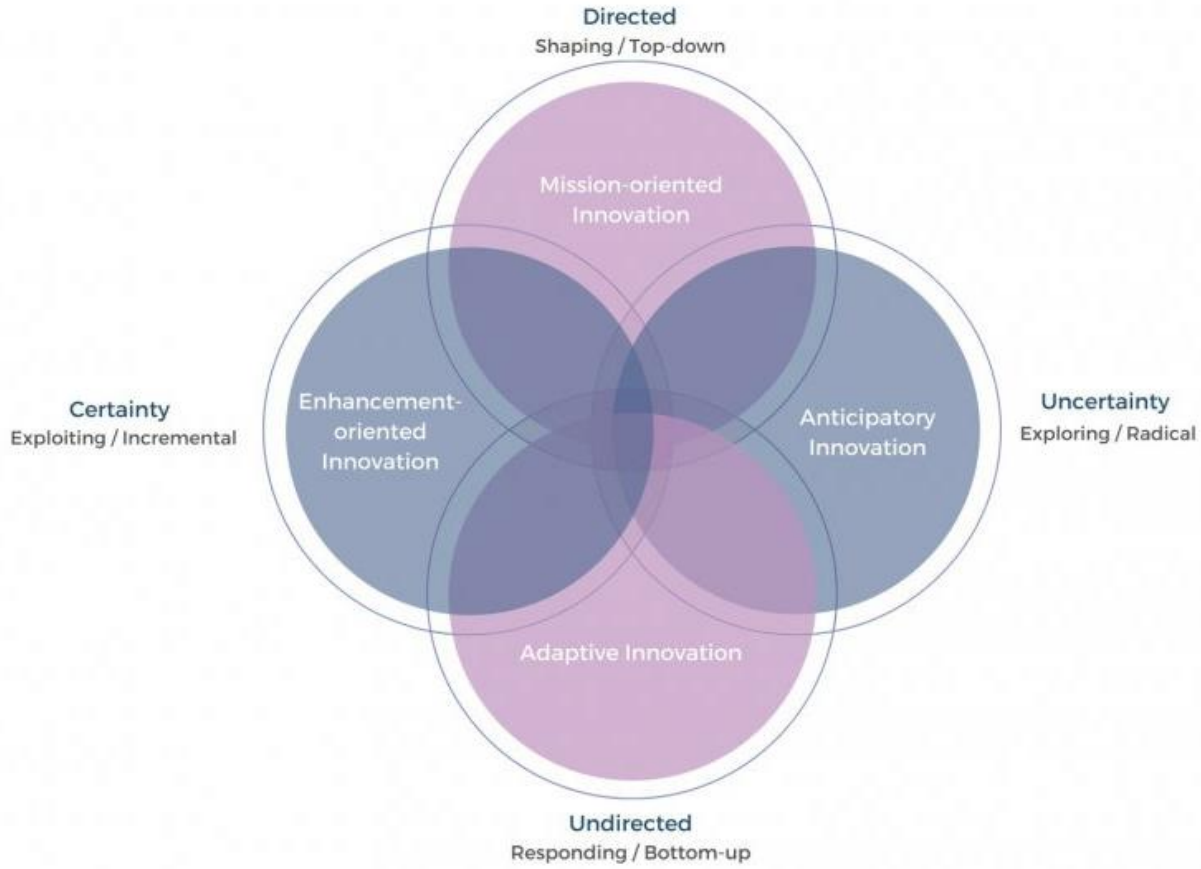
Public sector innovation will occur in contexts with different levels of uncertainty, and those different contexts will require different strategies, working methods, and types of dissemination and diffusion. An innovation portfolio can be understood in terms of facets, depending on two factors:

- Is the innovation directed? Does it have a clear intent/objective that it is trying to achieve, or is more about discovery and responding (proactively or reactively) to externally generated change?
- Is the innovation dealing with high uncertainty? For example, is the context one of exploring completely new ground, or is it one where the challenge and context is relatively understood?

Based on these two factors, four facets emerge.

Figure 4.1. Multi-faceted innovation model

Based on two factors: level of direction and certainty



Source: (Observatory of Public Sector Innovation, 2018[11])

Enhancement-oriented innovation

- This facet focuses on upgrading practices, achieving efficiencies and better results, and building on existing structures, rather than challenging the status quo.
- It will generally exploit existing knowledge and seeks to exploit previous innovations. This type of innovation often builds efficiency, effectiveness and impact via existing processes and programmes.
- This is traditionally where most governments have focused their innovation efforts.
- The transfer of knowledge involved in this type of innovation is typically explicit and occurs via existing channels. The sharing of best practices and

standard practices enhances the efficiency of and impact around known issues and challenges.

Mission-oriented innovation

- This facet involves a clear outcome or overarching objective for which innovation is leveraged. There is a clear direction, even if the specifics of how it will be achieved may be uncertain.
- This type of innovation can range from the incremental to the more radical, but will often fit within, rather than subverting, existing paradigms.
- Such innovation can be very important for achieving societal goals, though it also works at an organisational or individual level to align activities. Public sector bureaucracies are naturally attuned to this sort of innovation, provided there is sufficient political will.
- Missions can generate motivation and inspiration, a sense of what is trying to be achieved beyond the day-to-day process work, as well as guidance and reassurance when specific plans fall off track. A clear goal makes the value of diffusion and learning apparent.
- The transfer of knowledge involved in this type of innovation is typically explicit and occurs via existing channels. However, for more radical shifts in working methods, new types of sharing may be needed. Organisations will not only need to test different approaches and assess their impact in achieving the overall goal but also share this feedback with the rest of the organisation so that it can exploit and scale the methods that work.

Adaptive innovation

- In this facet, the purpose to innovate may be the discovery process itself, driven by new knowledge or the changing external environment. When the environment changes, perhaps because of the introduction of innovation by others (e.g. a new technology, business model, or new practices), it can be necessary to respond in kind with innovation that helps adapt to the change or put forward something just because it has become possible.
- This type of innovation can also range from the incremental to the more radical. However the more radical adaptive innovation is, the more likely that a public sector organisation will either endorse it from a leadership level or seek to suppress it or force it outside of the organisation.
- Adaptive innovation can be extremely valuable in matching external change to internal practices and usually it cannot be directed top down, because people's developing needs cannot be prescribed. Adaptive innovation will generally be driven from the bottom-up, as those closest to citizens and services will often be the ones who see the need for change and react accordingly.
- This type of innovation is well served by more informal types of knowledge transfer. However, in order to speed up diffusion throughout the organisation

and reduce transaction costs, systemic knowledge channels and networks can be highly valuable.

Anticipatory innovation

- This facet involves exploration and engagement with emergent issues that might shape future priorities and future commitments. It has the potential to subvert existing paradigms. Very new ideas generally do not cohabit well with existing reporting structures, processes, and workflows. Anticipatory innovation therefore generally requires being sheltered from core business and having its own autonomy. Otherwise the pressures of very tangible existing priorities (such as existing missions) are likely to cannibalise any resources that are dedicated to something preliminary, uncertain, and with no guarantee of success.
- Anticipatory innovation is important because big changes are often easiest (and cheapest) to engage with and shape when they are still emergent and not locked-in.
- This type of innovation is well served by new and informal channels of knowledge transfer. Mechanisms and channels that facilitate the detection and response to "weak and strong signals" will aid this type of innovation. As this type of innovation deals with emerging issues, established language may not yet exist and knowledge transfer may occur in less codified and organised forms.

The public sector needs multidextrous diffusion

If a public sector is to be 'multidextrous' in its approach to innovation and able to successfully engage in and manage innovation across all of the four facets, an equally multidextrous approach to knowledge transfer is also needed. Just as only one strategy or working method will fall short, just one mechanism or channel for knowledge transfer will equally limit organisations' capacity to innovate. The following chapters discuss the types of organisational "learning and diffusion loops," types of knowledge, channels for knowledge transfer, and approaches and methods that can support a multidextrous approach to innovation.

Chapter 5. Diffusion and Learning Organisations

Learning is an important activity for public sector organisations and it can be viewed as the "demand" for innovation diffusion. If an organisation does not prioritise learning, individuals within it will not be incentivised to seek and use new information or try new practices.

A learning organisation with a purpose may believe that change is inevitable and that learning is a matter of staying relevant and continuing to do work that matters. It also means people know why they are learning and why it is important to learn from the diffusion of innovations elsewhere.

As referenced in the first Innovation Lifecycle report (OECD, 2016[10]), most public sector agencies have learning systems in place. It referenced the different scale and nature of the learning needed now; that it should be regarded as difficult, that it must not be a 'set and forget' practice, that there are different forms (formal and informal, structured and ad hoc) and ways (through coaching, experience, immersion or even simply through reading or observation).

"Tacit and Explicit" Knowledge in Organisational Knowledge Management

> *One of the basic rules of knowledge management is that we always know more than we can say and we will always say more than we can write down. The loss of content, but particularly context involved in codification means that written knowledge is only ever a partial representation of what we know.*
>
> *There is value in codification provided we do not assume complete capture. Time pressures on staff mean that even where they can codify they are often only able to do a partial job, it is also true that human knowledge is deeply contextual, it is triggered by circumstance, if the author of a document was not properly stimulated at the time of the codification they not remember all of the circumstances that should qualify the application of best practice. (Snowden, 2003[12])*

Information and knowledge come in different forms, from data (facts, observations and statistics), information (organised data), knowledge (actionable information that aids decision-making) and wisdom (the judgement to act appropriately to the situation) (OECD, 2016[13]). The field of knowledge management often refers to explicit/codified or tacit/un-codified knowledge.

Box 5.1. Explicit and tacit knowledge

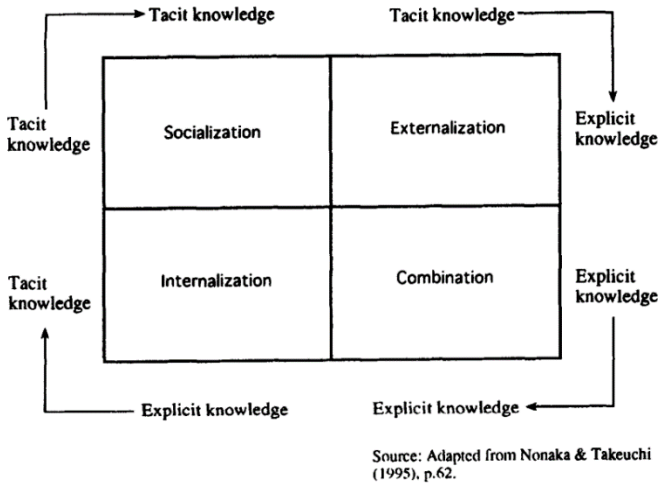
Explicit or codified knowledge is abstract, externalised, and articulated in some form. It can therefore be shared easily with those who did not acquire the knowledge through experience.

Tacit knowledge is unarticulated, developed via direct experience, and subconsciously understood. It is often difficult to capture and codify with a high degree of fidelity and some contextual knowledge will always be lost in the process.

Recent research and practice in organisational knowledge management, often abbreviated as KM, has been heavily influenced by the work of Ikujiro Nonaka, who introduced the SECI model (Nonaka, Umemoto and Senoo, 1996[14]). It distinguished different types of knowledge transfer:

- Tacit to Tacit (Socialization): is a process of creating common tacit knowledge through shared experiences.
- Tacit to Explicit (Externalization): is a process of articulating tacit knowledge into such explicit knowledge as concepts and/or diagrams
- Explicit to Tacit (Combination): is a process of assembling new and existing explicit knowledge into a systemic knowledge such as a set of specifications for a prototype of new product
- Explicit to Explicit (Internalization) is a process of embodying explicit knowledge into tacit, operational knowledge such as know-how.

Figure 5.1. SECI model



Source: (Nonaka, Umemoto and Senoo, 1996[14])

It defines organisational knowledge creation as a linear process, moving from tacit to explicit. It assumes a relatively stable organisation in terms of people, purpose, and business model. It was later revised to include more nuance about context and learning environment (Nonaka and Toyama, 2003[15]) but this original model remains strong in

the knowledge management field and has launched many organisational knowledge management initiatives.

Explicit, codified knowledge can be acquired independently of experience transferred easily. Knowledge (and wisdom) associated with innovation is held by individuals, whereas explicit knowledge is that of organisations (OECD, 2016[10]). Therefore, it is natural for an organisation to want to codify as much of its knowledge as possible for efficient transfer so that the learning can be exploited and contribute to a richer body of evidence as well as live beyond cycles of staff turnover, when "institutional knowledge" is lost. Accordingly, the goal of many early knowledge management initiatives was to codify material. However, perfect, high fidelity codification of tacit knowledge is currently impossible.

In the context of diffusion for innovation, the most relevant aspects are tacit knowledge, especially as it first emerges, before it is "a thing." Only when an innovation has been repeatedly exposed to a new context will it start to become well understood (thus losing its status as a new innovation) and easy to explain to others without their direct experience.

An important aspect of tacit knowledge transfer is that it requires trust and respect between people—it cannot be acquired through the same channels as explicit knowledge. This makes the transfer of tacit knowledge between contexts especially difficult, often with high transaction costs. Further complicating the situation, the constant stream of new information, a constantly changing context and the need for ongoing experimentation means that there will always be new tacit knowledge.

Diffusion for innovation places an emphasis on the relationships and capabilities of individuals and teams. If organisations want to improve tacit knowledge transfer, it means that they need to help connect individual employees and teams with others that are also exploring similar challenges (OECD, 2016[13]). There will always be a trade-off between the depth and nuance of knowledge and the efficient transfer of knowledge, but if organisations wish to innovate, they should invest in the environment, channels and mechanisms that incentivise a diversity of transfer types, suited to the level of pattern stability in the knowledge or practice.

Scales of analysis

Since diffusion and learning involve humans and because humans relate differently at different scales, different approaches to diffusion must be considered according to the factors influencing each scale:

- Individual (i.e. cognitive, interpersonal, attitudinal, behavioural, emotional)
- Team (i.e. interpersonal, in-group identity)
- Organisational – (i.e. dominant narratives, authority, values)
- System – (i.e. cultural norms, language)

In the international public policy context, international dissemination and diffusion are often topics of greatest focus. While this scale is of great relevance for public sector innovation and does impact innovation at the organisational level (especially for

directed, mission-oriented innovation), the factors affecting policy transfer are distinct and may differ from the diffusion of innovations that are not policy-focused. For instance, international policy dissemination and diffusion is influenced by peer country emulation, international competition, ideologies, and political trade-offs (SIMMONS and ELKINS, 2004[16]). Certainly these factors are important, particularly for individuals at top levels of government; however, for individuals at the organisational level (a ministry, division, functional unit, or programme or project team which share a similar context), the influencing factors will differ.

What is common among individual policymakers and organisational innovators, is that each will be influenced by factors beyond an individual's perceptions, motivations, emotions, attitudes, biases, and habits. Each individual will be strongly influenced by those considered "peers" as well as others in that individual's professional and personal network and society, and influenced via fads, fashions, cultural norms, social class, social status, cultural narratives, and even mass marketing and propaganda. While these are socio-cultural factors beyond the scope of this report, they are important to consider in the context of diffusion of innovations.

Diffusion and Learning Loops

Not only are there different types of things that can be learnt, there are also different types of learning. One of the most well-known frameworks (OECD, 2016[10])) distinguishes between three types of learning:

Box 5.2. Learning types and loops

Single-loop learning – learning within the existing mindset. Within government this may be efficiency-oriented, and about achieving 'value for money'

Double-loop learning – exploratory learning, which builds on the first loop and questions underlying causes and seeks lasting solutions. Within government this may be framed as 'Can we do it better?'. Double-loop learning tends to be more conceptual and social learning and can be radical in nature. While it can lead to a changed mindset, it might also result in a stronger belief in the current one.

Deuteron-learning – involves the learner learning about learning in itself, that is, about how one learns, to ensure a more successful learning.

Unlearning - removing a dominance of certain types of knowledge, of certain styles of thinking, and allowing for a plurality of difference types of knowledge and practice.

Innovation is more likely to be linked with double-loop learning, with its potential for doing better by doing differently, rather than single-loop learning's focus on doing the same things better. Deuteron-learning is relevant for both learning and innovation, where more sophisticated practice can be achieved with maturity of understanding of the practice itself.

Learning can reinforce the existing way of working, and can hold organisations back from seeing other possibilities. Unlearning then might be about removing a dominance of certain types of knowledge, of certain styles of thinking, and allowing for a plurality of difference types of knowledge. At an individual level, this involves recognising that the old mental model is no longer relevant or effective, finding or creating a new model that can better achieve goals, and exercising new mental habits (Mark Bonchek, 2016[17]), all of which require cognitive work and intentional reinforcement. This might be about appreciating what different disciplines and different traditions of learning and knowledge can add. A radical unlearning organisation would be advantaged by having a capacity to critique, and inspire new ways of thinking and acting that are not constrained by existing presuppositions (OECD, 2016[10]).

More notes on learning from Lifecycle Report 1: Learning for Innovation (OECD, 2016[10])

Lifecycle Report 1 focused on learning for innovation, or the "demand" for diffusion of lessons and knowledge. Diffusion, like learning, can be very difficult for very understandable human reasons as growth asks individuals as well as organisations to question their identity and make decisions about how each is going to accept new knowledge and decide whether it will change beliefs, perceptions, and actions.

Some important points from that report are included here as diffusion and learning can be seen as the supply and demand of innovation in public sector organisations. Moreover, the same points made about the challenges around the process of learning in organisations can also apply to diffusion.

Learning for Efficiency and Exploitation VS Learning as Exploration

So we see that learning is often divided into being about efficiency and exploitation and making the most of existing knowledge (single-loop learning), or about exploration and seeing how things can be done differently (double-loop learning / learning for innovation). This distinction helps illustrate some of the tensions that both learning and innovation share in large organisations.

Large (private sector) organisations could previously benefit from 'scalable efficiency', where they would seek to extract the most value from their stocks of knowledge, and where the "experience curve" could be exploited – where doing the same process resulted in lessons that could make that process more and more efficient.

Yet efficiency sits uncomfortably with innovation and exploratory learning, which can benefit from error, mistakes, failure and waste.

Learning Can be Uncomfortable, Challenging, Risky and Costly

Exploratory learning that can lead to innovation may be uncomfortable; whether that discomfort is felt by organisations, the leaders, or the individuals working within the organisation.

Exploratory learning and innovation can involve challenging orthodoxies and questioning deeply held beliefs about what is important. This is not an easy thing for organisations to do, as it may be hard for an organisation to continue with its work

while simultaneously questioning what it is doing. Additionally learning may lead to unexpected outcomes for the organisation, some of which may be negative, but all of which may be challenging or difficult to manage

Further, different parts of the organisation may be learning different or even conflicting things which may be hard to reconcile, or may hinder having a shared sense of what is 'known'. On a personal level, this can affect a person's sense of personal competence and efficacy, which can cut very deeply and bring about very negative responses to the thing that brought about the questioning.

In a world of constant new information, what is known is less important than what is not known. That emphasises the importance of the flip side of learning, 'unlearning', which is the need to unlearn, or to challenge, pre-existing and accepted knowledge, and such a notion hits at the traditional view of hierarchy, expertise and position-based authority. If existing knowledge is not the answer, then it is just as likely that any staff member may have valuable insights; or even that those in authority are the ones to *least likely* to know the right answers because of their investment in previous knowledge.

Learning, then, may not sit comfortably with existing organisational structures or processes.

Learning may also be difficult at the leadership level.

At a personal level, learning implies that there will be mistakes (or things seen as mistakes) and course corrections as new things are learnt and old lessons replaced. Yet successful leadership is rarely associated with mistakes or corrections. Therefore it may be difficult for leaders to admit they have made a mistake or that there needs to be a change to something they believed earlier. Learning might be seen as admitting that they do not have expertise or mastery of their domain. This may inhibit them becoming successful models for, and champions of, learning and diffusion.

At an organisational level, this connection between learning and mistakes means that leaders may have to set the parameters for the scope of allowable learning for the rest of the organisation.

Such a distinction can be particularly difficult in the public sector. The line between acceptable and out of bounds can change dramatically depending on sudden changes in political factors. Alternatively there may be vulnerable systems or people where change is difficult or risky (and yet likely where learning is most needed). Leaders may need to be brave in making those judgement calls.

Learning can also be discomforting for everyone else working in the organisation. The need for learning, for possible constant learning, may sit uncomfortably with self-perceptions of core competencies, core strengths, or even just things that are 'known'. That may be hard to accept, as education and expertise can be a big part of the identity of a professional (public servant). In this, and other ways, learning can strike at notions of the self, of who people really are or what they are capable of.

These are big questions, and not necessarily ones that people are going to be comfortable having exposed in the work environment.

Learning is Valuable (If You Know the Reason Why)

It would seem clear then that organisations do need to learn – the amount of change requires it. Organisations need to learn in exploratory ways that challenge existing beliefs and knowledge, and that involve professional vulnerabilities of taking risks, of failing, of wastage, of being seen as making errors and mistakes, of being wrong. This learning will likely be uncomfortable and yet not even guarantee benefits. What then is the benefit? Why do organisations pursue it if there are such tensions involved, other than necessity being a driver?

The answer to this gets to whether an organisation can be clear about what it is for. Why does the organisation exist and what is it trying to achieve? What is its intent (variably described as vision, mission, purpose, or even simply as a clear goal)?

A clear purpose can have a number of benefits in guiding the learning journey of an organisation and in turn understanding why learning from diffusion of others' innovations is not just necessary but something to be valued.

Learning is Part of the Job, Not on Top of the Job

Learning is ongoing and will occur and come from all areas of life. Previously learning and work have been regarded as somewhat separate, with learning covered by formal training and development. Learning as part of the job, of being part of how to achieve what is expected, may then not fit comfortably with traditional performance management frameworks.

Truly adopting learning within organisations may require some careful thought about how to recognise or reward learning, or at least consideration of how to support individuals who have failed in good faith in pursuit of needed lessons.

Learning is a Social Process

In an interconnected world of increased new information it is hard for any one person to have access to all that is relevant. Diffusion and innovation are social processes because they involve discussion, trial-and-error, and rely on collective understanding.

> *Shared context is vital to knowledge exchange, and such context always involves some human trusted validation. This is not to say that codification of material in advance of need is not advantageous, but the effective reference is nearly always human. We do use written material, it represents reflective knowledge and has value, but we normally check out what is or isn't relevant within a trusted network. (Snowden, 2003[12])*

While at the international scale of policy diffusion, factors such as competition and peer emulation may be prominent (see (Stone, 2012[18]), (SIMMONS and ELKINS, 2004[16]), and (Gilardi, 2010[19])) factors at the individual and organisational level will differ. Thus, the individual and group social incentives for learning and diffusion must be considered in developing an organisational strategy for diffusion.

Learning is Increasingly an Open Process

In an interconnected world, this social aspect is much broader that just those people who work within the organisation. The learning that happens outside of an agency may be just as, if not more, important than the learning that happens within an organisation.

In a world of constant new information, government agencies cannot expect to have all the relevant information and knowledge within their organisation. They will need to access thinking, learning and resources from others.

For these, and other reasons, public sector organisations are now rarely solely responsible for developing and delivering policy frameworks and services – there are third parties that can be involved such as non-government organisations, industry associations or even specific firms, or citizen movements.

Therefore organisations may need to ask not only how diffusion happens within organisations, but also how it becomes known and integrated by others (e.g. partners, stakeholders and citizens).

Chapter 6. Types of Knowledge Flows: 4 Questions

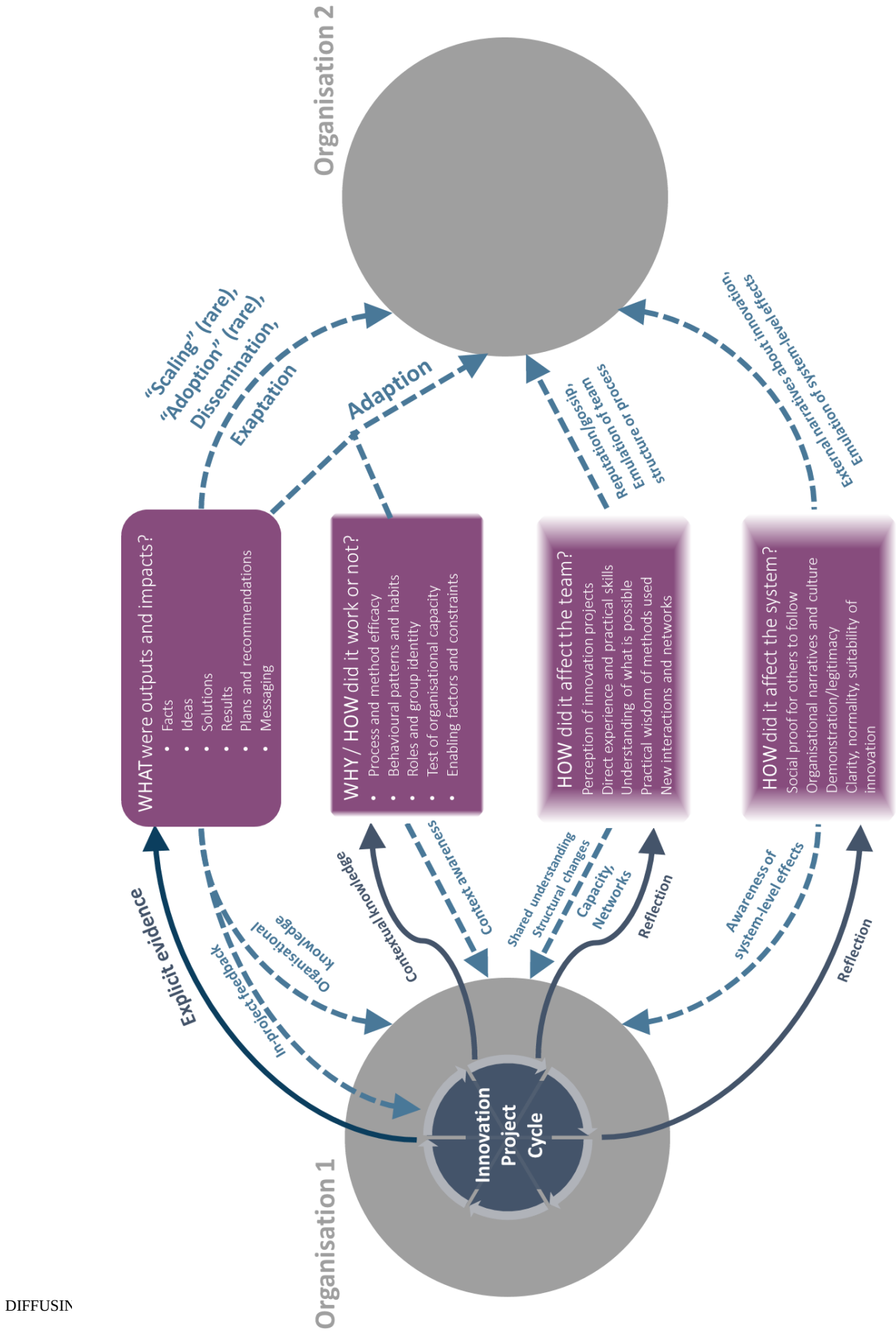
Any new project or initiative conducted in a complex environment, which is to say any environment involving humans, the act of engaging in the project itself will change the context irreversibly, even if no tangible artefacts or outputs are produced. This report series focuses on the organisational level (versus the individual or system level), so this section frames knowledge flow at that level. For the sake of this section, organisation refers to a group of people with a shared purpose who carry out something in a shared context at the same time. This can be as small as a project team or as large as a national government ministry. When considering both the intra and inter-organisational flows of knowledge-related results and outcomes of an innovation project, four framing questions should be asked.

Box 6.1. Four framing questions when considering knowledge flows

- WHAT were the outputs and impacts?
- WHY and HOW did it work or not?
- HOW did it affect the team?
- HOW did it affect the system?

Some of the answers to these questions can be articulated easily (although this does not always happen over the course of an innovation project cycle) and some answers can be articulated with some abstraction and in a format able to be shared with others who have not experienced the project. Some answers exist as sentiments, notions, beliefs, and other unarticulated experiences in the minds of those who experienced it, whether on the project team itself or as an observant in the same context, such as advisors, mentors, supervisors, or simply lurkers. Oftentimes, unarticulated knowledge is inaccessible from one individual to another but it is sometimes expressed as stories, narratives, or even gossip or art, especially among those with a shared experience.

Depending on if and how answers flow back to the innovation project team, the organisation, and/or to an outside organisation, entities will be affected in different ways. Further, different types of channels and mechanisms can enable or prevent their flow. This section proposes a model for how these questions describe the flow of information resulting from an innovation project cycle. It frames later discussion about how supply and demand for this information can be linked.


Organisation 2
"Scaling" (rare),
"Adoption" (rare),
Dissemination,
Exaptation
Adaption
Replication/bossip,
Emulation of
structure or process
External narratives about innovation,
Emulation of system-level effects
WHAT were outputs and impacts?
Facts
Ideas
Solutions
Results
Plans and recommendations
Messaging
WHY / HOW did it work or not?
Process and method efficacy
Behavioural patterns and habits
Roles and group identity
Test of organisational capacity
Enabling factors and constraints
HOW did it affect the team?
Perception of innovation projects
Direct experience and practical skills
Understanding of what is possible
Practical wisdom of methods used
New interactions and networks
HOW did it affect the system?
Social proof for others to follow
Organisational narratives and culture
Demonstration/legitimacy
Clarity, normality, suitability of innovation
Explicit evidence
In-project feedback
Organisational knowledge
Contextual knowledge
Context awareness
Shared understanding
Structural changes
Capacity,
Networks
Reflection
Awareness of
system-level effects
Reflection
Innovation
Project
Cycle
Organisation 1

WHAT were the outputs and impacts?

Diffusion can happen over the course of an innovation project, not just at the end. Over the course of an innovation project, usually some tangible artefacts, data, and content is produced as explicit evidence of the project and its outputs. Depending on the phase of an innovation project, different outputs can be generated.

Figure 6.1. Examples of explicit outputs

Explicit outputs can be produced at all phases of an innovation cycle

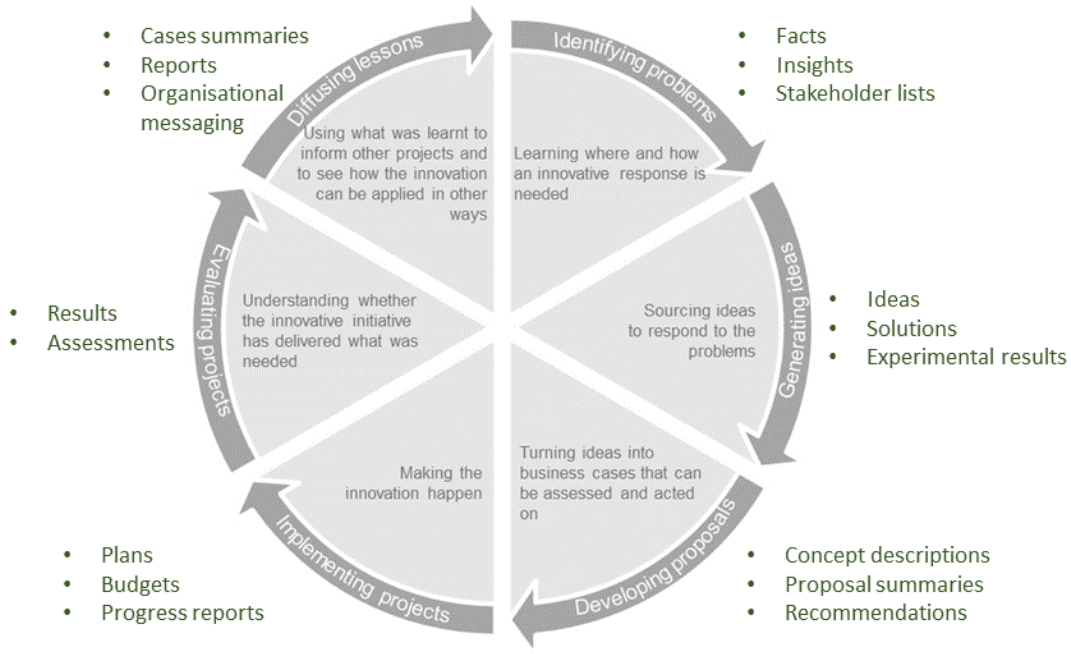


Table 6.1. Examples of explicit outputs

Stage of Innovation Cycle	Output examples
Identifying problems	Facts, insights, stakeholder lists
Generating ideas	Ideas, solutions, experimental results

Developing proposals	Concept descriptions, proposal summaries, recommendations
Implementing projects	Plans, budgets, progress reports
Evaluating projects	Results, assessments
Diffusion lessons	Case summaries, reports

If no explicit evidence is produced, the results will be much more difficult to share with others, learn from or exploit. This type of outputs are typically used to report on the progress or results of a project and are sometimes used to justify project costs, for auditing, on-boarding new staff mid-project, and for accountability to stakeholders and partners. Collectively, these outputs can be used as evidence for an internal organisational or policy change.

Innovation projects may lend themselves to different types of outputs depending on what facet(s) of innovation is being undertaken as well as the type(s) of evidence required by the organisation. For instance, for enhancement-oriented innovation, facts may mean performance data of an existing process while facts for anticipatory-innovation may mean qualitative, descriptive observations about a changing context. In any case, these are the things that can be abstracted and made explicit. These types of outputs are commonly produced for public sector projects, regardless of whether they are innovative or not, and organised and managed according to a knowledge management regime and possibly by a records management or archival system. This is the realm of traditional organisational knowledge management.

Internal transfer

The inter-organisational feedback loops created if and when these outputs are used by originating organisation can be considered single-loop learning. These feedbacks can improve or course-correct an innovation project midstream, improve similar projects or experiments happening concurrently, or be used in the future by the same team or organisation, assuming they are indexed and stored for easy retrieval.

External transfer

A collection of explicit outputs can also be shared externally as evidence to inform the work of another organisation or another group, team, or unit within the same organisation. Facts, ideas, and more commonly solutions, results, plans, recommendations, and cases are shared externally to tell a story of impact. The providing organisation will have its own incentives and motivations for doing so. This is classic dissemination, especially when it contributes empirical evidence to a body of knowledge in an established discipline.

The receiving organisation may wish to adopt the solutions and results of another, based on explicit evidence alone, and "scale" the solution, expecting similar results. However, because of the complex nature of public sector organisations and the diversity of purposes served, except for the most basic tactical solutions, they are often not successfully replicated in a new context without being first modified based on the new context.

In rare cases, exaptation may happen, in which a solution will solve an entirely different problem or serve a new purpose. The classic example of exaptation is the evolution of feathers which kept dinosaurs warm, followed by their radically different use for flight. A technological example is the development of the microwave oven after the chance discovery of food-cooking waves when an engineer's chocolate bar melted while in proximity to a magnetron. Different types of functional exaptation, both whole and modular, internal and external, are described by (Andriani and Carignani, 2014[9]) and while they describe the exaptation process as largely serendipitous, the more solutions that exist, the more exaptation is possible, so an increase in information and solution volume is a benefit to serendipitous exaptation, provided that they are findable.

However, the transfer of explicit outputs alone rarely results in successful diffusion since many human and organisational factors vary across contexts. Except for the most obvious and straightforward explicit outputs, such as checklists for shared standard procedures, more context is needed, not only about the originating environment but also about the new environment for the innovation. In this case, where outputs plus contextual factors are considered as a whole, the process of "adaption" is more of an apt term to describe the process.

In fact, according to the Innovation Barometer, published by Denmark's Center for Innovation, 73% of innovations were copied (13%) or adapted (60%) by others (Lykkebo, Jakobsen and Sauer, 2018[20]), which demonstrates not only the prevalence of diffusion for innovation but also the importance of adaptation to a new context.

WHY and HOW did it work or not?

Beyond explicit evidence and outputs from an innovation project, contextual knowledge is also produced, whether or not it is made explicit or shared outside of the organisation. This type of knowledge concerns the questions, "Why and how did the innovation work?" This knowledge can be produced during the course of a project or afterward, as lessons for the organisation to share with other organisations. Since memories about explicit details deteriorate with time, rapid reflection provides the most reliable representation of what occurred, although some loss will always happen.

This contextual knowledge, combined with the explicit results of a project, enables outsiders to understand the conditions that made the innovation successful. It also makes it easier to adapt an innovation to a new context.

Several questions can be asked to draw out contextual knowledge about what made the innovation work or now:

- Was the innovation process or methodology effective for the problem?
- Were the appropriate stakeholders involved?
- Who had capacity to be involved?
- Who was not involved and why not?
- Which types of project or process activities did stakeholders find valuable?
- Which types of project or process activities built project momentum?

- Which organisational structures made the project successful?
- Which organisational structures inhibited possibilities?

HOW did it affect the system?

Any project that occurs in a complex space will forever change the system in which it operates. Awareness of the system-level effects of a project can lead to better strategy development and greater precision about which type of interventions or projects could happen next within the organisation and among collaborators in the system.

When this knowledge is diffused externally, it can demonstrate the impact of a systemic intervention. While the intervention may have been built up iteratively inside the organisation to an eventual point of system-level scale, outside observers may observe and emulate the system-level effects and structures. Of course, this type of diffusion can have paradigm-shifting impacts but can be risky as system level effects may not translate across different organisational contexts.

The diffusion of this knowledge can also provide social proof for others to follow, change organisational and inter-organisational narratives and cultures, build legitimacy for innovation, and demonstrate clarity, normality, and suitability of innovation.

HOW did it affect the team?

A team that works together on an innovation project will develop relationships and shared experiences that change the perception of what is possible, what the team is capable of doing, and what is in the "adjacent possible" of the organisation.

In addition, each project will build a greater depth of expertise in the participants, sometimes including an acceptance of the ambiguity of doing things differently.

> *"[O]bservation, reflection, discussion and learning are advisable as the innovation develops from invention to implementation to diffusion. It is generally not possible to innovate without people (whether managers, staff, clients, or politicians) having to learn new ways of doing things, making mistakes, giving up particular ways of doing things, and adopting new ways. This is essential, but often goes unremarked." (Hartley, 2014[21])*

This type of diffusion, reflected inwardly, can build the case for structural changes that enable more or less of the type of innovative practice and capability that the project demonstrated—provided that this feedback loop exists.

Reflected externally, this type of diffusion often comes in the form of peer group gossip around teams who worked on known projects. In the innovation space, this can sometimes be characterised as "innovation theatre" in which the positive reputation of a team, legendary status built from successful results, can obscure the contextual challenges and collective efforts that made the results possible. It can also lead to emulation of the successful team's working methods or language. In a mentor relationship with mutual trust, this type of diffusion can be one of the best ways to learn about how to do innovation in the public sector.

Linking Supply of diffusion with demand for learning

The transfer of knowledge and practice expertise within and between organisations relies on many factors that contribute to the supply of innovation and demand of innovation. One may assume that increasing the volume of innovations on the supply side will result in an increase in diffusion. In fact, many public sector innovation efforts are focused on increasing the stock and flow of innovations; most policies, programmes and prizes are supply-side (Albury, 2015[22]). Successful diffusion and scaling requires equal attention to the demand side. Additional attention is needed on how can latent demand be expressed, how demand is recognised and incentivised and how supply can be connected to demand.

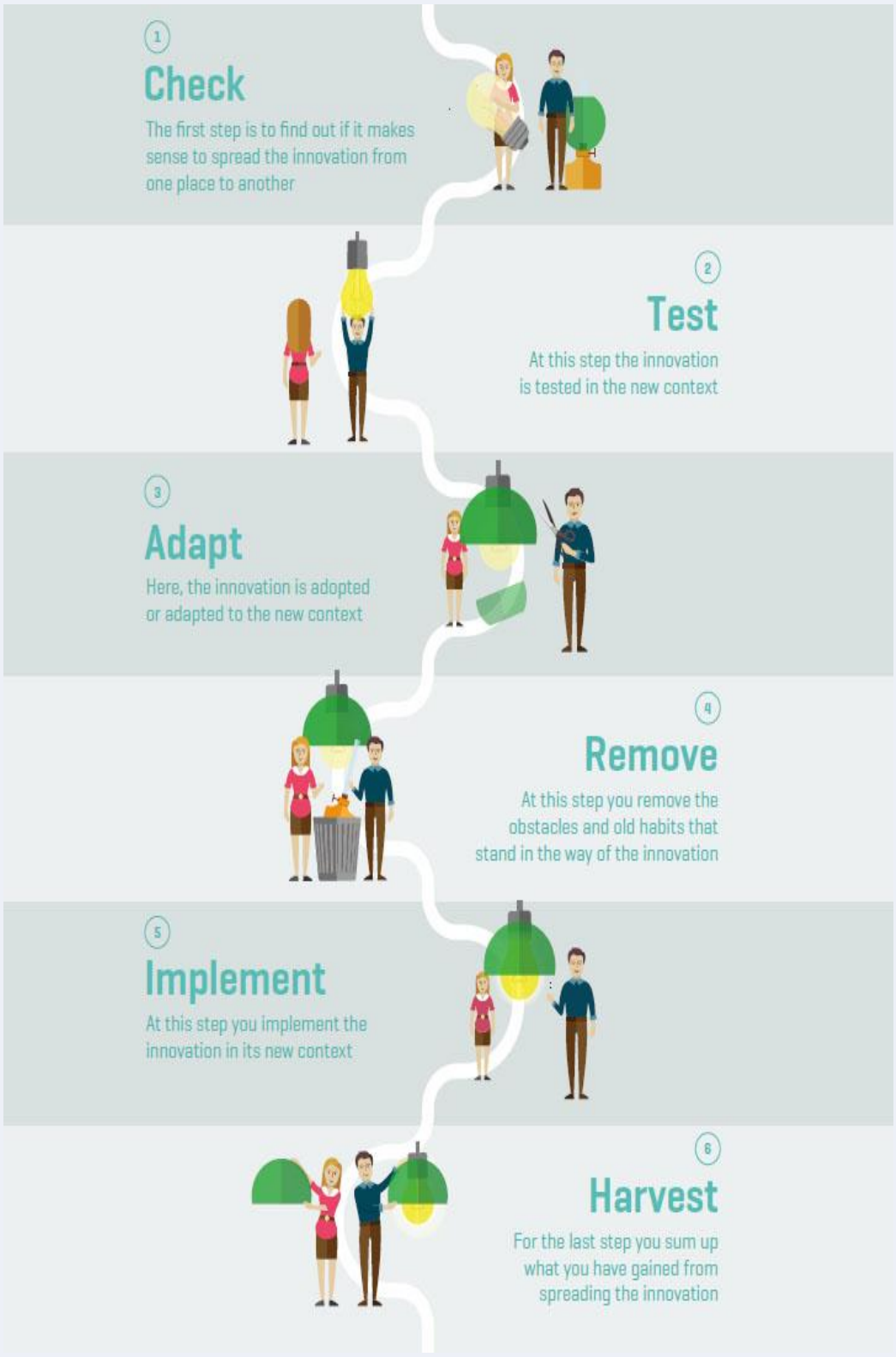
Box 6.2. Linking supply and demand for diffusion

Denmark's Spreading Innovation approach (National Centre for Public Sector Innovation, 2016[23])

In order to ease the spreading of innovation, the Center for Offentlig Innovation (COI) developed *Spreading Innovation*, a method, guide and dialogue tool for "givers" and "takers" of innovation to use when collaborating. The method emphasises the incentives, motivations and responsibilities of each. The guide consists of six steps (Check, Test, Adapt, Remove [barriers], Implement, and Harvest) with recommended actions to take and associated tools that help structure the dialogue throughout the spreading process. The guide provides a structure for an otherwise implicit, superficial or incomplete process. It was created for those who want to spread an innovation from one context to another. The approach promotes dialogue not only around what innovations occurred but also the people, workflows, physical environments and other factors that enabled them.

COI promotes this approach among two networks it established: one network is solely for leaders of innovation units, whereas the other is for employees and leaders working within the field of public innovation. COI emphasises that high levels of trust and face-to-face interactions are crucial for the spreading process.

Figure 6.2. Spreading Innovation 6-step process



Source: (National Centre for Public Sector Innovation, 2016[23])

In addition to linking the supply and demand of innovations, it is also important to link the supply and demand for practice expertise. Communities of practice have served as exchange platforms for this type of linking. They vary greatly in terms of scope, size, formality, and membership. A primary barrier is awareness of such communities as well as the articulation of the practice expertise that community members desire.

Box 6.3. Linking practice expertise supply and demand

The GovLab Network of Innovators (The GovLab, 2015[24])

The pace of the emergence and deployment of innovation, the availability of digital platforms, the demand for frictionless channels rich in meta-information, and the demand for solutions to meet concrete, abstract, organizational, strategic or tactical needs, have led to the emergence of informal global networks. New York University's GovLab Network of Innovators was an early example to attempt to meet these needs.

It addressed the need to establish knowledge and skill taxonomies, leverage social technologies, and facilitate connections within the vast global community of governance innovation expertise.

One of the choices for the development of this network is the creation of an application that allows users to identify and research the knowledge related to many sub-themes: open data, prize-backed challenges and crowdsourcing for public good. The matching feature of the network creates spontaneous connections between users, thus enabling the creation of communities who are not necessarily aware of themselves. The focus on informal skills is also a key for the matching of people and creating channels of diffusion that reflect imperfectly in organisational or academic titles or within nascent areas of practice. This community matching is instrumental as the volume of possible connections increases, but does require an initial mass of users, which can be difficult to build in the relatively niche field of public sector innovation.

One of the challenges of the management of this type of community is scalability: it is difficult for a community manager, or a team, to embrace all the users' profiles, characteristics, contexts, and subjects of interest, all of which are constantly evolving. Differentiating fads and fashions from deeper cultural or paradigmatic shifts is often determined by the community, not the moderator.

Chapter 7. Considerations for Effective Diffusion for Innovation

Types of Organisational Innovation

There is much discussion of diffusion of innovation as it pertains to the individual adoption of a product, usually a technologically-enabled one, as a private consumer. In the public sector organisational context, different types of innovations must be addressed differently with respect to diffusion. These draw heavily from the 10 Types of Innovation (Keeley, 2013[1]) and include:

- Network (proximity to others who create value)
- Structure (physical, technological, etc.)
- Process
- Communication channel
- Stakeholder relationship
- Role in a system
- Revenue model
- Service/Product
- Service/Product cycle
- Purpose or Value
- Explicit shared understanding

A number of factors about the innovation itself affect how it is diffused (from early use to assimilation). These include:

- Cultural compatibility
- Perception of simplicity
- Tangibility/trialability
- Perception of benefit by users
- Perception of uncertainty
- Early positive feedback
- Adaptability / customisability
- Interoperability with context ("innovation-context fit")
- Fulfils a broadly experienced need to perform a "job" or task (functional, social, and/or personal)

Channels for Diffusion for Innovation

How does knowledge transfer into, out of, and across an organisation and what are the channels for by which this happens? The following are suggested as some of the main channels by which organisations will diffuse knowledge relevant for innovation.

Internal organisational networks

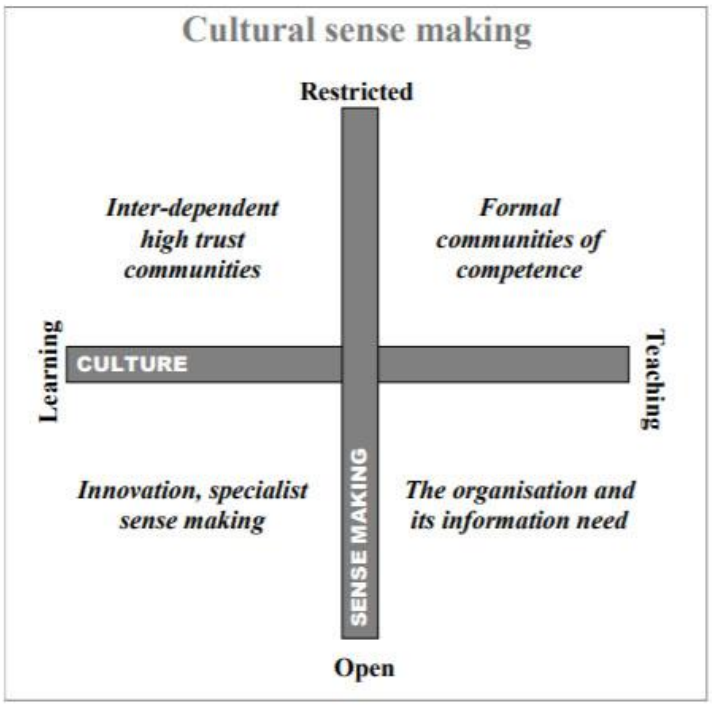
Networks are often a major source of diffusion for organisations and those that work within them. Networks may range from formalised partnerships around specific agendas to looser arrangements mainly based on information sharing and less tangible aims. Networks can provide insights from a wider group of actors, access to distributed capabilities and knowledge, or mechanisms by which to quickly sound out ideas and problems and potentially collaborate on responding.

Diffusion in internal networks often happens organically and relies, at least to a certain extent, on a shared culture and environment of trust. Compared with external networks, a shared culture is more likely within and organisation or team. However, interpersonal miscommunication, power dynamics, individual identities, cognitive problem-solving preferences, external incentives and other factors can still very much impact the in-group social environment.

Dave Snowden, a specialist of organic knowledge transfer, suggests that cultural sense making in organisations happens along two dimensions:

- Culture: contrasting formal, training-based, hierarchical cultures with those that are informal, learning-based, networked, and relationship focused.
- Sense making: contrasting communities that restrict their membership by use of a shared common expert language with those whose language is either commonplace or where the situation is sufficiently new and different that no expert language has yet developed (Snowden, 2005[25]).

Figure 7.1. Two dimensions of cultural sense-making



Source: (Snowden, 2005[25])

The channels for diffusion will function very differently depending on community type.

Given that participation will be to some degree voluntary, networks require effort, and there should not be an assumption that organisations can exploit communities for diffusion without providing (tangible and/or social) incentives and value back to the participants.

> *"Knowledge can only be volunteered, it cannot be conscripted…While a manager can enforce compliance with a process or set measureable performance standards for the provision and use of information, enforcement of knowledge exchange always fails…Managers can enforce compliance with process because the criteria for it are easily measurable within the normative framework of the organisation. Knowledge cannot be treated in the same way. The creation and dissemination of knowledge is in the gift of the knowledge holder and is predicated on the existence of trust in his or her relationship with the knowledge user. Knowledge is triggered in context." (Snowden, 2005[25])*

Those participating in networks must use negotiation, ongoing communication and goal setting, which is very different to that of a policy making or regulatory practices. In a digital era, networks may seem ubiquitous and easy to participate in, however a network will require investment in community management and accessibility otherwise participants will seek other avenues for collaborating and sharing.

External organisational networks

Networks that can support diffusion for innovation may extend across sectors or innovation disciplines, such a service design or behavioural insights. In the last few years, digital tools and online communities have made connecting with distributed professional networks much easier although external organisational networks tend to be much more transactional and focus on the sharing of explicit knowledge. An organisation seeking to leverage diffusion for innovation will need to assess what networks it (or its employees) participate in and whether there are gaps or whether investment is dedicated to the right mix of networks.

Box 7.1. Inter-organisational networks

Inter-organisational learning and diffusion channels can exist at scale of cities, as is described by Beyond Smart Cities author Tim Campbell (Campbell, 2012[26]), who identified “learning city” profiles and describes how the diffusion of knowledge and skills can be facilitated in different ways by governments and by civic actors through external organisational networks.

For example, the City of Turin, faced with economic recession following the decline of FIAT in the 1980s, deployed a learning effort that did not involve the establishment of governance and formal structures, but rather networks actors. Their informal nature did not prevent a real mobilization and the production of advice, ideas and orientations that came to feed the ambition of a new mayor. They allowed him to endow the city with a long-term strategic plan and economic recovery. Active for 20 years, these groups began to dissolve when the energy and mobilization began to dissipate.

Another example comes from Bilbao, which was faced in the 1970s and 1980s with a strong existential threat: a decline in port activity and an irreversible decline in the steel industry, which were the main economic engines of the city. "Bilbao Metropoli-30", a non-profit organization, was created as a structured shared learning community. To stimulate reflection and discussion about strategic outcomes and concrete action plans to be put in place, BM-30 set up a permanent learning environment, with seminars bringing together internationally recognized experts in 15 years. Fed by participation in international organizations and networks, BM-30 succeeded in creating a highly structured learning dynamic, avoiding the "isolated vanguard" syndrome, and resulting in a common vision among dozens of institutions in the region.

At a global scale and in an effort to build cooperation, share experiences, and exchange knowledge between cities, the International Urban Cooperation (IUC) developed a “city pairings” program which supports city pairs for up to 18 months via study tours, staff exchanges, trainings, and seminars. The cities then co-design Local Action Plans and pilot projects that are informed by their exchanges. Over 70 cities from 20 different countries have participated in the exchange so far (Stiff, 2018[27]).

Channels for explicit knowledge learning and diffusion

The diffusion and dissemination by a public administrations of explicit evidence and tangible content (facts, ideas, solutions, plans ready to implement, etc.) are often "one-way" and communicated through broadcast channels, where the effort and the process of cognitive and organisational learning relies mainly on the learner. It does not often involve iterations and back-and-forth discussion suited to the needs of the learner and the specific problem areas of interest.

This type of transfer, which we call "single loop learning and diffusion", the distribution channels allow the delivery of codified and encapsulated content suited to the interests and diffusion strategy of the organization. The benefit of this type of transfer is that it can be easily reused and redistributed over time and because it is codified, it can be easily found, provided that the learner knows the right words to find it. Importantly, this type of transfer can happen more easily outside of the context in which it was created—to other teams within an organisation or to numerous other organisations across the world, often instantly.

The single loop transfer reproduces a classical learning model, where the source of knowledge is a transmitter and the learner a receiver. Despite the progress of interactive, constructivist, learner-centered, or more widely, today's popular user-experience concepts and personalized learning pathways, the bulk of content transfer opportunities dealing with innovation remains very strongly marked by the top down and one way character of the broadcast channel.

This is true of both online channels and face-to-face channels, as is still the case for many innovation conferences, meetings, symposia and seminars, where a one-to-many, top-down model prevails.

The content transfer channels suitable for one-way learning and diffusion today rely mainly on digitized content transmitted over the Internet, although in varied forms. They reflect the structure of the Internet that we know today: born according to a logic server / client, site / visitor and evolving quickly to a logic of connection in a horizontal community. The content may be openly available, reserved for holders of a specific account that can be obtained on the fly or require a more complex registration and authorization process. The channel can be free or paid and delivered in re-usable/open or closed formats. The vast majority of these channels take the form of Internet sites, which can be classified as sites or portals (the difference between the two concepts has reduced over time, "portal" being sometimes used now to simply designate a complex site). These sites can be:

- mono-thematic or address several subjects
- edited by a professional or amateur team (or mixed)
- rely on a certain number of contributors or be largely open to the external contribution (i.e. wikis)
- comprised of architecture designed according to a user logic, with a route, a progressive navigation, or, conversely, according to a basic logic of documents, often requiring from the first page the use of a search tool with several levels of complexity

- comprised of content delivered entirely through the browser via a web language (i.e HTML) or in a file-based format requiring a reader (such as a PDF reader).

Regardless of the technical nature of these dissemination channels, their content can be deliberately pedagogical or it can be used as resources even if it was not the intention for the authors. For example, an everyday administrative document detailing a program can become an exemplars of how to develop a program in another context.

Among the sites explicitly intended for the transfer of knowledge by e-learning, various types are available and reflect the more global evolution of e-learning sites on the Internet.

MOOCs

The emergence, in the late 2000's, of the concept of MOOC (Massive Open Online Course), stemming from a philosophy of open access to educational content and co-construction, has given rise to many derivatives since, including for public sector innovation-related topics. Even though many MOOCs have sought to promote peer-learning and community interaction (or towards designated tutors), the essentially top-down nature of many of them makes them single loop learning tools in very many cases. One of the major challenges facing MOOCs—the very high drop-out rate, estimated in many cases at over 80%--is precisely because of their single loop, top-down character. The success of a dissemination effort using this channel relies on a high initial motivation level of the learning individual or organisation: in order to go through the stages of an apprenticeship where external cognitive recharge is weak and autonomy is high, the relevance of the content must be very high for the learners. This explains why dropout is an increasing function of the duration of the course, despite the use of a variety of content (videos, computer graphics, 3D modelling) that the web and increasing access to broadband connectivity allow.

MOOCs are examples of a new form of dissemination of knowledge on the web. Yet, they demonstrate the tension between single loop learning and double loop learning and diffusion: the level of collaboration and iteration determines the success of the learning.

Open innovation platforms

While the concept of open innovation and challenges and prizes are not new to the public sector, the proliferation of digital tools has made these channels more widely accessible by governments over the past decade. Open innovation platforms and challenges and prizes have been used by both governments and social sector organisations to generate new ideas and solutions to proposed problems. In their simpler forms, these platforms are about the explicit sharing of ideas in an open or closed group, with or without social features such as commenting or "liking." This forum-like functionality is still closer to an explicit knowledge sharing channel than one involving sharing of deeper contextual factors. However, some open innovation programs and platforms are much more extensive; beyond simple "idea harvesting" functionality, some facilitate more iterative process, included stage-gated rounds, evaluations, mentoring, and refinement of ideas as they move into implementation.

Beyond the explicit problem-solving work that these platforms enable, there are also several social roles this channel can play for diffusion of innovation. The visibility of the ideas as well as discussions on these platforms allows "lurkers" (those to watch but do not participate) to learn about how others are thinking, which can serve to normalise or clarify innovation in an organisation. The space for sharing of ideas versus fully formed proposals can signal to individuals in an organisation that divergent thought is acceptable. Depending on which ideas move forward, are chosen/awarded, and implemented, the open innovation manager can signal to everyone watching that certain ideas are more or less desirable in the organisation as well as how seriously the organisation supports innovation. The choice and visibility of evaluation criteria used to make these decisions can signal to those in the organisation about what innovation is and how it is rewarded in the organisation. If these are not made explicit, individuals may make up their own explanations.

Structured organisational learning programs

Most public sector organisations will already have a knowledge management strategy and a learning and development framework that they use. Organisations may send staff to conferences or events, or external or internal training, either for job-specific purposes or as broader personal development. Sometimes, learning programs may be focused solely on compliance-based learning, as required by corporate policies. Organisations may also have detailed policies regarding records management schemes or the generation and sharing of data and information, which can constrain how information and knowledge is transferred internally and externally.

Such practices may tend to favour existing knowledge and practices, rather than emergent practices and skills that are not yet codified or well understood. Organisations may wish to assess whether their existing learning programs enable the development of capability in emergent practices that are less well understood (e.g. the use of data visualisation, human-centred design, Agile software development, challenges and prizes, gamification, etc.).

Data sharing platforms

Another channel for diffusion of innovation are government data sets. The surge in open data movements in public administrations over the last decade has resulted in the creation of not only numerous data sets, but also platforms and data sharing protocols that enable easier and easier access to government information.

Data sets reflect what is measured, and measurement tends to focus on those things that are understood or that have been previously identified as important. Therefore, quantitative data sets may not always provide an indication of where new types of problems are emerging or where new types of information are being collected.

Sometimes, rich qualitative data is also available, often obtained through design processes and user needs assessments. Such data can sometimes provide an indication of when there may be a need to reframe the understanding of a problem.

Channels for contextual learning and diffusion

A very important aspect of the diffusion for innovation relates to the ability of learners to question the conditions of its emergence and development. These types of learning loops enable a deeper contextual knowledge to be shared, not only about the efficacy of a particular method used or the types of skills needed for its deployment, but also about how the process changed the organisation or system itself.

It is certainly possible to read and learn, through an article, a report, a written document, about the context of an innovation. This presupposes that its author decided from the outset to richly contextualise the description of the experience. However, double loop learning, contextual learning, generally calls for a more interactive channel which allows the learner to ask the questions that he or she deems relevant to establish his or her own understanding of the context.

Learning expeditions and study visits

One way to explore the context surrounding an innovation is a learning expedition. Strong heuristic gains can be built via an in situ an experience to collect testimonies and gain an understanding how “the how” which reading of a descriptive report or conference session does not enable. The channel must include interaction, iteration, and the ability of the learner to conduct a sort of "learning investigation" that sometimes takes the form of a work of journalism, investigation, or field research. Many administrations, local or national, allow this type of travel to learn. They can be practiced during the travel of an elected official or a policymaker in charge of one or several themes, accompanied by advisers and members of the administration. It can also be organized by members of the administration alone.

Box 7.2. Learning expeditions and study visits

Diverging Diamond Interchanges (Hoedeman, 2018[26])

The Danish Road Directorate set out on a learning expedition to solve a serious traffic congestion challenge at a specific major intersection. They set out to learn from innovations elsewhere.

The Diverging Diamond Interchanges (DDI), a new and unusual type of road intersection design, were deployed in the United States (US) from 2009 to solve congestion problems in intersections.

A Danish scout-team was sent to the annual meeting of the Transportation Research Board in Washington, D.C. in January 2015, where it learned about the US experience and know-how from DDI's in operation. Based on the American experience and personal contacts with employees at the Missouri Department of Transportation, The Danish Road Directive decided to initiate a pilot project to test the solution in Denmark. However, a more in-depth exposure to the innovation was necessary; exposure to the know-how related to implementation could not be obtained merely from technical documentation and via the initial meeting.

In November 2015, a cross-functional Danish team went on a study trip to the Missouri Department of Transportation to discuss the project design. After the study trip,

visiting ten DDI's in Kansas City and St. Louis, an iterative process started with workshops, tests and technical assessments towards the construction phase of the intersection. Several draft versions of the construction project was sent to Missouri Department of Transportation for comments and ideas.

As a result, the first DDI in Europe, at the intersection TSA 52 in Odense, was opened after two years of open innovation between the Danish Road Directorate and the Missouri Department of Transportation.

The level of formalization of the learning objectives may be highly variable. It does not necessarily reflect a greater or lesser maturity of the project or the learning method of the institution, because some trips are deliberately trips of "serendipity assumed." Officials may travel to learn from an organisation based on good signals alone, based on the reputation of that organisation. Sometimes public administrations view these trips as leisure, so sometimes the goals and intent must be made more explicit. This formalization, and the subsequent formalization of the gains obtained in the learning expedition, are also necessities in some administrations where the practice is new, and must be released from a suspicion of gratuitousness or frivolity.

Formal knowledge exchange networks

Matching learning and diffusion partners is in itself a time-consuming activity. Once identified, a potential partner may not have the availability, the inclination or the skills to engage in the exchange work required by the dual loop learning models, especially if the incentives are not clear. This is why many public actors have created associations or networks of formal exchanges, one of whose missions is to maintain a knowledge base and a directory of members, their achievements and their subjects of interest. These groupings make it possible to organize, on topics where iterative exchange is required, seminars, bilateral exchanges, meetings in various formats on a more or less broad theme. Some of these groups, in order to be more effective, limit the quantity of subjects on which they work, and their explicit objective is the creation of knowledge, often linked to innovation, and its dissemination.

Box 7.3. Contextual knowledge transfer across organisations

URBACT Transfer Networks (Adams, 2018[27])

URBACT is a European exchange and learning programme promoting sustainable and integrated urban development in delivering the Europe 2020 Strategy. Operating since 2002, Its latest programme focuses on transnational exchanges, capacity-building, capitalisation & dissemination, including peer-to-peer contextual learning and diffusion of innovative practices across contexts. Its Transfer Networks program, involving 25 networks comprising over 500 cities, is focused on personal, organisational, and city-level learning about shared urban problem spaces (carbon emissions, health, etc.) and peer solutions. Importantly, these networks are facilitated

in a way that creates an open and trusted space for sharing about practices and contextual factors that affect the impact of innovations.

> *These learning exchanges take place in an open trusted space created by the networks. No one is selling anything and transfer partners get to hear the real story, not an air brushed version, as we are as likely to learn from what didn't work as to what eventually did. And the learning is two way. For those intent on transferring their good practice, this is an opportunity to see it again through fresh eyes – and to gather valuable suggestions on how to make it even better. (Adams, 2018[27])*

The networks also provide shared experiences for participants to foster inter-organisational sharing via learning-by-doing activities involving real and hypothetical scenarios. This type of transfer focuses on a deeper, contextual inter-organisational sharing, beyond the typical summary reports, case studies, and presentations about innovative practices.

Peer-to-Peer learning programs and activities

Peer-to-peer learning can be a very useful method for sharing tacit knowledge and helping people learn from the experience of others. Peer-to-peer learning can help with the clarification and reframing of problems, by connecting people with others who have relevant experience on similar challenges, and whose perspective may help reveal unrealised parts of the problem. It can also aid in testing of assumptions, by putting together people who come from different environments and whose different experiences bring new perspectives of what is known or unknown.

Peer-to-peer learning programs, whether they are organized within the framework of professional network, established within the framework of cooperation networks, associations of public actors, national or global think tanks, often allow access to implicit knowledge and to enable the learner and the knowledge holder to create rich learning and diffusion loops. Their intent is to create a relationship between two or more individuals or organisations, using a variety of tools and means: visits, such as learning expeditions seen above, working meetings, phone calls or videoconferences, etc. These are often conducive to candid sharing, free from the pressure of the external gaze, with or without confidentiality clause, that enable shortcomings or failures to be discussed.

Peer to peer learning can take several forms and follow various methods. Among the four most widespread in the public sector are:

- Inter-peer working, involving sharing and collaboration among people and groups, without status asymmetry
- Work-shadowing, where an explicit status difference is assumed. This diffusion relationship is not new; the master-apprentice relationship has been widely used for centuries for practices and crafts, as seen in the spirit of medieval guilds and well before that. It can consist of observing or engaging in a limited way with the expert's work tasks.

- Mentoring, where one of the two participants or groups, explicitly recognized for their experience and their ability to reflect on their own practices, advises, accompanies, or guides a mentee.
- Fellowships, where specific expertise is sought and brought into an organisation on a topic or project basis. The learning exchange can occur in a bidirectional way, depending on the goals of the fellowship.

The Effective Institutions Platform has published a Peer-to-Peer Learning Guide (Andrews and Manning, 2016[28])) outlining many of the key considerations for peer-to-peer learning.

Project-based learning

Some groups, permanent or temporary, aim to learn and disseminate innovations, their context and their feasibility. The selected projects, which have a value in and of themselves, also have, in this case, a second value which is the creation of deeper contextual exchanges between the participants. These dynamics can be explicitly designed to produce an immediate return effect on the projects discussed, to refine them, make them more scalable, more sustainable, and relevant to others. The double loop therefore plays in both directions. This can involve organisations that have already installed an innovation in a specific area (transport, citizen involvement, urbanism, etc.) and other organisations wishing to learn. However, the project is not a one-way dissemination project: interaction loops between participants have an effect in return on the flagship projects selected. Not only can lessons feed back into the original innovation, but this channel can have a structuring effect: the partners may transition from their role as knowledge collectors to growing their personal investment in a joint action, thereby making the innovation more scalable via coordinated development.

Informal chatter: gossip, "innovation theatre," and humble truths

Informal chatter at conferences, over the phone, through professional networks, and other channels, can be an effective, albeit very intangible form of diffusion about the contextual factors that made an innovation possible. Particularly in the field of public sector innovation, the "secret sauce" that a team or organisation used to achieve results may be the result of a subversion or loophole within established structures, rules, and organisational norms, or the leveraging of a previously overlooked and underutilised organisational mechanism, the publishing of which may result in the removal of that option or even formal punishment of the actors involved. Knowledge of the internal political manoeuvring conducted within an organisation, if published, may sever or strain those relationships or open them up to exploitation by others with competing priorities. In a competitive environment, this knowledge sheltering will be amplified. In any overly constrained organisation, staff will innovate on the margins. Awareness of these manoeuvres and humble truths become a valued currency inside of an organisation and valuable learning both inside and out about "how to get things done." When these tactics are invisible yet a team or organisation's results are successfully disseminated along with a heroic message, lore or stardom may build. This "innovation theatre," fed by gossip and fame, can reinforce itself and further obscure the contextual factors that made an innovation possible.

Enabling Conditions for Organisational Diffusion

With the increase in information and change, organisations need to consider whether their existing learning and diffusion processes, structures and systems are appropriately geared towards this new operating context.

The exact nature of what is needed is going to vary for organisations – it will depend on purpose, stakeholders, constraints, and existing capabilities.

However each organisation should consider some of the following enabling conditions for effective diffusion for innovation.

Purpose – clear understanding of what the organisation is trying to achieve

A clear sense of purpose or mission, mission or goal can play a powerful role for diffusion and learning for innovation. It provides a reason for innovating, for what is trying to be achieved by the organisation and the role that innovation plays. It can help shift the perspectives of those in the organisation to what it is trying to achieve externally rather than getting caught up in internal politics about change (Eggers and O'Leary, 2009[29]).

A sense of purpose can be a strong individual motivator for innovators. Extrinsic motivation factors, such as money or fear, work well for motivating people to do mechanical tasks, but if the work involves cognitive skills, decision-making, creativity, such incentives are much less effective than having a sense of purpose for the work, in addition to autonomy and mastery (Pink, 2009[30]). Further, understanding the purpose of innovation can indicate what types of information and knowledge is relevant for individuals to learn.

It should be noted that articulating such a purpose will likely be challenging for any organisation, but may be harder for those in the public sector. Private sector organisations have the advantage of being able to be singular in their focus. Public sector organisations generally operate in a contested space with competing demands and tensions as to what is expected. It may be difficult to articulate a purpose that is audacious and inspirational as well as enjoying wide support.

Capability – the ability to act and build on the new things

A shared understanding of the role of innovation, an awareness of the problem space, and an awareness of possible innovations, taken together, are still not enough to enable innovations to diffuse in organisations. At the individual level, a capability is the ability, motivation, knowledge, and permission to act in response to something new. At an organisational level, it is the infrastructure, strategy, organisation of people, communication channels, and technology that enable those people to act. Without these capabilities, innovation may not diffuse beyond awareness.

Absorptive capacity - the capacity to absorb and integrate learning from outside of the organisation

New experiences, new insights, new ideas, and emergent possibilities will not make a difference unless the organisation, its leaders and its staff, have the capacity to recognise, understand, and act based on them. This may often be a question of time and margin available to reflect and learn.

A manager may not recognise the significance of a particular problem, whereas someone on the front line might instantly know there is a problem, but lack the means to act to solve it. This is a particular challenge for enabling adaptive innovation.

Absorptive capacity will also be about what is already known and will be shaped by previous experiences, inclinations and skills. Some learning will only make sense if it builds on previously obtained knowledge or patterns. Further, organisations cannot just tap into the knowledge of others when there is an internal gap identified. Such connections will depend on trusted relationships and a potential exchange of value. An organisation needs to consider whether there are deliberate processes and time for staff at all levels to reflect on experiences and share them.

Knowledge networks – active and distinct formal and informal networks for sharing information, data, and tacit knowledge

Even if new ideas, insights, and lessons are generated, the size of many public organisations make them difficult to share without active and knowledge networks suited for this purpose. Both formal and informal networks can be facilitated via technologies that reduce transaction costs between individuals; however, for informal networks, some face-to-face interaction is usually necessary to build trusted relationships between individuals. Formal networks, such as data stewards operating in different areas of an administration, may be legitimised by their supervisors and incentivised to share information according to performance goals. These networks not only serve immediate project needs, but also serve as a well of distributed knowledge about a particular topic. Informal networks, such as communities of practice, are equally important, especially for innovation, but less common in large organisations. Diffusion in these networks rely on trusted relationships between members. Organisations should allow time and resources for informal networks but should not link them to explicit performance goals. These informal networks may at times resemble social clubs but can be kept organisationally relevant through the definition of an explicit purpose as well as a moderator.

Tension for change – a compelling need for change

The diffusion of an innovation may be facilitated by a compelling need for a change. If individuals view the organisation as running smoothly and without issues, the tension for change will be low, even if the confidence masks systemic issues or “ticking time bombs.” The classic case of a tension for change is that of a crisis, which quickly reorients attention across an organisation around a problem. A critical audit report, media attention, rapid staff turnover, a critical system failure, a natural disaster, or a new political agenda can all create this tension. The demand for new information, insights, ideas, and solutions will increase. In some cases, the demand for a new way

of doing things—new processes, capabilities, and policies—will also increase. When a critical mass in an organisation feels the tension, the conditions are ripe for innovations to diffuse.

Organisational memory – an awareness of the reasons behind the current status or problems

Newcomers in an organisation will experience many of the symptoms of organisational legacy but may not have a clear understanding of why things are the way they are. This understanding, while at times can be limiting if used as a reason not to change ("this is how it has always been"), can also provide valuable context for adapting an innovation to the organisational context or knowing in exactly which ways the innovation is likely to disrupt the organisation. This knowledge on its own is neutral, but can be used to enable or block an innovation.

Openness - being open to different perspectives, including those from non-traditional sources or established formal and informal organisational hierarchies

The value of different ideas and experiences will only be diffused as long as people within an organisation are open to this difference and newness. This involves being open to, new ideas (including not dismissing or blocking the ideas of others), not knowing, divergence, new sources of expertise, mistakes, and ambiguity. If individuals in an organisation are incentivised to exercise divergent behaviours and processes, the demand for innovation diffusion will increase. Over the last decade, public sector open innovation practices and challenges and prizes have provided a legitimising mechanism for openness.

Openness is also about diversity, which may be a matter of diversity in people, in information, in skills and aptitudes, in backgrounds, in cognitive preferences, in beliefs/perspectives, and/or in tolerance for risk. An openness to diversity will also open an organisation to diffusion of innovations.

Breadth of skills – multi-disciplinary diversity

Having a breadth of skills within an organisation will increase the capacity for diffusion, as different disciplines will add to the richness of knowledge in an organisation and, in turn, provide more opportunities for an innovation to be viewed from a different perspective, applied in a different way, or applied to a different type of problem.

Depth of expertise – familiarity with content or practice, built by exposure

Content expertise allows individuals and teams to make sense of the innovation based on their wealth of knowledge in their field. This depth will enable them to have a sense of whether the innovation is truly novel and to what extent the innovation could affect current understanding of the field. This can lessen perceived ambiguity around an innovation and enable staff to start to experiment with the innovation, provided that it does not significantly disrupt the paradigm in which they are an expert. Depth of practice expertise, on the other hand, will allow individuals and teams to know how an

innovation might be diffused in an organisation as well as which contextual barriers it will likely encounter.

Tolerance for Risk

Innovation is uncertain and unpredictable– the end outcomes cannot be known beforehand, despite any expectations or hopes. Such uncertainty is challenging for public sector organisations where there are expectations of predictability, for accountability, for standardisation of services and outcomes across systems. It introduces a level of risk that may be uncomfortable. In this environment, the diffusion of innovation will bias those perceived to have a more predictable outcome. These are most likely to be geared toward enhancement-oriented innovation. While this is not a bad thing, it will limit the capacity to diffuse innovations that may be ambiguous now but may help solve the problems of tomorrow. Therefore, it is important to create opportunities for even ambiguous or risky innovations to be explored, even if not immediately diffused.

Each organisation will need to consider its appetite for risk and failure, and that of its stakeholders, clients, and political owners. It will also need to consider the risk of staying with the status quo, and the risks that would happen without innovation to meet new emerging needs and problems. Three sub-conditions related to risk should be considered.

Permission to question – psychological safety for those who dare question the status quo

Related to openness and diversity, the permission to question signals an organisation's willingness to support individuals who want to try a new way and experiment with the diffusion of an innovation. Organisations cannot try everything new all the time as it would create noise and reduce focus around explicit missions, but if individuals and teams do not know the time and place for questioning the status quo, organisational inertia will be biased against it, limiting opportunities for diffusion to occur.

Permission to try – a tolerance for exceptions to established rules or procedures

Rules and clarity provide structures and constraints that focus activity in an organisation. Typically they are in the domain of best practice or standard practice. If organisations create time and space for individuals and teams to "play with" or explore new things outside of the established rules, the opportunities to diffuse innovations will increase.

Safe spaces to fail – tolerance for unexpected results or untested solutions

Related to openness and permission to try/question, safe spaces to fail also open up an organisation to innovation diffusion potential. Even if individuals and teams are well aware of the existence of an innovation, its early use and assimilation may not be possible unless they are also encouraged to try them in situations that do not risk impacting critical systems. This is especially important in the long run for public sector organisations as those who borrow the "fail fast" doctrine of private sector

entrepreneurs may impact a critical government service and may only serve to show the organisation that innovation is hasty and dangerous. Therefore, "safe" in the public sector context also means shielded from short-term political consequences.

A systems perspective

In an interconnected world with complex systems, a direct cause and effect relationship is illusive or impossible to detect or predict, with multiple factors having contributed to an outcome. In such an environment, especially an information-rich one, it can be difficult to identify what matters.

In such an environment, diffusion of innovation requires an appreciation of the wider system and what roles the innovation might play, which parts of the system it may affect. It also involves being able to envision the consequences not just around the specific innovation, but also for the wider context, inside and outside of government. Without an element of systems thinking within the work of an organisation, it will be difficult to know when innovative response is needed, how it could be diffused, or how to prepare for its possible effects.

For more information, see OECD's *Systems Approaches to Public Sector Challenges* report (OECD, 2017[31]).

Approaches and Methods that can Support Diffusion

How can learning for innovation be enhanced or sped up? If innovation reliant on more tacit knowledge, and heavily reliant on individuals and sharing information, what can be done to assist?

It is important to be aware of and practice a diversity of methods in order to pick one best suited for the kind of diffusion needed. This section proposes that there are a number of features that are particularly advantageous for the diffusion of innovation.

Clarifying Intent and purpose

Clarifying an explicit intent and shared purpose for an organisation can help communicate to individuals what is trying to be achieved by the organisation and, therefore, can identify the gaps between what is and what is needed. Explicitly clarifying the mission or purpose or an organisation can provide autonomy and permission for individuals and team to act, especially if it is followed up with action and resources.

Developing explicit learning goals for an organisation can take this a step further, since it forces the organisation to explicitly state its current knowledge and skills gaps, which prioritises the receptivity for certain types of innovations, makes assumptions explicit, and signals externally to those who have relevant knowledge and innovations to diffuse. It also signals internally that it is acceptable for individuals and teams to not to know everything, which promotes a growth mentality.

Box 7.4. Defining an explicit shared purpose for an organisation

The French Innovation Manifesto (Secretariat-General for Government Modernisation, 2017[32])

In 2017, the French Government Secretariat-General for Government Modernisation's (SGMAP), now Interministerial Directorate for Public Transformation (DITP) and the Interministerial Directorate of Digital and the State Information and Communication System (DINSIC), developed a *French manifesto for public sector innovation*.

It has become a catalyst for efforts to develop new approaches to public policy. It was introduced during a period of proliferation of initiatives within the administrations, at the national level as well as local, dealing with complexity and innovation. The manifesto served as an overarching, legitimizing signal for these efforts, a central message clarifying the purpose and intent of innovation.

The Manifesto referenced five challenges to take diffusion of innovation to a new level:

- Develop and disseminate innovations of value to the greatest number of people
- Encourage the innovative capacity of the five million French civil servants
- Opening public sector to civic engagement
- Make humans and computers work together
- Transform the work format of the public sector

Infrastructure and Processes

If diffusion for innovation is something that cannot be turned on and off, it implies that there needs to be some infrastructure and processes supporting it.

A look at other core corporate processes such as human resource management, financial management, and procurement is telling. These are also processes that are often distributed, where staff from across the organisation may be expected to play some role, but where there is generally some degree of coordination or guidance from the centre.

Learning, diffusion and innovation will happen in a decentralised fashion, but that does not mean that there will not need to be some guidance or support for them. And while many organisations have formal learning and development programs, it should be noted that learning for innovation will tend to be more emergent than regular training, and may need to be supported differently.

Learning and innovation may both be unpredictable but that does not mean they are completely free-flowing or serendipitous events.

The appropriate mix of infrastructure and processes to support diffusion and innovation will vary greatly, as it does for other corporate functions. However, if diffusion for innovation is valued, if it is seen as important not only for how the organisation will get better at what it does, but also for how it will meet new needs and solve problems (known or unknown), then this importance will have to be reflected in the organisation's structure, its systems, and its processes.

Exploiting structures created by others

Whether through deliberate and ongoing improvement, top-down direction, or via other mechanisms, the structures within an organisation change. These include procurement pathways, hiring mechanisms, performance reporting, technology, communication channels, organisational structures, and others. For instance, through a top-down directed mission or crisis, an additional path for procurement may be established in order to deliver quickly on a top political priority. On its own, this structure may not have been created or it may have been created more slowly. Attention should be paid to how these structures are changing and what other kinds of diffusion and innovation they enable. Oftentimes, innovation is about removing constraints and while this may have occurred for a different purpose, the additional flexibility may be leveraged for innovation or new types of diffusion. In some cases, additional clarity or constraints may also provide an opportunity for innovation. For instance, a new hiring procedure may provide a legitimate path within the organisation that can be leveraged in a new way to build new innovation capabilities and networks. Attention should be paid to how the structures within an organisation are changing and what new possibilities the changes enable.

Urgency and anchoring

One way of creating demand for diffusing innovation is to leverage urgency around a problem that people within or among organisations already cares about. Action-forcing events, public pressure, or policy agendas can be leveraged to create the impetus for sharing and diffusion.

Box 7.5. Urgency and anchoring in practice

SKL Matematics (Thalin and Berr, 2018[33])

SKL Matematics PISA 2015 project in Sweden occurred between 2012 and 2016. The aim of the initiative was to improve pupil's scores in PISA mathematics scores in 2015, compared to PISA 2009. The effort meant involving four levels stakeholders: politicians, the administration, rectors and teachers and the team leveraged the urgency of the upcoming 2015 PISA test as well as anchoring in a topic valued by stakeholders (education). The project involved the mobilization of "working networks." The method was developed from SKL's experience of participating in earlier networking projects such as Albatross (1997 - 1999) and Attractive school (2001 - 2006). A mathematical development project initially involved 7 municipalities. As a condition of their early participation, each of the 7 municipalities agreed to mentor 7 other municipalities in the development project, who each, in turn, agreed to mentor 7 others. This mentoring method enabled the spread of the initial investment to all municipalities over a short time.

Behaviour modelling

As discussed, exploratory learning involves a degree of questioning and challenge. Innovation is about challenging the status quo, which is dependent on how leaders

(both in the sense of positional authority and those who lead in doing new things and who show what is possible) model these behaviours.

A leader who supports diffusion and innovation will create an example encouraging others to explore and try new things.

Some of those behaviours, adapted from (OECD, 2016[10]) include:

- Sharing vulnerabilities, including being able to admit ignorance changing course even though it may be interpreted as having made a mistake
- Reframing failures as opportunities to learn and being explicit about where mistakes can be made and where they will not be tolerated.
- Questioning and listening to employees, prompting dialogue and debate
- Recruiting, hiring and rewarding those with exploratory and growth attitudes. Instead of focusing on financial regards for individuals, they should focus on new opportunities, autonomy, access and resources for projects.
- Learning and investing in one's own education, demonstrating the seeking out of new ideas and knowledge
- Such leadership may be in tension with other paradigms or beliefs about leadership which emphasize being confident, bold, and unwavering. There may need to be concerted efforts to provide leaders with the tools, confidence and comfort that they need to model these behaviours.

Passive learning

(Clark and Mayer, 2008[34]) would advise against focussing entirely on 'learning by doing' and that 'learning by viewing' or more passive learning (e.g. study visits, shadowing or lectures) is also important. Their distinction is relevant to learning for innovation in that they note that learning by doing can involve a heavier cognitive load, meaning there is less capacity for integrating the information into long-term memory. Innovation is associated with learning by doing, which hints at the need for opportunities for reflection and for consideration separate to the doing. It should not be assumed people will automatically be able to make the most of the learning they could gain from direct experience with innovation; there also needs to be revisiting, a chance to organise and integrate the new information with existing knowledge.

Unlearning

Diffusion for innovation obviously requires learning, the acquisition and integration of new facts, new theories and new understandings. But unlearning – the act of challenging or removing old knowledge – is also an important channel, as it creates space and acceptance for diffusion.

Without a de-emphasis or a 'forgetting' of things previously known or learnt, it may be difficult for an organisation to innovate and to 'move on'. Forgetting happens in any organisation despite good intentions with knowledge management, codifying lessons, evaluations, and succession planning. However unlearning will need to be a more deliberate process.

Purposefully suppressing or phasing out particular ideas or knowledge in an interconnected world may be problematic or difficult. Reinforcing of new knowledge and of new ways of doing things may often be the most practical way of encouraging unlearning, backed up changes to processes and links to performance frameworks. This approach is unlikely to encourage an appreciation of different forms of knowledge however, as it may potentially just exchange one dominant 'truth' with another.

Staff mobility and turnover

Individual and organisational diffusion, especially practice diffusion, can be enhanced by staff mobility. Temporary movement of staff from one agency to another can help staff gain new experiences, provide access to new skills, build horizontal relationships, and help in building a broader understanding of their work and the work environment. It can also expose staff to different ways of approaching innovation. Such learning and diffusion can be enhanced through formal secondment initiatives with other public sector agencies or with organisations outside of the public sector.

Staff turnover can also assist in learning for organisations. New employees can bring in new perspectives and skills. They may also find it easier to adopt the new ways of working or thinking that an organisation is seeking to adopt. Organisations may be prone to "generations" of staff who were hired at the same time, endured a challenging but bonding experience together, or experienced the same political and strategic initiatives together. While this can enhance relationships among this group, which can lead to trust and consensus, the organisation may come to lack a diversity of thought and perspective. Staff mobility, turnover, and/or reorganisation can diffuse into the organisation more lessons, expertise, and skills in addition to testing the organisational consensus of what is really known or understood.

Innovation fellowships and residencies have also been leveraged to bring in, on a fixed term basis, individuals or teams with specialised skills from outside of public sector organisations. These "tours of duty" can not only diffuse practices but also expose public sector staff to new perspectives on the role of innovation in an organisation.

However, as discussed, innovation and diffusion can require previous experience. Losing long-term staff has risks of losing valuable corporate memory and previous lessons. In some cases, an organisation can try to capture such lessons in corporate systems to share with other employees, but as mentioned previously, this knowledge is difficult to capture.

Box 7.6. Internal staff exchanges

Canada's Free Agents (CFA) program (OECD, 2018[35])

The Canada Free Agents pilot is a new model for internal talent mobility that offers federal public servants the autonomy to select work that matches their skills and interests and allows them to make contributions that they find meaningful across the Public Service. It also supports managers looking to rapidly and easily acquire top talent with emerging and core skills in order to support their short-term project needs.

As of October 2018, there were 67 Free Agents mainly located in central government in Ottawa as well as regions across the country.

After applicants are successful in the CFA selection process, they find their first assignment and are then deployed to one of the three home departments that manage administration of the program. Free Agents work on assignments across the Federal Public Service that vary in length (generally between 6-12 months) and organization (100+ federal organizations) with all details outlined in an agreement. Free Agents have access to far-reaching networks with broad skill sets and opportunities for learning and development. They are supported by a Talent Manager who provides career advice and assists them in identifying assignments. After their assignments, Free Agents are eligible for promotions based on their experience on assignment.

Not only does the program offer flexible workforce mobilisation, but also serves as a way to share practices and expose the civil service to new perspectives and knowledge within the organisation.

In-project reflection

Diffusion for innovation needs built-in processes for reflection about what was learnt along the way. In-project reflection, both internally an externally, not only provides information, insights, ideas, and solutions to others, but it can also serve as a valuable project feedback loop to identify early issues, build project exposure and consensus with project stakeholders, build a base of knowledge or evidence around the efficacy of a new process, provide team members with a tangible sense of momentum at early stages of an ambiguous innovation journey and identify systemic and organisational implications if the project scales beyond its current scope.

Box 7.7. Ritualised in-project reflection

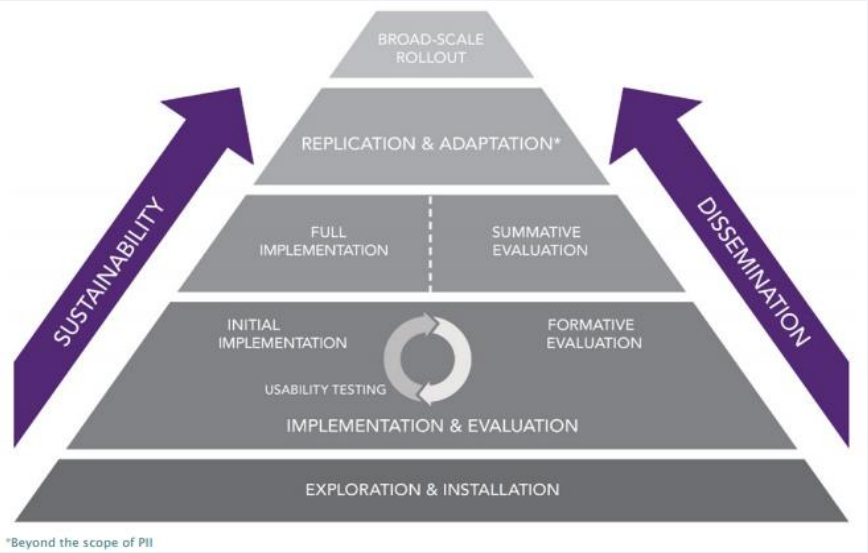
The PII Approach: Building Implementation and Evaluation Capacity in Child Welfare (Permanency Innovations Initiative Training and Technical Assistance Project and Permanency Innovations Initiative Evaluation Team, 2013[36])

Permanency Innovation Initiative was a 5 year initiative of the United States Department of Health and Human Services' Administration for Children and Families that included various grantees in the field of child welfare policy, aiming at developing strategies for their consistent implementation. Its explicit goals were "build or enhance the capacity of child welfare agencies to develop, implement, and evaluate research-informed innovations and adapted ESIs and to provide evidence about program effectiveness."

It is an example of a structured, ritualised practice of diffusion and a focus on sharing not only results but also contextual knowledge of the structures and feedback loops that enable sustainability of a policy implementation. Sustainability required that training, monitoring, and data systems were in place and running during and after the project. The project teams also considered procedures, financial means and political

commitment, and other structural changes fundamental to the sustainability of services developed in the project.

Figure 7.2. PII Approach



Source: (Permanency Innovations Initiative Training and Technical Assistance Project and Permanency Innovations Initiative Evaluation Team, 2013[36])

Each PII partner managed its own dissemination effort, guided by a project-wide dissemination plan and supported by the PII Dissemination Committee (comprising of representatives from each grantee organisation) and a dissemination strategist who worked with the various partners involved. The Dissemination Committee meet monthly to share how each PII partner was moving information about the project to a variety of target audiences, such as program administrators, court personnel, recipients of child welfare services, funders, advocacy organizations, policymakers, service providers, and researchers.

The attention paid to sustainability and sharing meant an extra effort of self-awareness and diffusion at various stages of the project. In the context of the PII program, it went hand-in-hand with a strong will to ensure, secure and monitor the dissemination activity of the projects and their results.

Using the language of innovation

Translations and common language for innovation

The theoretical problems of language translation have for a long time been the focus of those concerned with the dissemination of knowledge. The so-called "Sapir Whorf" hypothesis postulates that language informs thought and is not a passive reflection. It raises very practical questions about how the language (vocabulary, idiomatic

expressions, etc.) we use to describe innovation, related practices, and exemplary projects may bias our own understanding as well as that of others during diffusion. It is a foundational cognitive concern, before even the question of descriptive fidelity to a cultural or organisational context.

The emergence of a newspeak of innovation, or even a lexicon specific to the field of innovation in administration, often expressed in a relatively shared "international English", has made it possible to create viable language channels for communication on these emerging topics. However, there will always be a loss of contextual richness in exchange for having a common language.

Further, a new language around innovation can signal novelty and can serve to break entrained thought patterns. However, if the cognitive load of understanding and interpreting this new language is too high, the learner may reject the language, as well as those who delivered it, shrinking the circle of those who understand it. In extreme cases, the innovators may be classified as condescending elitists, too caught up in their own theories and conceptual thought experiments. Consequently, their knowledge of innovation may fail to diffuse beyond the “in-group.” This risk is especially high among public sector staff whose attention and learning capacity is often stretched thin. Therefore, building consensus and shared understanding around the language we use to describe innovation, it extremely important for its diffusion.

Performative speeches and illocution

As Victor Hugo said, “Nothing is more powerful than an idea whose time has come,” except when it’s time has not come.

Speeches, rhetoric, and the use of the “illocutionary force” of language, with its power of institution and its ability to create a reality (following the classic example of "I declare this session open"), is a powerful tool in the world of public administration, provided that it is supported by social convention, social and psychological conditions in the organisation, and a belief in the institutional role of the person who uses it.

More generally, the repetition of slogans, mottos, and keywords can create a climate of positive social value for innovation, or even set it up as a norm. These mechanisms may be of particular value in directed, top-down innovation, but may also be created and spread bottom-up, through communities of practice or professional networks. A recent example is the title chosen for the December 2017 Observatory for Public Sector Innovation conference: "Innovation in public administration, the new normal." Illocutions can be powerful promises and form the basis of a movement, but there is always a risk of incantation if the new normal does not happen of if the illocution was declared before conditions were ripe. In this case, instead of creating a movement, it can sound hollow and non-credible.

More formal examples are also emerging in the form of declarations and manifestos of public sector innovation. This mechanism aims to create a "self-fulfilling prophecy", and has helped to highlight, in the agenda of decision-makers, the idea of innovation in administration. The intent in this case is to create a movement and legitimising reference innovation, thereby facilitating its diffusion. Again, the timing and social conditions must be ripe or the illocution will miss the mark.

Metaphors and public administration innovation

> *Our ability to link and blend patterns in unusual ways, known as conceptual blending, gives us ability to adapt rapidly to changing context and critically to innovate as well as to use that most powerful tool of explanation, knowledge transfer and teaching—metaphor…If humans are pattern processors, then understanding people will involve the management of those patterns, both stimulating relevant ones to the forefront of the long term memory, disrupting established patterns to create the preconditions for innovation, and increasing the number of patterns available and their contextual relevance for decision makers. (Snowden, 2010[37])*

The use of metaphors is not neutral. Depending on the schools of thought of the authors, they can reveal specific conceptions of the world, or even reveal the functioning of the brain and the cultures and places from which they were drawn. Therefore, metaphors are best used in situations where the actors share at least some common experiences. Metaphors can also be seen as reflecting objective, material similarities between phenomena that are actually quite dissimilar.

Metaphors and analogies are more and more frequent: public administration as a body (with a head and functional arms), dissemination as the action of a virus, digital transformation as a social revolution, ecosystems as a market structure, etc.

An analogy frequently used in the world of "labs" and other structures to spread innovation within an administrative bodies, is that of the "startup." It contains the idea that the development of an innovative project could have similarities with the creation of a more or less disruptive company: reduced team initially, need of agility, questioning of certain existing frameworks, need of sponsorship and mentoring, creation of an environment cultural and organizational aspects, the promotion of the project leader are common elements often put forward. It also has a socially rewarding role, as we still attach a presumption of leadership, vision and a form of courage to the figure of the entrepreneur (so long as entrepreneurs are viewed as cultural heroes).

Novelty, by definition, is something unknown, so it is expected that words may not exist for it yet. Metaphors can be powerful for diffusion and consensus building around emergent phenomenon, innovations, or innovative practices, including those who have not shared a direct experience. When used intentionally and sensitively with respect to the cultural context, metaphors can frame phenomena around already known (and usually positive) experience so they can be used strategically, to shape the understanding around nascent patterns. However, there is a risk of stretching a metaphor too far by framing the innovation around the entire reference experience, thereby reducing the richness and true novelty of the innovation.

Narratives

Narrative remains a key mechanism of contextual learning and knowledge transfer within an organisation.

> *If humans are pattern processors, then understanding people will involve the management of those patterns, both stimulating relevant ones to the forefront of the long term memory, disrupting established patterns to create the*

preconditions for innovation, and increasing the number of patterns available and their contextual relevance for decision makers. (Snowden, 2010[37])

The stories told amongst peers and team members are indicative of the shared culture or an organisation. Narratives can not only be used to understand the culture of a team or organisation for the purpose of testing the fit of an innovation (whether the innovation is likely to be accepted or rejected), they can also be used to introduce and build exposure to an innovation.

Keeping space for the questions

There is a natural tendency for people and organisations is to see a problem and act. A more deliberate approach to a complex, systemic problem, assuming it falls into that domain, is to avoid jumping to the conclusion that the relationship between cause and effect is clear. Processes that can allow increased exploration of the nature of the problem before requiring action, investment and the elimination of other options offer a better chance for the problem to be understood. They also increase the demand for diffusion if the team is asking itself or others what is known, not known, or assumed about the problem or context. Assigning to a team or organisation a person who has a system view and is responsible as a process owner, not a subject expert, will help keep this space open, as will choosing a methodology that preferences divergent or exploratory innovation methods.

Creating environments of trust

Beyond the codified and explicit knowledge sharing that might be required of public sector staff, such as for records retention schedules and for project reporting and accounting, sharing of tacit, contextual knowledge, will best be served by an environment of trust. Diffusion of contextual knowledge and practice is a gift given by the knowledge holder and practice expert. Not only does this diffusion depend on the credibility of knowledge holder or practice expert, but also on the relationship(s) between those individuals and teams. The receiver may question the motive of the provider and determine whether the person has his or her interests in mind, which can impact the level of trust in the relationship and subsequently the probability of diffusion.

Innovations by their nature involve the creation of new information and unexpected results, some of which may conflict with current political interests, accepted paradigms, and organisational performance goals and incentives. Diffusion of innovations in this environment requires trust between individuals, groups, and the larger organisation. Some organisational practices that can facilitate this include:

- Incentivising and facilitating the sharing of data, information, and personal contacts throughout the organisation so that data hoarding does not create internal information asymmetries.
- Communicating unfavourable or unpopular news quickly, even if it is incomplete, signalling to others that it is expected.
- Being explicit about the environments in which confidentiality can and will be maintained

- Seeking to understand the context in which bad results or behaviours are exhibited and taking corrective actions not only against individuals and teams but also to the organisational procedures and systems involved.
- Create environments—physical spaces, activities as part of projects, items on meeting agendas, etc.—for the discussion of failures and for project critique—thereby ritualising the practice as a normal and expected behaviour.

Innovation Labs

The public administration innovation labs have multiple functions. They often have the explicit and initial purpose of providing an environment conducive to innovation within a public administration or for the benefit of several functions: allowing time, resources, and focus to be given to key projects or topics, connecting experts, mentors, resources in new ways, and creating in experimental spaces for the testing solutions, practices, and approaches outside of the normal rules, among others.

Innovation labs are often protected areas where intense creativity exists, in comparison with the administration that sponsors them. They represent the equivalent of start-up incubators that some large private groups create to generate innovation that their internal mode of operation does not allow. Public sector innovation labs are faced with interesting challenges that affect their ability to effectively diffuse an innovation in parent administrations or partners:

- their design often follows the model of the enclave: the mechanisms of transfer of innovation to the real world outside are not sufficiently studied
- the emphasis on scalability and replicability of projects is sometimes insufficient, inducing an original bias design in many projects, often too much time intensive or structure free to be replicated
- the lack of “runway”: insufficient information, not enough leadership, lack of internal sponsorship, awareness-raising and preparation of the external administration that does not allow easy reception of innovations when they are validated

In order to avoid this slow erosion of legitimacy and insulation of innovation skills and expertise within a lab, more effort is needed in spreading the lab practice or involving external staff earlier in lab and/or innovation project cycles.

Chapter 8. Remaining Issues

This is an alpha version of a study – i.e. it has been developed to seek input and test various ideas and features. In that light, feedback is sought about the report and where it may need to be improved, where there may be assumptions or arguments that should be challenged, and whether the report provides a sufficient basis for providing guidance to public sector organisations.

Some possible questions for consideration include:

- What might be missing?
- Is there anything that does not fit with the lived experience of innovation in the public sector?
- Does the report adequately provide an overview of the relevant factors for diffusion for innovation?
- Are there additional (or better) examples or case studies that could be used to illustrate the process of identifying problems and learning for innovation?

Feedback can be provided to the Observatory of Public Sector Innovation team at opsi@oecd.org. This will contribute to a beta version of the report which will then be tested with representatives from OECD member countries and interested public servants

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