5 Fostering place-based regional innovation policy: The role of (policy) learning

Complexity and uncertainty are core features of most policymaking today and innovation policies are no different. This chapter describes and analyses how policy learning can address these challenges. It reviews two core learning mechanisms – learning through interaction and learning through experimentation – and discusses their application to innovation-led regional development and policies. The chapter also explores how policy learning can work in less-developed regions and the barriers to overcome for successful network implementation and experimental governance in regions with low institutional capacity. It concludes by considering how to preserve and embed the impact of learning and experimentation over time.

Introduction

Innovation policy approaches characterised by top-down government approaches have often failed to produce tangible results. The reasons for the failures of such policies are well known and include the risk of capture by vested interests, lack of information on the economy, and strong information asymmetry between public and private actors, as well as a lack of public sector capability for effective policymaking (Dutz et al., 2014[1]).

A more appropriate and effective approach to innovation-led economic development policies involves experimentation, monitoring, learning and adaptation, all of which need to occur in a context of international openness to knowledge, trade, investment and competition. Such an approach also rests on close co-operation with private and non-governmental actors, which are often better placed than governments to identify barriers to innovation and can point to opportunities for productive investment or policy action.

The policy learning and experimentation approach rests on strong monitoring and evaluation, which need to be embodied in programmes and policies from the outset (Morgan, 2018[2]). Policy learning includes provisional goal-setting and revisions based on lessons drawn from experiences and from "learning by doing". The ability of actors to learn from success and failure determines the success of the approach.

A fundamental challenge in policy learning and experimentation is determining the underlying social and institutional criteria necessary to make policy learning successful. A second related challenge is whether and how policy learning and experimentalist approaches are applicable across all types of regions. Success might depend on the ability of local leaders to form collaborative arrangements allowing public sector institutions to work with the private sector in devising experimental approaches. The ability to do so often depends on the willingness of policymakers to enhance their capacity to lead and work with change.

This chapter provides an overview of the role of policy learning in innovation-led regional development to make policy governance more agile, legitimate and tailored to the needs of each local context. Learning matters for innovation policy because policymakers face a complex and continuously evolving innovation system with insufficient evidence of how to most effectively influence it.

While the theoretical importance of policy learning is widely acknowledged, its implementation is challenging in practice. The challenges that need to be overcome to increase policy experimentation are multi-faceted, ranging from questions of commitment to learning by monitoring on the part of ruling politicians and their public sector managers to an organisation's technical capacity for learning by monitoring. To adopt and adapt to the learning mechanisms described in this chapter – collaboration and exchange as well as greater experimentation – policymakers need different types and combinations of skills, which might not always be easy to acquire.

Questions remain about the applicability of policy learning in all types of regions. Not all learning mechanisms are applicable to all regional contexts. In particular, lagging regions – paradoxically those most in need of learning – face a range of barriers to learning because of their institutional weaknesses in terms of governance and capacity. One way to support these regions is through specific learning mechanisms, such as learning networks. A second mechanism is to carefully balance top-down policies with locally led policy efforts and to experiment with existing governance arrangements to allow actors at the margin to be part of the policy process.

Governments that have successfully embraced a culture of learning not only initiate collaboration and experiment with new ideas and processes but they also make sure the resulting learning and evidence are used in decision-making, scaling-up successful ideas while continuing to iterate and experiment. Ensuring that learning is not a one-off engagement but becomes a longer-term process can also help change the set goals if they are not the right ones.

Finally, many innovation policy challenges are dispersed among networks formed by governments, innovators, private platforms and users. This may mean leaving space for people to experiment and test

new solutions by themselves and to find ways of exchange and collaboration that help governments make use of them. The adoption of experimental governance as a policy approach to local and regional development will not induce greater involvement by citizens and civil society (including business networks and industry associations) on its own. Rather, it depends on the ability of those regions and localities to foster the creation of more networked and collaborative forms of governance in order to succeed. While the adoption of these forms of governance does not in itself guarantee the success of the experimental approach, many of the features of networked and collaborative governance provide the pre-conditions under which experimental governance is more likely to succeed.

This chapter and the whole report draw from a series of expert workshops on "What works in innovation policy? New insights for regions and cities" organised by the OECD and the European Commission (EC). For each workshop, experts provided background papers that, together with the discussion during the workshop, form the basis for this report:

- Fostering innovation in less-developed regions, with papers by Slavo Radošević (2018[3]) and Lena Tsipouri (2018[4]).
- Building, embedding and reshaping global value chains (GVCs), with papers by Riccardo Crescenzi and Oliver Harman (2018[5]) and Sandrine Labory and Patrizio Bianchi (2018[6]).
- Developing strategies for industrial transition, with papers by David Audretsch (2018[7]) and Charles Wessner and Thomas Howell (2018[8]).
- Managing disruptive technologies, with papers by Pantelis Koutroumpis and François Lafond (2018[9]) and Jennifer Clark (2018[10]).
- Experimental governance, with papers by Kevin Morgan (2018[2]) and David Wolfe (2018[11]).

The role of policy learning in innovation and innovation policy

The main goal of innovation policy is to support experimentation with new technologies, products, processes and business models, and accelerate their diffusion throughout economies and societies. However, innovation systems are inherently non-linear. Innovation activities can be both a consequence and a prerequisite for further innovation and thus are difficult to chart. Actors, institutions and policies interact in multiple and interdependent ways, making predictions about policy outcomes and funding allocation a challenging exercise.

In addition to the inherent uncertainty and complexity of innovation, a number of trends are currently reshaping innovation systems, with significant impacts on society. Such trends include the rise of GVCs, the globalisation of knowledge production beyond OECD countries, the diffusion of new and disruptive technologies (such as blockchain technology and artificial intelligence [AI]), increased market concentration and changing dynamics between start-ups and corporations (OECD, 2019[12]). Many of these trends also give rise to new challenges, such as the transformation of work or climate change, which will require innovative solutions.

In parallel, emerging technologies are also changing the way governments work and interact with their policy subjects and partners. Public and private domains are increasingly interrelated, not least due to increased interconnectivity. To effectively manage societal and technology changes, governments need to evolve and take an active role in the change process. They need to understand the impact of technology and innovation in order to respond to the changing expectations of citizens, companies and innovators.

Successfully navigating innovation in complex and unknown landscapes requires focusing on the process of learning how new knowledge, new technologies and new organisational structures are created, distributed and used in specific areas. Learning can be defined as a collective process shaped by the

existing structure of production, by organisations and by institutions (Heikkila and Gerlak, 2013[13]). Learning matters because the characteristics of any existing learning system are central to questions of higher productivity and inclusive growth (Cooke, Uranga and Etxebarria, 1997[14]).

Learning requires the ability to self-monitor and learn from past successes and failures – in other words, to learn how to learn. The concept of (policy) learning is closely linked to the notion of reflexivity. The learning capacity of individuals, organisations, and institutions determines their ability to monitor their own progress in adapting to ongoing changes in the environment. As such, policy learning is fundamental to cope with the need for constant innovation (Box 5.1).

Box 5.1. What is policy learning and how does it take place?

Policy learning is closely linked to the notion of experimentation

Policy learning implies a "change in thinking" that occurs through trial-and-error. Policy learning is directed towards using policy tools to resolve a policy issue differently or achieving specific goals with new ways of acting. Policy learning must include "policy forgetting" as part of the learning process. This means being able to abandon policy approaches that are outdated, no longer effective or may lead to counterproductive results. As is the case with innovation processes, policy learning is cumulative because policymakers build on their past knowledge and competencies to adapt to changing circumstances.

Policy learning takes place through processes of organisational learning

Policy learning can occur inside individual organisations, within organisations in the same network or systems, or across various organisations in different networks or systems. The networked dimension of policy learning adds a considerable degree of complexity to the learning process, as it must extend across the boundaries of several different organisations – including public and private ones – at more than one level of political jurisdiction.

Monitoring and evaluation is key for policy learning to be sustained over time

Learning by monitoring ensures that the knowledge derived through trying out new instruments, actions or processes is shared among all actors involved. In this way, the gains from learning are well distributed. Effective monitoring and evaluation require a careful combination of making sense of shifts in the wider context (politics, environment, social, etc.), monitoring relationships and behaviours of diverse actors, weighting up different sources of evidence and being open to unexpected results.

Source: Morgan, K. (2018[2]), "Experimental governance and territorial development", Background Report for an OECD/EC Workshop Series on Broadening Innovation Policy: New Insights for Regions and Cities, OECD, 14 December 2018, Paris; Wolfe, D. (2018[11]), "Experimental governance: Conceptual approaches and practical cases", Background Report for an OECD/EC Workshop Series on Broadening Innovation Policy: New Insights for Regions and Cities, OECD, 14 December 2018, Paris.

Linking policy learning to regional innovation systems

The regional innovation system (RIS) perspective has dominated the debate on regional development for the past two decades and has been used widely as a framework for the design, implementation and evaluation of innovation-based regional policies. A well-known example of its application is the EC's smart specialisation approach, which requires the development of regional innovation strategies as a prerequisite to receiving financing from the European Regional Development Fund (ERDF).

At the heart of the RIS perspective is the assumption that the most innovative regions are those in which the key institutions – firms, their supply chains, governments, universities and civic leaders – are able and willing to work in concert to find joint solutions to common problems (Asheim, 1996[15]; Asheim and Gertler, 2009[16]). One of the assumptions of the RIS approach is that many innovative firms operate within regional networks, interacting with other firms such as suppliers, clients and competitors, with research and development facilities, innovation support agencies, venture capital funds, and local and regional government bodies. Learning matters in all primary dimensions of RIS:

- Processes and policies supporting education and knowledge transfer.
- Arrangements for the governance of innovation.
- The level of investment, especially in research and development (R&D).
- The type of firms and their degree of linkages and communication, including networking, presence or absence of GVCs.

To a large extent, the diffusion of knowledge, information and technologies are transferred through regional channels, alongside national and international ones. Regional authorities have an important role to play to support diffusion processes by offering services and other mechanisms that augment the inter-linkages between all of these actors. A key challenge is to establish the conditions under which local stakeholders can engage in a consultative and interactive fashion with government authorities, as well as how public authorities can learn to collaborate with these actors under a more distributed pattern of authority.

This chapter analyses two important learning mechanisms that cities and regions are using to broaden their innovation policy and ensure that technology and knowledge diffusion reaches all types of region. The first mechanism is called learning through interaction. It focuses on how regional innovation policy can support interactions between a diverse group of actors participating in governance networks for the purpose of sharing information, knowledge and perspectives to achieve and implement more effective solutions to local problems, in particular in situations where solutions lie beyond the capacity of any single actor. The second mechanism focuses on learning through experimentation, which is testing out new ideas and processes at a small scale with new and innovative methods. Learning through experimentation can be applied both to experimentation in governance arrangements to deliver innovation policies as well as experimentation with innovation policy programmes and instruments, and this chapter will look at both.

The two learning mechanisms are closely related and their distinction can sometimes be blurry. Governments need to use both simultaneously to sustain learning. Networked and collaborative governance arrangements facilitate the flow of information, knowledge and understanding among participants within governance networks, which in turn is critical for the effective implementation of experimental governance.

Learning through interaction: Networked and collaborative governance

A shift has taken place from the post-World War II era of hierarchical and bureaucratic state-managed development models towards more distributed patterns of authority, which involve greater levels of collaboration and networking. Responding to this shift, policymakers are experimenting with novel ways of collaborating that bring together diverse stakeholder groups and provide more integrated and holistic responses. This section clarifies the concept of networked and collaborative governance and provides examples of its application in subnational innovation policy.

The paradigm of networked and collaborative governance

Taking a networked and collaborative approach to public governance implies increased reliance on (typically more informal) networks as a way to mobilise and engage citizens and organisations in the

development, implementation and monitoring of public policy. Governments continue to establish the basic rules governing the operation of the economy but place greater emphasis on the assignment of responsibility to a wide range of associative partners through the mechanisms of voice and consultation (Morgan, 2018[2]). The appeal of the networked approach is that it places a greater degree of responsibility for outcomes on firms and organisations that will either enjoy the fruits of their success or live with the consequences of their failure.

Implementing networked governance does not come without challenges. One challenge for government agencies operating in a networked manner is to establish the conditions under which actors at the regional and community levels can engage in a consultative and interactive fashion with government authorities. Network structures depend on informal exchanges based on interpersonal relationships far more than contractual arrangements do. In such structures, leadership primarily plays a facilitator or broker role. In addition, for the network to be effective, members must trust each other to work to their mutual benefit. Finally, governments also need to understand and be able to work with a key driver of more networked forms of governance – technology (see Box 5.2).

Box 5.2. The rise of networked governance

The rise of network governance and an increased reliance on collaboration points to a more fundamental transformation and proliferation of the network paradigm. The main driver in the emergence of networked governance is technology, primarily in the form of new information and communication technologies.

The rise of networked governance changes not only the nature of public discourse and opinion formation but also the form and content of concrete decision-making, policy development and implementation. Some scholars even argue that nation-states are being replaced by network states. This is defined as states embedded in local, regional and global networks of governance considered as necessary to meet the challenges of increased complexity, connectedness and globalisation (Bang and Esmark, 2009[17]). Such governance networks vary considerably in terms of the level of formalisation, stability and inclusiveness, but a common characteristic is the involvement of non-state actors from the private and third sector as stakeholders and partners in policy management and implementation.

Following the rise of networked governance, governments must engage in new policy design and implementation and demonstrate dynamic capabilities. They need to understand the impact of technology, as well as the changing expectations of citizens, companies and innovators. This includes making better use of behavioural insights and design thinking, as well as acquiring the skills and organisational capacities necessary for the public sector to innovate.

Source: Bang, H. and A. Esmark (2009[17]), "Good governance in network society: Reconfiguring the political from politics to policy", *Administrative Theory & Praxis*, Vol. 31/1, pp. 7-37; OECD (2018[18]), *OECD Science, Technology and Innovation Outlook 2018: Adapting to Technological and Societal Disruption*, https://dx.doi.org/10.1787/sti_in_outlook-2018-en.

Regional networks function as innovation intermediaries

Regional networks often act as informal multi-stakeholder platforms. For example, having the right networks in place played a critical role in the success of Silicon Valley when compared to Greater Los Angeles. The networks in Silicon Valley were not only enabling a wide range of relevant stakeholders to talk, they were also talking about more relevant factors than in Greater Los Angeles. In the case of the Silicon Valley, networks were talking about the right things, focusing on high-skill, knowledge-based activities, while the networks in Greater Los Angeles were talking about less forward-looking topics such

as tax and cost strategies for restoring low-wage light mass manufacturing and logistics in the region (Storper et al., 2015[19]).

Strategic interactions through networks are critical for innovation. Policymakers can only elicit useful information from the private sector if engaged in an ongoing relationship with other local agents. Rodrik draws on this to argue that the best way to think about innovation policy is in terms of a process of discovery by the government as well as by the private sector (Rodrik, 2004[20]). Engaging the private sector in innovation activities can be facilitated through regional innovation intermediaries that connect companies to external networks and resources (Nambisan, Bacon and Throckmorton, 2012[21]). The Ontario Network of Entrepreneurs is an example of a network that has steadily evolved over the past two decades. It illustrates how regional governments can experiment with innovation policy design by drawing upon the knowledge and insights of innovation intermediaries (Box 5.3).

Box 5.3. The Ontario Network of Entrepreneurs, Canada

The Ontario Network of Entrepreneurs (ONE) provides Ontario-based start-ups and small businesses with a range of services and programming to help them start and grow their business. The network operates through 14 Regional Innovation Centres (RICs) located across the province. Each RIC is a not-for-profit organisation and offers a broad array of resources to local entrepreneurial communities. Their services include educational programmes to enhance entrepreneurial skills and talent development, advisory services that offer coaching and mentorship opportunities, as well as industry-academic programmes to encourage knowledge exchange and resource sharing.

The ONE programme originated as the Biotechnology Cluster Program (BCIP) in 2003. However, before it was fully implemented, there was a political change in the provincial government and, in 2005, BCIP was replaced with the Ontario Commercialization Network (OCN). While the network's overall objectives were established, the commercialisation framework and its service delivery model remained fragmented. A government-initiated programme review in 2008 helped establish a clearer vision for the network and transformed the OCN into the ONE.

What makes the ONE remarkable when it comes to innovation is its focus on engaging local research and innovation actors and encouraging them to link their activities to regional economic development. Member organisations of the ONE hold "regional alliance" meetings with their clients (local firms) to provide advice and guidance on what services best meet the needs of local innovators and entrepreneurs. These regional alliance meetings also help identify and build a pipeline of innovative companies supporting the economic activities that form the region's core strength.

Source: Wolfe, D. (2018[11]), "Experimental governance: Conceptual approaches and practical cases", Background Report for an OECD/EC Workshop Series on Broadening Innovation Policy: New Insights for Regions and Cities, OECD, 14 December 2018, Paris.

The experience of the ONE programme provides an important illustration of innovative policy evolution and experimentalist governance. Policy evolution did not happen arbitrarily. Rather, it occurred through learning based on inputs from a variety of perspectives and "on-the-ground" participants (Bradford and Wolfe, 2013[22]). The network further illustrates that priorities, rationales and instruments change over time and that all actors learn over time, underscoring the inherently non-linear and systemic nature of knowledge exchange for innovation.

Cities provide important networking platforms for innovation

Cities can act as local policy promoters, initiating and inviting other actors to participate and allocate economic resources, or taking active participation in raising funding in areas such as urban planning, transport and education (Kronsell and Mukhtar-Landgren, 2018[23]). Cities can also participate in policymaking as enablers, without an explicit leading role. In this case, they can open space for other actors by enabling access to resources (e.g. providing expertise), by fostering collaboration (e.g. organising meet-ups and steering groups) and by defining local strategies and plans (e.g. urban branding and creating shared values). The Newcastle City Futures Initiative offers an example. Here, the city council promotes city innovation activities following networked forms of governance (Box 5.4).

Box 5.4. Newcastle City Futures Initiative, United Kingdom

In 2015, the Newcastle City Council established the City Futures Development Group, bringing together local authorities, universities, civil society organisations and the private sector to think about the city's long-term prospects and innovation needs. The group identifies growth opportunities, multi-partner and multi-sector projects, public and business engagement on city futures, and new research projects.

Pursuing a multi-stakeholders partnership enables citizen engagement and creation of a shared vision, and provides a means to design interventions that will positively contribute to the life and development of Newcastle. Larger corporate partners assist small- and medium-sized enterprises (SMEs) through collaborative project work including the use of co-designed demonstrator projects that have a direct impact on the city and create a "testbed city".

City Futures projects are identified by the group's partners, working together. Projects must address multiple sectors, depend on multi-partner involvement and use digital visualisation and other engagement methods. Selected projects are presented to the City Futures Development Group for comment and endorsement.

The Newcastle City Council is a partner in the City Futures Initiative but is not directly involved in all of the experimental projects beneath its umbrella. In some projects, the city council also serves a third role, that of facilitator or enabler, by providing expertise and urban branding.

Source: Morgan, K. (2018[2]), "Experimental governance and territorial development", Background Report for an OECD/EC Workshop Series on Broadening Innovation Policy: New Insights for Regions and Cities, OECD, 14 December 2018, Paris.

Digital technologies play a major role in advancing networked governance

Digital technologies can make policy implementation more user-centric and facilitate interaction among local stakeholders. By bringing together local agents more easily, digital technologies can enable networked forms of policymaking. Technological developments also open up new possibilities to work with machine-readable information from government and the private sector – so-called open data – which is increasingly becoming an important instrument to break down information gaps across industries and replace intuitive decision-making approaches with data-driven ones (OECD, 2018[24]). A rising trend observed among OECD member and partner countries is using the constellation of policy stakeholders to crowd-source knowledge, promote new forms of partnerships and secure policy co-ownership and co-responsibility. For instance, the government of Mexico leverages open government data to promote transparency and involve citizens to collaboratively solve policy issues (Box 5.5).

Box 5.5. Open Data National Policy, Mexico

Mexico's Open Mexico Network is an open platform for co-operation for the entire public administration. The federal, state and municipal governments co-operate for sharing knowledge, tools and resources to facilitate the effective implementation of the Open Data National Policy.

The Open Data Infrastructure is a group of datasets prioritised by the federal government for release due to its potential contribution to national development goals. The group has been crucial to guide open data disclosure by public institutions.

The Open Data Squads (ODSs) provide technical and regulatory guidance and support from the centre of government to federal and local public institutions. The work of the ODSs has been instrumental to build capacities for data management (e.g. data production, exchange, publication and use) towards greater disclosure on the central portal.

Retos Publicos is an initiative providing incentives for application development. The initiative has been useful to connect developers with public institutions in order to foster collaboration around specific policy issues and sectors. As a result, web and mobile-based platforms and applications were developed by private sector organisations to improve public service delivery or to tackle asymmetries in citizen access to information.

Source: OECD (2018[25]), *Open Government Data in Mexico: The Way Forward*, https://dx.doi.org/10.1787/9789264297944-en; Mexican Government (n.d.[26]), *Open Data National Policy*, https://datos.gob.mx/; Reto México (n.d.[27]), *Homepage*, https://retomexico.org/ (accessed 23 September 2020).

The digital transformation of governance is helping avoid top-down assumptions about citizen and business needs by empowering them to engage with governments. Closer engagement with local agents can inform policymakers about bottlenecks to innovation, and foster collaboration in order to tackle local challenges in a user-driven approach. Estonia is a leading example of how government structures can interact with citizens much more closely through digital technologies, performing much better in this domain than many larger countries.

Box 5.6. Estonia's digital governance strategy

Since the 1990s, Estonia has made remarkable advances in information society development. The main drivers behind this include economic factors, the active role of the public sector, technological competency and socio-cultural factors. The telecommunications and banking sectors were the cornerstones of Estonian information society developments; they were also behind major initiatives dedicated to computer training and awareness-raising. Public sector initiatives have been also crucial in providing a favourable legislative environment, as well as launching necessary infrastructure projects and in implementing innovative e-services.

eGovernment in Estonia started as a long-term effort to develop a functional architecture that could serve as the basis for delivering a wide range of services. These include the Estonian electronic identification card, authorisation and digital signatures. Additional web portals offer the general public, civil servants and entrepreneurs almost 500 different e-services from the national and local governments. Citizens and entrepreneurs benefit immensely from this fully integrated system, as they do not need to complete long applications since all of their data are maintained in the system. Meanwhile, civil servants are freed up from inputting the data from paper documents or cross-checking

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data on different databases, making the system a good example of how the government has simplified the payment system.

Some non-governmental organisations have strongly influenced public sector developments as well. A special case is the digital technologies used for e-residency. E-residency or "virtual residency" gives foreigners global access to Estonian e-services via a state-issued digital identity. The "virtual state" and "virtual residency" have features of nation branding and national reputation, which may help attract investment and create start-ups.

Source: Tsipouri, L. (2018[4]), "Fostering innovation in less-developed (with low institutional capacity)", Background Report for an OECD/EC Workshop Series on Broadening Innovation Policy: New Insights for Regions and Cities, OECD, 22 June 2018, Paris.

The trend of using data to improve public sector performance is evident at the national and local levels of government. For example, in Bristol, United Kingdom, the project Bristol is Open is a collaboration among the local government, universities, local tech communities and the technology, media and telecommunications industry. The project is based on a joint venture between the Bristol City Council and the University of Bristol and draws upon the value of using digital technologies to facilitate multi-stakeholder collaboration and jointly address policy challenges. It promotes user-driven services and policies in the city. An initiative called the Bristol Approach was launched to support citizens working together to pinpoint the necessary knowledge, technology and resources to address problems in the city. Other national and subnational governments have also started to explore the potential of new technologies in improving the quality and efficiency of public service delivery through a bottom-up and engaging approach. However, capacity constraints – be they in terms of human, financial or infrastructure resources – remains a challenge for most governments, especially at the subnational level (OECD, 2019[28]).

The role of networks in regional innovation policy: The Entrepreneurial Discovery Process

Innovation-led regional development in Europe is based on the theory of smart specialisation and was conceived as part of the EC's reformed Cohesion Policy for the 2014-20 programming period. Smart specialisation is a place-based approach in which strategic areas for intervention are identified based on an analysis of the strengths and potential of the economy and an entrepreneurial discovery process (EDP) with wide stakeholder involvement. It is outward-looking and embraces a broad view of innovation including, but not limited to, technology-driven approaches supported by effective monitoring mechanisms.

The European Union (EU) Cohesion Policy supports innovation-led development through regional smart specialisation strategies (S3). With its total budget of EUR 80 billion for the 2014-20 programming period, it belongs to the world's largest regional innovation policy programmes. As a policy concept, smart specialisation was designed with a dual purpose in mind: i) to accelerate agglomeration processes by reducing duplicative regional investments in science and technology; and ii) to encourage regional players, especially regional governments, to stimulate the growth of new exploration and research activities, which are related to existing productive structures (Foray, 2014[29]).

At the heart of the S3 approach is a process of entrepreneurial discovery for innovation and growth (Foray, David and Hall, 2009[30]). The approach puts forth that successful entrepreneurship must combine knowledge about science, technology and engineering with a more fundamental understanding of the competitive dynamics of market opportunities, potential competitors and the financial, managerial and other inputs necessary to make an entrepreneurial venture success. Policy learning occurs through search and experimentation, initiated by the public sector, but strongly supported by entrepreneurs in the region (Asheim, 2012[31])

From the beginning, a commonly accepted definition of the EDP has been lacking (Capello and Kroll, 2016[32]). Bottom-up, firm-led participative processes through which priority areas for research, development and innovation investment would be defined appeared as central in earlier definitions. However, recent approaches argue that an EDP should be built with evidence-based analyses and through the combination of bottom-up and top-down processes that might initially establish fairly broad priorities (Kroll, 2015[33]). Nevertheless, there seems to be agreement that the EDP is meant to prioritise investment based on an inclusive and evidence-based process driven by stakeholder engagement and attention to market dynamics.

One of the major weaknesses of the EDP approach is its lack of regional connectivity. In some cases, the government has dominated the EDP process, leading to questions around whether regional search processes are including actors at the margin and whether the theory is put into practice. Promoting more engagement of regional actors and improving connectivity between agents will need to be considered to make sure that S3 are developed into effective and flexible regional strategies that are built on entrepreneurial dynamics (Radošević, 2018[3]). A key question is whether governments have the right governance mechanisms to build long-lasting broad partnerships with private sector actors. Arguably, the process of smart specialisation has been most successful in the Northern countries, e.g. Sweden, home to high-quality institutions and a long tradition of networked governance. Leveraging multi-stakeholder networks to identify future-oriented priority areas can however also work in moderately innovative regions. The Pomorskie region in Poland provides an example of a well-designed entrepreneurial discovery process within an environment that lacks a legacy of strong collaborative ties (Box 5.7). As a consequence, this was addressed in the EC proposals for the new Cohesion Policy in the post-2020 period where there is a specific focus on governance aspects of smart specialisation.

Box 5.7. The Entrepreneurial Discovery Process in Pomorskie, Poland

The Pomorskie regional government took a strong collaborative approach to the development of smart specialisation priorities through the entrepreneurial discovery process. Smart specialisation investment priorities in Pomorskie were identified largely through a bottom-up process entailing the following main steps:

- Step 1: An economic diagnostic of key regional strengths and weaknesses, accompanied by public consultation and the formation of partnerships.

- Step 2: A call for proposals to research and industry stakeholders for joint smart specialisation projects together with conference and workshop activities to stimulate proposals. This led to 28 proposals.

- Step 3: An initial assessment of proposals by a selection board composed of national and international experts and a public hearing. The selection took into account global trends, market potential, economic and technological potential, a domestic and international benchmarking, the proposed strategy and action plan, and the potential of the partnership. This led to a narrowing down to six specialisations and partnerships.

- Step 4: Final concepts were developed by the partnerships for expert assessment and recommendations. As a result, four smart specialisations were selected.

- Step 5: An implementation plan was set up for each specialisation, including its scope, aims and priority research directions.

- Step 6: Partnership agreements with priority access to EU funding were established for each specialisation, subject to renegotiation where needed.

The regional government is keeping these consortia active through continued workshops and peer-learning events. The process was also useful to learn about challenges that need to be overcome in the future to drive smart specialisation, notably a lack of data on locally emerging products and technologies to help identify potential smart specialisations and difficulties in maintaining the initial stakeholder engagement. New forms of economic policy governance in the form of project consortia and regional innovation platforms were developed to ensure long-term engagement of higher education institutions and businesses in S3 implementation.

Source: OECD (2019[34]), "Local entrepreneurship ecosystems and emerging industries: Case study of Pomorskie, Poland https://doi.org/10.1787/8fd63992-en.

Regional governments all over Europe have used the EDP more or less successfully to develop S3. However, even where the EDP successfully identified regional innovation strength, it remains focused on the policy search and discovery stage, suggesting a need for an additional mechanism to embed the role of networks in policy implementation. This is the role of learning networks.

Sustaining learning beyond the EDP: The role of learning networks

Learning is often a "by-product" of network activities, emerging, for example, through an exchange of views or shared attempts at problem-solving. However, it is also possible to see learning as the primary reason for building a network. The concept of a learning network can be defined as a formal mechanism purposefully built to support the practical learning of its members. These networks can reduce risks in experimentation because they provide an opportunity to engage in challenging reflection and to make use of peer group support. Examples of such configurations can be found in regional clusters, sector groupings, heterogeneous groups sharing a common topic of interest, user groups concerned with learning around a particular technology or application, and supply chain learning (Bessant et al., 2012[35]).

Formalising the approach and using learning networks as a governance and learning mechanism would significantly resolve contradictions between experimental innovation policy and the administrative requirements for conventional public policy. Learning networks can also help overcome some inherent weaknesses of the entrepreneurial discovery process. Often, the EDP is reduced to the design stage of policy, meant to identify regional areas with potential for innovation and growth. While the identification of priorities based on collaboration with the private sector is experimental in nature, the implementation of projects within these priority areas is mostly executed through programme-based calls rather than through strategic partnerships or "innovation platforms" of all key actors (Radošević, 2018[3]). Learning networks should include the following actors:

- *A network moderator* who manages and co-ordinates activities, people and time, matches learning needs with knowledge resources, and monitors the relationships between members.
- *Peer group facilitators* who assist groups of practitioners in their structured reflection. Facilitators are trained and accumulate experience over time.
- *Network members* are individuals representing an organisation.
- *Invited experts,* i.e. non-network members invited to participate in the network for a specific reason (such as the presentation of a topic) and a defined period.

Learning networks can address two critical challenges of experimental innovation policy. The first challenge is ensuring a strategic fit between policy priorities and the private sector needs to create innovation policies that are appropriate and relevant. The second challenge is ensuring the operational fit between policy design and governance, and implementation and evaluation (Bessant and Tsekouras,

2001[36]). Learning networks can be deployed at different stages of the smart specialisation process and input into specific areas of the process (Figure 5.1).

Figure 5.1. Areas of potential implementation of learning networks in the smart specialisation process
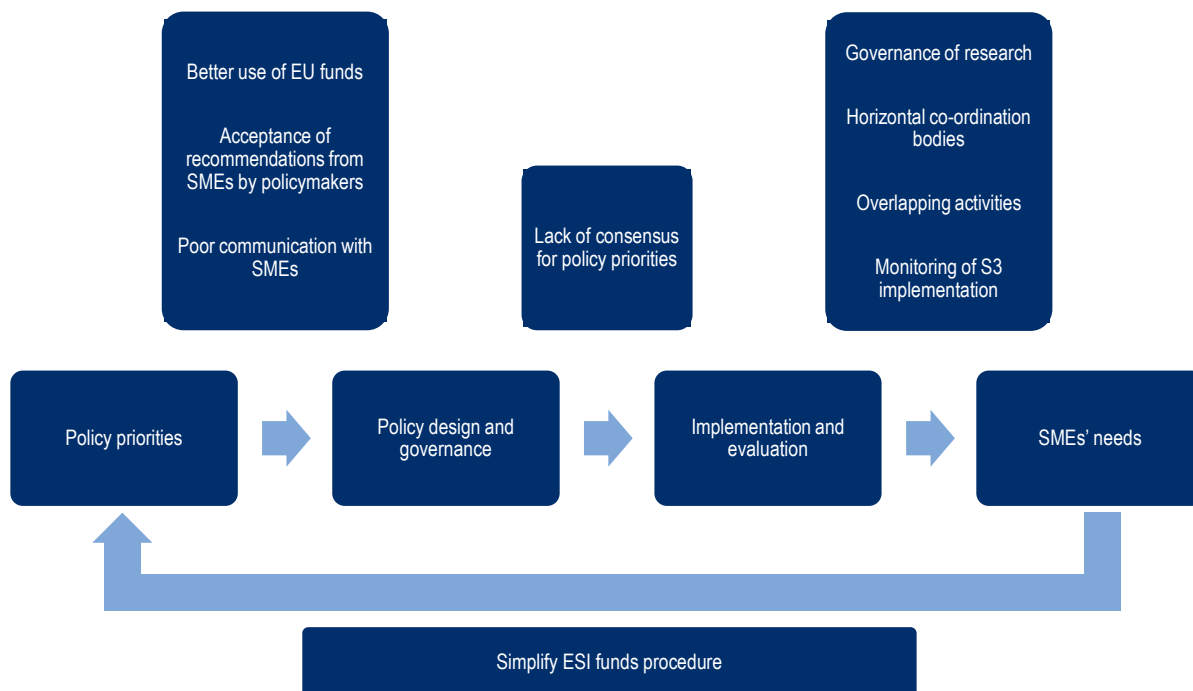
Source: Radošević, S. (2018[3]), "Fostering innovation in less-developed and low institutional capacity regions: Challenges and opportunities", Background Report for an OECD/EC Workshop Series on Broadening Innovation Policy: New Insights for Regions and Cities, OECD, 22 June 2018, Paris.

Learning by doing: Experimentation and evaluation

This section focuses on the role of "experimentation" in boosting innovation. Experimentation involves designing a portfolio of policies to solve problems in a variety of local contexts, monitoring and evaluating intermediate outcomes as rapidly as possible, and constant learning, feedback and adjustment (Wolfe, 2018[11]). Critical to the experimentation process is the recognition that policymakers can and should learn from failure. This approach supports multidisciplinary approaches to designing and implementing innovation policy and stands in stark contrast to the idea of universally-relevant policy packages.

Experimentation suggests that policymakers co-operate closely with private and non-governmental actors, which are often better placed than governments to identify barriers and areas for productive investment or policy action. It suggests involving agencies and actors on the margin of policymaking to limit capture by vested interests and to enable more creative and co-operative policies than those emerging from central agencies. Successful learning through experimentation is closely related to processes of networked and collaborative governance as described in the previous section.

What is experimental governance?

In a rapidly changing world, fixed rules written by a hierarchical authority are quickly rendered obsolete on the ground. The concept of experimental governance was developed as a response to the perceived failure of "command and control" regulation. Experimental governance has been defined as a "recursive process of provisional goal-setting based on learning from the comparison of alternative approaches to advancing

them in different contexts" (Sabel and Zeitlin, 2012[37]). It involves a multi-level process in which four elements are linked in an iterative cycle:

1. Broad framework goals and metrics are provisionally established by central and local authorities.

2. Local authorities are given broad discretion to pursue these goals in their own way.

3. As a condition for this autonomy, local agents must report regularly on their performance and participate in a peer review in which their results are compared to others who are using different means to the same ends.

4. The goals, metrics and decision-making procedures are revised by a widening circle of actors in response to the problems and possibilities revealed by the peer review process, and the cycle repeats.

Experimental governance enables a multi-level architecture, where the responsibility for policy design and implementation is distributed between different levels of government and special-purpose local institutions (e.g. private associations, joint local authority bodies, co-operation across national borders, public-private partnerships, etc.). In this architecture, it is up to the higher levels of government to set general goals and performance standards and to establish and enforce the "rules of the game". It is up to the lower levels to have "the freedom to advance the ends as they see fit" (Barca, 2009[38]).

Linking experimental governance to multi-level governance

The concept of experimental governance implies the decentralisation of power in the state system from ministries at the national level to local and regional levels of government, which are generally considered better positioned to build lasting and interactive relationships with firms and civil society associations in their respective regions (Morgan, 2018[2]). For this reason, experimental governance is closely linked to multi-level governance. It represents a new model of political architecture where political authority and policymaking influences are dispersed across the different levels of the state, as well as to non-state actors.

Effective multi-level governance arrangements are a necessary pre-condition to support the innovative behaviour of firms, sectors and clusters. Recognising the extent to which policy and decision-making are shared between levels of government leads to an appreciation of the importance of "absorptive capacity" for learning on the part of policymaking institutions and innovation support organisations.

State-sponsored experimentalism: Bottom-up models of innovation

Policymakers across OECD countries are supporting experimentation in regional innovation policy through different initiatives and programmes as part of their policy portfolios. Some governments have also started to support experimentation directly inside the government to devise more innovative services and develop technology. Policymakers are playing an increasingly active role as innovators in their own right, taking on the uncertainties of innovation through policy design, experimentation and implementation activities inside the government (Karo and Kattel, 2018[39]). For example, NESTA's Innovation Growth Lab and the EU's Joint Research Centre's Policy Lab have been supporting experimentation in innovation policy.[1] Many governments are also exploring how to create "safe spaces" for experimentation inside the public sector, helping civil servants at all levels of government deal with the uncertainty connected to experimentation processes, and sometimes giving them an explicit licence to fail (OPSI, 2017[40]). The following examples from Canada, Germany and Sweden demonstrate how novel approaches to innovation policy design, implementation and monitoring can support place-sensitive experimentation in innovation policy.

The Canadian approach: Combining policy tailoring with experimentation

In Canada, regional development agencies (RDAs) represent an institutional approach to delivering federal programmes to the different regions of the country. The RDAs have continuously evolved over the past four decades by taking on new roles and abandoning previous ones. They work closely with the provincial

governments in their regions to tailor programme structures to the specific needs of the regions. Unlike earlier Canadian bureaucratic structures that delivered programmes and services, the RDAs seek to be "change agents" in local innovation systems (OECD, 2011[41]).

In addition to managing traditional financial assistance instruments, RDAs play "softer" roles that are integral to facilitating innovation systems. These include supporting strategic planning and capacity building among firms and community organisations, addressing cultural or educational barriers to entrepreneurship and innovation, building regional knowledge through trends analysis and performance benchmarking and providing a portfolio of network-based "doing, using, interacting" relations among multiple local actors. The Federal Economic Development Agency for Southern Ontario and the Atlantic Canada Opportunities Agency provide examples of two agencies that successfully tailor their offerings to the relevant development history and regional innovation context. (Box 5.8).

Box 5.8. Facilitating innovation systems through regional development agencies, Canada

Federal Economic Development Agency for Southern Ontario

The Federal Economic Development Agency for Southern Ontario (FedDev Ontario) is helping to strengthen the region's leadership in AI through support to the Southern Ontario Smart Computing Innovation Platform (SOSCIP). SOSCIP is Canada's only advanced computing research and development consortium focused on industry innovation. It is composed of up to 17 members (post-secondary institutions and not-for-profits) and 6 innovation partners including multinationals like Unilever and IBM. SOSCIP provides a single point of contact for companies to work with world-leading researchers and advance computing platforms to solve their businesses challenges and drive economic growth.

Originally established in 2012 with funding from FedDev Ontario and expanded with subsequent funding, SOSIP brings academia and industry together to accomplish life-improving research that has led to job creation in key emerging sectors. FedDev Ontario's most recent CAD 10 million investment in the Platform toward a CAD 84 million project is supporting the delivery of a three-year initiative to help small and medium sized enterprises (SMEs) working in emerging sectors, including business analytics, advanced manufacturing and cybersecurity sectors, adopt AI in their products and operations. The project aims to undertake collaborative projects with SMEs, commercialise new AI-driven technologies and foster the skilled talent pool of AI and data science-trained students and researchers in southern Ontario.

Atlantic Canada Opportunities Agency

The Atlantic Canada Opportunities Agency has major initiatives supporting business strategies and community development at geographic scales that connect functional regions rather than conform to jurisdictional boundaries. The inter-provincial Atlantic Innovation Fund invests in R&D and commercialisation to build industrial clusters that can anchor maritime innovation, including ocean technologies and environmental technology. At the same time, the agency supports community economic development through investments in sector associations and regional development bodies that organise collective action at "in between" scales, i.e. above individual municipalities and below the province.

Source: Wolfe, D. (2018[11]), "Experimental governance: Conceptual approaches and practical cases", Background Report for an OECD/EC Workshop Series on Broadening Innovation Policy: New Insights for Regions and Cities, OECD, 14 December 2018, Paris; FedDev Ontario (2019[42]).

Canadian RDAs have a long history of successfully using experimental and innovative approaches in the design and delivery of policies and programmes. While the definition of experimentation for this purpose is open-ended, new and innovative approaches to policy can include: user-centred design, co-creation approaches to policy development with stakeholders, civil organisations and other governments, staged funding approaches to enable scaling, data analytics and modelling and investing in pooled funds that use these methods (Bradford and Wolfe, 2013[22]).[2]

The German approach: Place-based experimentalism through innovation clusters

Regional policy in Germany at the federal level and the level of the *Länder* increasingly involves distinct experimental features. At the federal level, the experimental approach is primarily implemented through regional competitions. Early examples of this approach include the Regions of the Future competition, the Active Regions competition, the InnoRegio competition, as well as the BioRegio contest of the early 1990s (Cooke, Uranga and Etxebarria, 1997[14]). This approach is designed in a top-down fashion but elicits bottom-up responses from a variety of regional and local actors.

With its Leading-Edge Cluster Competition (*Spitzencluster-Wettbewerb*, LECC) initiated in 2007, the Federal Ministry of Education and Research (*Bundesministerium für Bildung und Forschung*, BMBF) is supporting innovation clusters in a nationwide contest for the first time. Fifteen cluster initiatives were selected in three waves. They received funding of up to EUR 40 million each for 5 years to support them on their way to becoming international leaders in their field of technology. This cluster support is meant to simultaneously improve the innovative performance of the regions selected and ensure that the funding helps cluster firms attain a leading international position in sectors or niches.

Cluster initiatives were formed through a bottom-up approach, which ensured a high level of participation by regional stakeholders during the launch of the cluster initiatives and their strategy development. Recent evaluations of the cluster support (Rothgang, Dehio and Lageman, 2017[43]) point out that the intensity of network co-operation increased in all clusters due to improved awareness of potential partners. Newly formed linkages also were formed to a substantial extent, even among actors that did not receive direct funding for a joint R&D project, indicating an additional mobilisation effect of the policy. To what extent this enhanced networking will have a long-term impact on successful innovation depends on whether the co-operation with local or supra-regional partners remains at a high level beyond the funding period and whether actors will be able to learn from each other. One of the Spitzenclusters that received considerable attention in the cluster and regional innovation literature is MicroTEC Südwest in Baden-Württemberg. It provides an interesting illustration of how adopting an experimental governance approach at the federal level reinforces efforts at economic diversification, regional innovation and greater collaboration by the *Land*. It also provides an example of how a cluster can sustain long-term innovation gains by embedding learning mechanisms in the cluster's design (Box 5.9).

Baden-Württemberg is notable for a dense network of research and higher education institutes, which has resulted in the highest level of R&D density, including patenting, of any state in the Federal Republic of Germany. A critical component of the RIS is the Steinbeis Foundation with its 400 centres located in regional universities that link the region with relevant federal policies to support innovation and clusters. Despite this rich endowment of research capabilities, the region has faced a number of challenges related to the extensive industrial restructuring that affected many parts of Germany and Europe in the 1990s. Following the recovery from the downturn in the second half of the decade, there was a growing perception that the region needed to diversify its industrial base away from traditional manufacturing strengths in the automotive and mechanical engineering industries. Attempts to diversify the economy led to government policies to support new software centres, centres for fuel cell technology and biotechnology parks, among other initiatives.

One of the mechanisms deployed by the *Land* to chart the way forward was the Future Commission Economy 2000, appointed in 1992. The commission was designed to lead a region-wide process of social

dialogue and consensus-building to help respond to serious competitive threats to its traditional core industries (automotive, machine tools, electronics) and to set the economy on a new trajectory emphasising emerging technologies. The process of producing this "dialogue-oriented market-based industrial policy" was mediated by a set of important state and non-state institutions in a manner corresponding to the form of collaborative governance. Major investments in new research infrastructure by the *Land* government followed from this effort, as well as a greater emphasis on initiating and supporting regional innovation networks.

Box 5.9. The MicroTEC Südwest Cluster in Germany – Learning by design

The MicroTEC Südwest "Spitzen" cluster, developed under the conceptual leadership of the Steinbeis-Europa Zentrum (SEZ) in Stuttgart, focuses on developing and implementing new products based on the development of new general-purpose technologies in miniaturised electronic systems in the fields of nano-, micro- or biotechnologies. It was one of 15 clusters selected in a national cluster competition. The cluster bid involved the participation of global multinational firms, such as Robert Bosch or Roche Diagnostics, as well as 350 other actors in the region, from universities and research centres to many SMEs. The research activities of the cluster organisation are focused on healthcare and mobility, as well as technology-related priorities to develop next-generation microsystems for future applications. Together they cover 25 research, technology development and innovation projects and 13 structural projects.

The cluster has a built-in decision-making process that supports learning and re-evaluation of projects. The cluster board and a strategy panel created a continuous learning cycle involving three main stages:

1. Stock-taking stage designed to review the cluster's position in the global context using evaluation, audit and benchmarking policy tools.

2. Forward-looking or longer-term perspective on the potential impact of the initiative that involves foresight and impact assessment tools.

3. An action-planning stage designed to develop roadmaps for the achievement of milestones for the project with specific actions to be undertaken.

The learning process includes the broad participation of public and private actors who are asked to share knowledge from global sources with actor/region-specific knowledge. The aim of the learning process is not only to contribute to the success of the cluster initiative itself but also to transform it into a smart innovation system that continuously monitors the cluster's competitive environment, assesses its progress toward its goals, builds local competencies and capabilities and reassesses the methods used to achieve its objectives.

Source: Morgan, K. (2018[2]), "Experimental governance and territorial development", Background Report for an OECD/EC Workshop Series on Broadening Innovation Policy: New Insights for Regions and Cities, OECD, 14 December 2018, Paris.

The Swedish approach: Public sector innovation labs

Governments are increasingly turning to public sector innovation (PSI) labs for new approaches to policy design and the delivery of public services. PSI labs are created to deal with the growing complexity of policymaking in an era of accelerating social and technological change (McGann, Blomkamp and Lewis, 2018[44]). Most of these labs apply a user-focused, cross-sectoral approach to policy design as a means of driving innovation across a wide spectrum of policy domains. Their way of operating stands in stark contrast to the silos and hierarchies of the conventional public sector.

In Europe, more than 60 labs were in operation in 2016 (Fuller and Lochard, 2016[45]). In a survey of 35 of these labs, around one-third were established at a municipal level, suggesting that PSI labs are just as likely to be launched by cities and municipalities as by national governments (Puttick, Baeck and Colligan, 2014[46]). For over 60% of the labs covered in the survey, the primary source of income was self-generated from project-based funding, closely followed by direct budget transfers from the sponsoring government department. A key feature of the labs surveyed was a strong skills mix. They bring together heterogeneous teams of researchers, designers, and stakeholders to discover and analyse problems from different angles and they employ people from backgrounds generally new to the public sector from fields such as design, anthropology, ethnography, social geography, as well as political science, sociology and communication.

The primary role of PSI labs is to become effective catalysts for systemic change and to ensure that public policy is becoming more data-driven and evidence-based. To date, the catalytic role of PSI labs has been constrained by two main factors: their short lifespans and the fact that they operate removed from everyday reality. The Swedish innovation agency, Vinnova, has sought to better anchor the concept of PSI labs into everyday policymaking through the introduction of reality labs (Box 5.10).

Box 5.10. Promoting experimentation in the public sector through "reality labs" in Sweden

Since 2011, the Swedish innovation agency Vinnova has been experimenting with a number of concepts to support public service innovation. The "innovation sluices" programme aimed at creating organisational structures that would support ideas from public servants and help turn them into reality. This concept was then turned into testbeds, which are policy labs testing new solutions in a controlled environment through interaction with external stakeholders. The reality lab takes the testbed lab one step further by applying the principle of testing to the frontline. Instead of testing imagined solutions in a testbed, "reality labs" are created where policy is implemented, such as at the clinic or in the classroom where healthcare or education is delivered.

Vinnova has funded 15 labs through an open call. The agency requires innovation labs to focus on a technology or need-based area, for example medical technologies for elderly care or digitalisation of the railway sector. Although no prescription exists as to what a PSI lab is required to do, Vinnova has identified seven principles to ensure the success of each lab:

1. The lab performs experiments in the organisation's core business.
2. It expresses a special focus of interest that is specific but at the same time with broader applicability beyond the local context.
3. The market of the focus of interest is well known and there is an ambition to communicate the results.
4. The experimentation process is open to other stakeholders with possibilities to participate.
5. The applicant is building an organisation for testing and experimentation with high potential to survive after the funded project is over.
6. An integrated policy strategy exists from the start, including an understanding of what policies apply in the area of focus and how to change or influence them.
7. A clear view exists on how to utilise digital services.

Source: NESTA (2017[47]), "'Reality Labs': Evolving the public sector innovation lab", https://www.nesta.org.uk/blog/reality-labs-evolving-the-public-sector-innovation-lab/ (accessed on 6 November 2019).

Subnational worlds of experimentation

National-level initiatives may command most attention when it comes to innovations in governance but it is at the subnational levels where new forms of experimental governance have been pioneered. This is due in part to the success of the well-established paradigm of RIS but also to the manifold forms of innovation that are increasingly taking place at the level of cities and the still under-exploited innovation potential in local public administrations.

Regional innovation systems: The S3 challenge

RIS are based on relationships that interact in the production, diffusion and use of new and economically useful knowledge (Asheim, Grillitsch and Trippl, 2016[48]). Many of the basic ideas of the RIS approach like the place-dependent nature of innovation, the importance of inter-organisational networks for generating and exploiting knowledge and the integrity of governance mechanisms inform smart specialisation strategies. The smart specialisation concept as dominated regional policy in the EU since its introduction in 2014 as an *ex ante* conditionality for receiving financial support from the EU structural funds.

The S3 approach demonstrates that innovation is a place-dependent as well as a path-dependent process. Policy responses need to accommodate the specific conditions of each region rather than being derived from a "best practice" policy template. Regional innovation policy design will depend on the type of region in question. This led to the creation of a highly influential regional typology framework that distinguishes between the organisational thinness of peripheral regions, the lock-in problems of old industrial regions and the internal system fragmentation of highly diversified metropolitan regions. To address the diversity of these place-based challenges, the most important policy priority is to abandon a "one-size-fits-all" mindset and embrace a more granular approach that respects the specificity of places (Boschma, 2015[49]).

Many of the key features of experimental governance are intrinsic to the S3 policy process. Both are based on a partnership between public sector agencies at the regional level and private actors in the corporate sector, thus requiring an element of collaborative governance to succeed. The principles of the S3 approach require that it must involve a set of outcome indicators to monitor and track progress made towards meeting the objectives established in the entrepreneurial discovery process (see the preceding section). This means incorporating a diverse group of regional stakeholders in the design, delivery, monitoring and policy evaluation aspects of a programme. The co-ordination of policy systems across the regional, national, supranational and European-wide levels is also essential and calls for a strong degree of multi-level governance in its implementation.

A potential weakness in the S3 approach is that it presumes the existence of strong regional institutions and associated governance mechanisms (McCann and Ortega-Argilés, 2015[50]), which might not always be present. A growing body of literature in regional economics and evolutionary economic geography documents the close association between the quality of governance institutions in a region and its level of economic performance (Rodríguez-Pose, 2013[51]; Iammarino, Rodriguez-Pose and Storper, 2019[52]). The question it raises for the S3 process is whether it makes heroic assumptions about the state of governance, particularly in lagging regions that are most in need of its potential benefits. Recent research on the nature of new path development in RIS, which is what the S3 approach is designed to generate, argues that lagging regions may be deficient in the precise types of organisations and institutions that are most needed for the approach to succeed (Marques and Morgan, 2018[53]).

The implementation of an experimental governance approach in RIS might depend on institutional innovation for new path creation (Sotarauta and Suvinen, 2018[54]). A case study of Tampere, Finland, concluded that the process of new path creation depends on new economic opportunities being shaped by entrepreneurial actors from a range of sectors. In the process, actors acquire new ways of viewing the economic situation of their cities or regions and use this to construct new economic opportunities. Over time, the new sets of institutions or organisations created become rooted in the region and can unlock a

range of new economic opportunities, thereby embedding the learning process that was triggered through experimentation with entrepreneurial actors.

Cities as innovation spaces

Establishing a culture of innovation whereby cities are encouraged to experiment, take risks and learn from failure is a key enabler and driver to innovation. An OECD/Bloomberg survey on innovation capacities in cities (OECD, 2019[28]) has found that more than three-quarters of the 89 cities surveyed have funding schemes dedicated to supporting building innovation capacity, mostly coming from municipal budgets but also other sources, such as external (non-public) funding and national government budgets. Most innovation efforts are tailored to improve service delivery (e.g. for emergency services, housing, mobility and social services), to improve internal government operations (e.g. streamlining budget processes and workflows and fostering inter-agency co-operation) and to improve resident quality of life (e.g. health and job outcomes).

The important role of major metropolitan areas as national engines of growth (OECD, 2015[55]) and carriers of political weight (OECD, 2019[12]) has led to increased experimentation with city governance structures. The most prominent examples of experimentation in metropolitan governance involve the larger cities in each country, for example:

- In France, the 2013 Law on Metropolitan Areas provided for differentiated governance in Aix-Marseille, Lyon and Paris that included governance structures with their own taxing powers and entailed a shift of competencies from regions and departments.

- In Italy, a 2014 reform ended two decades of gridlock over territorial restructuring by creating a new legal structure for the introduction of differentiated governance in ten major metro areas – Bari, Bologna, Florence, Genoa, Milan, Naples, Reggio Calabria, Rome, Turin and Venice – and four additional cities in special regions – Cagliari in Sardinia as well as Catania, Messina and Palermo in Sicily.

- In the UK, the Core Cities have been the chief beneficiaries of a series of City Deals that devolved certain powers to city-regions in exchange for their agreement to meet certain economic goals and to be governed by directly-elected metropolitan mayors (OECD, 2019[56]; Waite and Morgan, 2019[57]).

Beyond the metropolitan level, experimentation in governance arrangements is visible at the individual municipal level as well. A prominent example comes from Denmark, where municipalities were granted exemptions from government rules in order to test new ways of carrying out their service delivery tasks, a policy experiment knows as the Free Municipality Initiative. This experiment is being evaluated in order to form the basis for potential future legislation on de-bureaucratisation for all municipalities. The concept of free municipalities continued in an adjusted form until 2019 and is being extended to more municipalities (OECD, 2017[58]).

Monitoring, evaluation and learning through experimentation

The notion of policy experimentation is linked to learning. By definition, an experiment is set up in order to learn something or to discover if something works or is true. Therefore, government approaches, which are "trying something new", can only be perceived as policy experiments once the systems and processes required to learn from them are also put in place. This includes a timeframe with clear limits or checkpoints. A date at which the results are assessed and a decision is made on whether to continue the experiment, adjust it, scale it up or discontinue it.

Despite the many benefits of experimentation, policy organisations often find it difficult to apply (Breckon, 2015[59]). Two of the most common barriers to embedding learning in policymaking are: i) the commitment

to and capacity for learning by monitoring in public sector bodies; and ii) the degree of autonomy and discretion provided to subnational governments.

Building monitoring and evaluation commitment and capacity

Some of the most common barriers to a commitment to learning about what works, where and why are political, relating to the policy cycles or to competing political priorities, for instance, the pressure to make policy decisions before rigorous evidence emerges. In addition, policymakers may believe that their views are correct and do not feel they need better evidence on their programme's impact. Fear of negative results from monitoring and evaluation as well as a lack of knowledge or insufficient skills to conduct robust monitoring and evaluation are additional barriers (OECD, 2017[58]). Related additional barriers are budgetary constraints and missing organisational processes and structures. The 2017 Fraunhofer survey found that commitment to monitoring and evaluation remains low in regional innovation policy: while two-thirds of respondents claimed that their region had some monitoring system, only half of those had the capacity to track S3 priorities in an informed way (Kroll, 2018[60]).

Embedding a culture of experimentation across economic ministries and innovation agencies takes time. It requires raising awareness of the value and feasibility of policy experimentation and identifying early champions within governments. The Finnish experimental model is a leading example of monitoring, evaluating and learning through experimentation (Box 5.11)

Box 5.11. The Finnish experimental model

Experimental Finland is a policy framework for experimental policy design that was developed by the Finnish Prime Minister's Office in 2015 and incorporated into the strategic government programme. Its aim is to allow public policy design and delivery to become more experimental. The Finnish model is a combination of both top-down and bottom-up approaches, allowing for broader "strategic experiments" such as the universal basic-income experiment and rapid grassroots experiments.

The Finnish experience successfully changed the policymaking culture, making it more evidence-based and open to risk-taking. Learning through experimentation is on the rise in the Finnish public sector, supported by a number of initiatives:

- The digital platform Place to Experiment was created to provide funding, experimental cocreation space, and for gathering and sharing lessons from different small-scale experiments.
- Small-scale experiments of EUR 3 000-EUR 10 000 per experiment are funded under 3 themes: the circular economy, AI and digital workforce skills in social and healthcare.
- Randomised controlled trials (RCTs) and nudging have been supported. Civil servants have been offered training sessions on how to conduct RCTs and an expert panel has been launched to support these experiments across different units.
- Guidelines have been created concerning how to revise legislation to enable experimentation. This is especially relevant where existing laws are preventing experiments. A report on social experiments' ethics and legal perspectives was prepared for this matter.
- Strategic experiments are evaluated and inform guides for civil servants on the importance of conducting and supporting experiments.

Source: Experimental Finland (n.d.[61]), *Homepage*, https://kokeilevasuomi.fi/en (accessed 13 April 2020).

Helping public administrations set up first small trials makes it easier for them to build internal coalitions to undertake larger and more impactful experiments. It is also important to get the resulting evidence used and successful programmes scaled up. Lastly, change needs to be sustained until it becomes part of the norm, which means that it becomes institutionalised in processes, instruments and budgets. The French organisation La 27e Région provides an example of a small-scale low-budget organisation that accompanies public administration and disseminates knowledge on the "how to" of PSI.

Box 5.12. La 27e Région – A lab to transform public policies in France

La 27e Région is a French organisation that aims to build core government capacity in experimental public policy design through applied training with regional public administrations and the provision of written guidelines. To this end, it mobilises the capabilities of multidisciplinary teams composed of designers, idea generators and social scientists from many fields (ethnography, sociology, participant observation) and engages in ground-level actions, including do-it-yourself projects and adult education actions.

The initiative currently carries out three major strands of action:

- *Térritoires en Résidence (Territories in Residence):* Started in 2009, this is the first programme developed by La 27e Région. Within the programme, a multidisciplinary team spends three separate one-week periods with a neighbourhood organisation, a school or a community centre. The purpose of the activity is to question the operation of the entity from the standpoint of its beneficiaries in order to propose concrete improvements. An evaluation conducted after the first 12 projects helped refine the methods and communication channels for future projects.
- *La Transfo*: From 2011 through 2014, La Transfo was conducted in partnership with four pilot regions of France: Bourgogne, Champagne-Ardenne, Pays de la Loire and Provence-Alpes-Côte d'Azur. Over a period of up to two years, the team of residents worked with civil servants, elected officials, citizens and the entire administrative "ecosystem" on a specific topic, to test the public innovation function, including its methods and team, and its inclusion in mainstream policymaking.
- *Les Éclaireurs* (Foresight): This collaborative foresight tool developed by La 27e Région is meant to imagine the public service offer of tomorrow. By highlighting where a problem lies, the team helps identify the tools, methods and processes which public authorities can employ in the future.

Source: La 27e Région (n.d.[62]), *Homepage*, http://www.la27eregion.fr/ (accessed 14 April 2020).

Ensuring sufficient autonomy and discretion, and supporting asymmetric decentralisation

Although the experimental model makes a powerful case to create space for local innovation, questions remain about how much real authority is enjoyed by the local level when it comes to innovation policy and to what extent hierarchical structures have been replaced by networked forms of governance. Particularly in less-developed cities and regions of centralised and unitary states, such real power transfer might not have occurred.

Experimentation and learning by doing at the subnational level can be supported through asymmetric decentralisation, where selected subnational jurisdictions are treated differently from their territorial peers on economic, political or administrative grounds. However, asymmetric decentralisation carries costs and benefits. Potential benefits are linked to the fact that institutional and fiscal frameworks can be better aligned with local capacities and may be better attuned to local needs, thus favouring experimentation. As

regards the potential costs, asymmetric decentralisation can exacerbate inter-regional inequalities (OECD, 2019[56]).

Decentralisation has been an important international trend in governance for more than 70 years and remains high on the political agenda of many OECD countries. While the degree of decentralisation is difficult to measure and compare, OECD fiscal databases and other relevant sources have shown that decentralisation is still on the rise in many countries (OECD, 2019[56]). Data from the Regional Authority Index (RAI) also show that 52 out of 81 countries experienced a net increase in decentralisation in the years 1950-2010 and only 9 experienced a net decline (Marks, Hooghe and Schakel, 2008[63]).

Asymmetric decentralisation arrangements help drive experimentation because they allow policies to go through a testing phase. Developing a new product or service without going through an R&D phase involving market research and user testing will likely lead to failure. Designing policies should also go through similar phases before implementation. Such an "R&D phase" for policies helps better understand the problem being addressed and allows for larger user engagement in the policy design and implementation phases. In addition, policy "crash tests" can avoid large policy disasters, by experimenting them in small pilots before scaling them at large. The five RIS testing pilot projects in the Canadian province of Newfoundland and Labrador are an example of regional innovation policy testing (Box 5.13).

Box 5.13. Newfoundland and Labrador testing pilot projects, Canada

The province of Newfoundland and Labrador in Canada introduced an innovation policy scheme following experimental governance approaches based on a series of five RIS testing pilot projects. The projects were designed to identify unique characteristics and assets in different economic sectors in five regions of the province and improve their innovation capacity.

Once the testing pilots succeed in identifying promising avenues for new growth paths, regions can attempt to pursue investments on a larger scale. The pilots connect knowledge capabilities and resources of a wide group of stakeholders, fostering greater collaboration among local agents, creating linkages and providing support in the areas not only of R&D but also of innovation and technology adoption. The policy design has distinct stages involving:

- Identification of the unique characteristics and assets of the specific economic sectors in each region, highlighting regions' competitive advantage.
- Creating partnerships among regional stakeholders and developing a vision of what is possible for each sector in each region.
- Help in identifying new international markets for the region's products, overcoming information and knowledge gaps in the region.
- Focus on the areas of specialisation where regional businesses have the potential to innovate and disseminating the benefits of that innovation across the region.

The Newfoundland RIS testing pilots are designed in a model of networked governance. Each RIS pilot is overseen by steering committees that vary in form across the regions. The primary responsibilities of the steering committees are assessing the competitive strengths of each region (including strengths, weaknesses, opportunities and threats [SWOT] and competitive analyses that can generate a regional profile) and establishing a shared vision for pursuing the identified potential growth paths.

Source: Wolfe, D. (2018[11]), "Experimental governance: Conceptual approaches and practical cases", Background Report for an OECD/EC Workshop Series on Broadening Innovation Policy: New Insights for Regions and Cities, OECD, 14 December 2018, Paris.

Policy learning in less-developed and remote regions

Trying out new processes and instruments in regional innovation policy can be particularly difficult in the context of less-developed regions with large institutional deficits. Within the EU, these regions are located mostly in Belgium, Bulgaria, Italy, Romania and Spain, and are at risk of being stuck in a "low-administrative quality, low-growth trap" (Morgan, 2018[2]). These regions are often in the greatest need for additional innovation support. However, their weak absorptive capacity keeps them from making full use of such support.

Less-developed regions often face low levels of co-operation and weak administrative capacity

Less-developed regions are often characterised by low levels of co-operation between public and private actors. Establishing collaborative arrangements between actors, for example governments, firms and universities, in a framework of strategic interactions is a major challenge, especially in regions with little or no tradition of collaborative agreements. However, such interactions are critical for regional development ensuring "policy learning" about changing local opportunities and bottlenecks and external solutions with the potential to work locally (Marques and Morgan, 2018[53]). The absence of such collaboration can also mean that funds made available in these regions through regional development programmes are more likely to be absorbed by public sector higher education institutions (HEIs) that may have the capacity to use them but may be poorly connected to the private sector actors with insights into the regional growth potential.

A second issue concerns the quality of public administration in these regions and whether public sector organisations have the administrative capacity to successfully implement processes of learning and monitoring. The institutional quality in low-growth regions is estimated to be just 63% of the EU average, while in low-income regions it is just 57%. However, this also varies significantly from just 12% of the EU average in Campania (Italy) to 26% above the EU average in Alentejo (Portugal) (World Bank, 2018[64]). Policy learning only works well when the quality of institutions at the regional level is high. However, institutional weakness in terms of both governance and capacity is one of the defining features of lagging regions, whether they are low-growth regions or low-income regions. In addition to relying on certain learning mechanisms that are better suited for regions where institutional capacity is less developed, there are measures that national governments can use to support capacity building. Asymmetric decentralisation, for example, allows governments to tailor responsibilities to local capacities. Responsibilities can then iteratively increase as capacity rises (Morgan, 2018[2]; OECD, 2019[56]). National innovation policy can provide targeted support to lagging regions. Such support can, for example, include co-ordinating and promoting learning across regions within the same country via physical or web-based platforms for exchange.

An additional problem is that policy learning and adaptation works only when regional elites are sufficiently committed to making it work. This commitment needs to include a change in perception of monitoring and evaluation from being a compliance tool to becoming a learning tool. Shifting to a model of diagnostic monitoring would perceive monitoring as checking on progress in order to facilitate problem-solving by all actors instead of using it as a threat of punishment for bad performance or an incentive for good behaviour (Sabel and Zeitlin, 2012[37]).

Some learning mechanisms might be particularly suited for less-developed regions

Given the additional limitations to policy learning in lagging regions, greater attention needs to be paid to the underlying conditions of institutional capabilities and regional culture. A critical part of institutional capabilities is the administrative capability required to implement and co-ordinate processes of experimental discovery (Morgan, 2018[2]). For these co-ordination capabilities to compensate for a weak

regional culture of collaboration, public sector agencies must establish the conditions and institutions under which private sector actors can learn to engage with the public sector and each other. The successful implementation of learning through experimentation rests on building stronger collaborative and networked governance.

The inability to engage in trust-building exchange and collaboration often reflects the absence of a tradition that values the connection of public sector agencies to economic actors in the private sector. A range of incentives that encourage all parties to maintain involvement can support exchange and collaboration. In a first step, small, repeated experimental interactions based on the entrepreneurial discovery progress may prove effective as a mechanism for getting all involved stakeholders to work together and facilitate institutionalised learning (Gertler and Wolfe, 2004[65]). Several institutional mechanisms can be applied to foster co-operation beyond the entrepreneurial discovery process. Learning networks (see the previous section), where communities of practice form across diverse stakeholder groups in various sectors of the economy, can help to build a common basis of knowledge and understanding that fosters trust and collaborative governance. Another institutional mechanism that has been proposed in response to these challenges is diagnostic (problem-solving) monitoring, which focuses on the type of activities a region engages in and is more suitable for lagging regions or countries. This approach involves a high level of experimentation in discovering new paths or domains of economic development. It introduces the notion of the Schumpeterian development agency (SDA) as an agency with the mandate and ability to undertake small-scale experiments, correct errors and learn from its mistakes. While this type of agency is deemed to be suitable for application in lagging regions, most of the examples provided come from small, open, emerging economies, such as Finland and Israel (Dutz et al., 2014[1]). Table 5.1 provides an overview of the strengths and weaknesses of these learning mechanisms.

Table 5.1. Policy learning mechanisms for lagging regions

Approach	Strengths	Weaknesses
Smart Specialisation Entrepreneurial Discovery Process (Foray 2015)	- Stakeholder engagement through structured consultation process but confined to the design stage	- Broad-based engagement does not always lead to adaptation and learning - EDP might reflect existing power and discourse structure
Learning networks	- Ensures that learning goes beyond the policy design stage - Feedback is an essential mechanism of experimentation which requires constant adaptation	- Requires the ability and willingness of public sector entities to lead and engage in change - Requires specific institutional setup
Diagnostic (problem-solving) monitoring	- Allows for experimentation	- Requires SDA

Source: OECD compilation based on Morgan, K. (2018[2]), "Experimental governance and territorial development", Background Report for an OECD/EC Workshop Series on Broadening Innovation Policy: New Insights for Regions and Cities, OECD, 14 December 2018, Paris, and Radosevic, S. (2018[3]), "Fostering innovation in less-developed and low institutional capacity regions: Challenges and opportunities", Background Report for an OECD/EC Workshop Series on Broadening Innovation Policy: New Insights for Regions and Cities, OECD, 22 June 2018, Paris.

In addition to learning within the region, supranational and international organisations are potential sources of institutional support for regional authorities. For example, the regional development agency (RDA) in Northeast Romania has been able to implement a bottom-up consultative policy strategy in challenging circumstances, having learnt substantially from support from the EC and the Joint Research Centre. Northeast Romania is one of the poorest regions in the country and has proved to be one of the most proactive in terms of mobilising all possible institutional capacity it possessed. The challenge for the RDA was all the greater because a linear model of innovation dominates the national innovation system in the country. Universities receive priority attention in terms of investment but remain substantially disconnected

from the private sector, with only a limited amount of technology transfer between the two and relatively few spin-offs. Northeast Romania has been able to contribute to more and better connections between the public and private sector (Box 5.14).

Box 5.14. S3 Multi-stakeholder engagement, Romania

Romania received special attention under the EU Lagging Regions project. The project was partly managed by the Joint Research Centre's S3 Platform in Seville because of the weak institutional support for S3 in Romania.

The proactive RDA in Northeast Romania benefitted from an internal policy learning process and strong support from the EC through the Lagging Regions project. A detailed analysis of local industrial sectors with the potential to form competitive clusters was undertaken. Six industrial sectors were identified with existing agglomerations that showed potential for further development, as well as nine existing clusters. The analysis concluded that the greatest potential lay in reconfiguring traditional industries in several sectors, as well as the potential for new sources of regional economic development in several emerging sectors.

The S3 was formulated based on the SWOT analysis undertaken by the RDA. The strategy included the existing regional potential for technology transfer, the position of regional industries in existing GVCs, a public consultation conducted between 2013 and 2016, and potential linkages with existing European and national policy priorities for innovation. The resulting vision for 2022 for the northeast region focused on promoting sustainable development in six vertical sectors: agri-food, biotechnologies, textiles and new materials, health and tourism, ICT and the environment. In addition to the sectoral focus that was adopted, several horizontal policy priorities for action were also spelled out, including developing the innovative competency of the younger generation in the region, support for innovative companies, initiatives to promote clustering of regional firms and technical assistance for the implementation of the strategy.

Northeast Romania represents a case where working in an institutionally thin and underdeveloped context did not impede setting processes that included key features of collaborative governance. The RDA linked the existing public administrative structures in the region to other elements in a quadruple helix model: the education system, firms and organisations in the economic system and civil society. The resulting process explicitly incorporated three elements of collaborative governance – consultation, engagement and collaboration – to formulate a common strategy and action plan.

Source: Wolfe, D. (2018[11]), "Experimental governance: Conceptual approaches and practical cases", Background Report for an OECD/EC Workshop Series on Broadening Innovation Policy: New Insights for Regions and Cities, OECD, 14 December 2018, Paris.

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Notes

[1] See https://ec.europa.eu/jrc/en/scientific-tool/tools-innovation-monitoring.

[2] It is too early in the process to find concrete examples of how this directive is being operationalised with respect to economic development programmes; the major RDAs are all contributing to the emergence of new cluster organisations funded by the federal government's Supercluster programme.