



EXPERIMENTAL GOVERNANCE: CONCEPTUAL APPROACHES AND PRACTICAL CASES



Broadening innovation policy: New insights for cities and regions

Experimental Governance: Conceptual approaches and practical cases

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Background information

This paper was prepared as a background document for an OECD/EC high-level expert workshop on “Developing strategies for industrial transition” held on 15 October 2018 at the OECD Headquarters in Paris, France. It sets a basis for reflection and discussion. The opinions expressed and arguments employed herein do not necessarily reflect the official views of the OECD or of its member countries, or of the European Union. The opinions expressed and arguments employed are those of the authors.”

Broadening innovation policy: New insights for regions and cities

The workshop is part of a five-part workshop series in the context of an OECD/EC project on “Broadening innovation policy: New insights for regions and cities”. The remaining workshops cover “Fostering innovation in less-developed/low-institutional capacity regions”, “Building, embedding and reshaping global value chains”, “Managing disruptive technologies”, and “Experimental governance”. The outcome of the workshops supports the work of the OECD Regional Development Policy Committee and its mandate to promote the design and implementation of policies that are adapted to the relevant territorial scales or geographies, and that focus on the main factors that sustain the competitive advantages of regions and cities. The seminars also support the Directorate-General for Regional and Urban Policy (DG REGIO) of the European Commission in their work in extending the tool of Research and Innovation Strategies for Smart Specialisation and innovation policy work for the post-2020 period, as well as to support broader discussion with stakeholders on the future direction of innovation policy in regions and cities.

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Citation: Wolfe, D. (2018), “Experimental Governance: Conceptual approaches and practical cases”, Background paper for an OECD/EC Workshop on 14 December 2018 within the workshop series “Broadening innovation policy: New insights for regions and cities”, Paris.



Table of contents

1. Introduction	4
2. Experimental Governance: Concepts and Policy Implications	6
2.1. Policy Learning as Aspects of Experimental Governance	8
2.2. Networked and Collaborative Governance: Innovation Through Interaction.....	9
2.3. Relation to Multilevel Governance	11
3. Experimental Governance in Practice in North America.....	14
3.1. Lessons from Canada.....	14
3.2. Lessons from the US.....	21
3.3. Limits of US Exceptionalism.....	30
4. Applied Examples of Experimental Governance in Europe.....	31
4.1. Experimental Governance in Germany.....	32
4.2. Brainport Eindhoven.....	36
4.3. Is S3 a Case of Experimental Governance?.....	37
5. Implications for Less-developed Regions	41
5.1. Case Study of North-East Romania	42
6. Conclusion.....	45

1. Introduction

1. This paper explores the topic of "Experimental Governance" as it relates to the goals, priorities, and work of the European Commission's Directorate-General for Regional Policy (DG REGIO). It examines a variety of perspectives on the concept of "experimental governance" and links it to prior work on the concept of 'learning by monitoring' that has fed into the development of the concept of experimental governance, as well as to related work on the concepts of collaborative and networked governance. It then examines several case studies from North America and Europe and how the concept is relevant for the study and understanding of different approaches to regional development policies, with a focus on regional innovation policies. It explores the question of how varying approaches to regional economic development and innovation policies that can be grouped under the rubric of 'experimental governance' provide a mechanism for policy formation that extends beyond the normal boundaries of the public sector by allowing for a greater degree of collaboration and experimentation in the formulation of the policies. The case studies documented in the paper provide some evidence that experimental governance affords a potential way of implementing regional innovation policies that builds on local capabilities by developing new institutional, as well as entrepreneurial, capacities.

2. Effective regional development policy and innovation policies depend upon such a process of experimentation, by trying out new processes, ideas and structures, including forms of collaborative and networked governance. Of necessity, such an approach depends upon the ability to learn from both success and failure in order to improve. Experimental governance involves a process of provisional goal setting and revisions based on lessons drawn from regional experiences and from "learning by doing". The paper also explores the question of whether the role of experimental governance is relevant for new policy domains, such as regional innovation and smart specialization.

3. A key challenge in exploring the potential applicability of experimental governance is to determine what the underlying social and institutional criteria that can contribute to the success of this approach and whether it is equally applicable across all types of regions. The evidence suggests it can be applied in older industrial regions, facing significant transitional challenges, but success depends upon the ability of local leaders across all segments of society to form collaborative arrangements that allow public sector institutions to work with private sector actors in devising experimental approaches. However, such an experimental approach does not necessarily work for every type of region, especially when considering different levels of institutional capacity and the absence of the underlying conditions of trust and civic capital that are essential building blocks for collaborative forms of governance.

4. The paper lays out the conceptual and interlinked dimensions of collaborative, networked and experimental governance, with a strong emphasis on their more practical aspects. It asks: How can experimentation in governance arrangements better support regional development and innovation policies? What are the conditions under which civic associations and entrepreneurial networks get involved with experimental governance approaches (in networked and collaborative governance)? and how successfully can experimental governance be adapted in all types of regions (particularly those with low institutional capacity or without cultures of collaborative problem solving)?

5. Most critically, it explores the question of whether experimental governance for regional development/innovation policies can work equally effectively in leading regions and lagging ones, i.e. in regions with low governance capacities. It also explores how experimental governance at the regional level intersects with the policy mandates of senior levels of government or supra-national governments, in a multi-level governance system, both in a North American, as well as the European, context. It examines the degree of compatibility between an experimental governance model and the S3 approach to regional development and innovation policies that have been the dominant paradigm in Europe since 2014. It also explores the question of what are the key barriers that must be overcome for the successful implementation of experimental governance in regions with low institutional capacity or without cultures of collaborative problem solving and explores where it has been done.

2. Experimental Governance: Concepts and Policy Implications

6. Underlying the concept of experimental governance, as elaborated by Charles Sabel, are the closely related concepts of reflexivity and institutional learning or learning by monitoring. The concept of reflexivity is derived from several sources—not least the work of Anthony Giddens. For Giddens, reflexivity is grounded in the structures of social practice—it should be understood as “the monitored character of the ongoing flow of social life” (Giddens 1984, 3). He ascribes the characteristics of reflexivity both to individuals but also to institutions. This form of reflexive learning requires the ability to self-monitor and learn from past successes and failures: in other words, to learn how to learn. This suggests a higher order of learning by institutions – one based on the ability to apply institutional memory and intelligence to monitor their own progress in adapting to ongoing changes in the environment. Here, the (institutional) self-monitoring of the learning process itself becomes integral. The concept of *institutional reflexivity* has been elaborated by Cooke and Morgan who suggests that a capacity for self-monitoring must be viewed as an aspect of the institutionalized intelligence required to cope with the need for constant innovation. Cooke and Morgan see reflexivity as a crucial dimension of intelligence that is fundamental for the learning capacity of an organization, institution, or region. They view reflexivity as “the systematic process which combines learning and intelligence such that, in a number of feedback loops, the system receives guidance” (1998, 73).

7. Sabel takes this notion further with his analysis of *learning by monitoring*. The creation of discursive institutions where economic actors engage in discussion can play a critical role in reconciling the demands of *learning* with the demands of *monitoring*. By learning, he means acquiring the knowledge to make and do things valued in the marketplace; by monitoring, he means the ability of the parties involved to ensure that the respective gains from learning are distributed among them according to standards that they have agreed upon. The activity of discussion is critical for reconciling these two objectives, for “discussion is precisely the process by which parties come to reinterpret themselves and their relation to each other by elaborating a common understanding of the world” (Sabel 1994, 138).

8. Where this process succeeds, these institutions play an important role in supporting the innovation process within a local or regional economy. In institutions that foster learning by monitoring, actors can gauge the benefits gained through their involvement without making themselves overly vulnerable. This process may be particularly beneficial in the knowledge-based economy, where the production of complex goods requires the coordination of many specialized firms across diverse branches of the industrial and service sectors. Where learning by monitoring has successfully been institutionalized in this way, it allows actors to assess where cooperation is advantageous and mutually beneficial (Sabel 1994, 159).

9. The idea of learning by monitoring has been integrated into the broader literature on governance. Attention to the role of governance arises from the insight that policy outcomes depend on the interaction among a wide range of social and economic actors, including regional and local governments, the private sector, voluntary, business and not-for-profit organizations. Central to the concept is the development of styles of governing in which the boundaries between public and private actors and even across different levels of government become blurred. Governance focuses on mechanisms of governing that go beyond the authoritative distribution of resources through traditional bureaucratic

structures (Stoker 1998). The approach accentuates consultation and deliberation, rather than the exercise of formal authority through organizational and administrative structures. It focuses on “the process through which public and private actions and resources are coordinated and given a common meaning and direction” (Peters and Pierre 2004, 78).

10. The governance perspective also draws on insights from the policy literature that there is often a critical gap between the formulation of policy and its implementation (Paquet 1997). National and regional governments may legislate in a few areas within their jurisdictional authority, but the effectiveness of policy is determined ‘on the ground’ in a specific geographic context. The extent to which governments achieve their desired goal depends on the pattern of interaction between public authorities operating a variety of arms-length agencies, private sector firms and a range of industry and other voluntary associations. The quality of governance cannot be reduced to the actions of any one actor in either the public or private spheres, but results from their interaction across a wide range of socio-political-administrative interventions. Policy development and implementation works with and through the combined resources of governmental and non-governmental actors in the form of horizontal, self-organizing and “self-governing inter-organizational networks” (Rhodes 1996, 657–60).

11. In more recent writing, Sabel and Zeitlin have formalized this perspective into the concept of experimentalist governance. At its heart, it reflects an approach to rule-making and policy implementation based on the recursive review or monitoring of the experience of different jurisdictions with policy implementation at the local and regional levels. In the words of the scoping paper written for this workshop,

12. Sabel’s concept of experimentalist governance . . . was developed in response to the perceived failure of “command and control” regulation in a rapidly changing world where fixed rules written by a hierarchical authority are quickly rendered obsolete on the ground, where front line actors need to find joint solutions to common problems through experimental trial and error processes (Morgan 2018, 5).

13. In Sabel and Zeitlin’s elaboration of the concept, they link four key elements in a recursive fashion. Broad goals or policy objectives are set jointly by a combination of central and local government agencies by consulting with key stakeholders in civil society. Following this, the local units enjoy broad scope to achieve or implement these objectives according to their own approach. However, as the units do not enjoy complete policy independence, they must report policy results to a central authority and undergo a process of peer review in which their results are compared to those of other units. Critical to its effectiveness are the development and adoption of metrics and decision-making processes that undergo a periodic review that leads to a refinement and improvement of the overall policy approach. Sabel and Zeitlin also suggest that experimentalist governance can be viewed as a form of “directly deliberative polyarchy”. It is directly deliberative in the sense that it builds on the concrete experience of the actors to explore alternative approaches or solutions to current problems and polyarchic in the sense that it lacks a unified, centralized decision-maker, which means that participants must learn from each other in setting goals and assessing outcomes (Sabel and Zeitlin 2012, 170–71).

14. Sabel has also linked this approach to the regional level through what he terms experimental regionalism. It is consistent with the more general approach spelled out above, “... the aim of regional experimentalism is to create an organization capable of re-evaluating and revising its substantive purposes.” The primary challenge for experimental regionalism is to assist the key regional actors, in both the public and the private sector, as well as intermediary associations, in developing competence in coordinating their

respective activities. This occurs through recurring interactions to refine policies and adjust strategies and by mutual evaluations of what is working and what needs to change (Sabel 1996, 23).

2.1. Policy Learning as Aspects of Experimental Governance

15. In the policy literature, the concepts of learning by monitoring and experimentalist governance are most closely aligned with recent insights and perspective derived from the literature on policy learning. Lundvall's emphasis on the centrality of learning processes for innovation in the knowledge-based economy applies equally to policy processes, especially in situations where accessing and integrating private sources of knowledge in the context of more associative forms of governance is necessary to ensure the effectiveness of policy outcomes (Lundvall 1998). However, the ability to acquire, share and disseminate policy-relevant knowledge within novel governance arrangements poses new challenges for government departments and agencies accustomed to operating in the more traditional command and control mode of conventional bureaucracies.

16. The recognition in the policy literature that rationality is bounded, and that conflicting choices and values underlie policy decisions requires a more nuanced approach to policy learning. From this perspective, policy analysis contributes to the discourse and bargaining within which public policy is formed. The design of appropriate policy depends on the design of organizational structures capable of learning and adapting to what is learned within the public sector, as well as in more associative and experimental forms of governance. Policy learning in this sense is described as 'a change in thinking' that occurs in a structured and directed way and is directed towards the refashioning of policy tools to resolve a policy issue or achieve a specific goal or objective. Policy learning must also include 'policy forgetting' as part of the iterative process, in other words the ability to abandon outdated policy approaches that are no longer effective or may lead to counterproductive results when working in new and different modes of governance. As is the case with the innovation process, policy learning is cumulative, as policy makers build on their past knowledge and competences to adapt to changing circumstances in a reflexive manner (Koschatzky 2009).

17. From the perspective of experimental governance, policy learning is closely linked to the process of organizational learning. Policy learning can occur inside individual organizations, within organizations in the same network or systems, or across various organizations 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 organizations—including both public and private ones—at more than one level of political jurisdiction. On this basis, Nauwelaers and Wintjes distinguish between three modes of policy learning in different organizations: intra-organizational learning, intra-system learning and inter-system learning. The first involves learning-by-doing with respect to the internal practices or routines of the individual organization. The relevant policy knowledge is mostly internal, embedded in the experience and tacit understanding of the policy-makers in the organization. The second applies to learning processes that extend across the boundaries of different organizations linked together in the same policy system. This can include the transfer of person-embodied forms of knowledge through meetings by individuals in the system or more codified transfers of knowledge through the conduct of benchmarking processes or the creation of scorecards. The final mode involves the conduct of comparative evaluation exercises across organizations in different system. This type of policy learning has been used extensively

by officials in international organizations trying to transfer insights and best practice across organizations located in different national and regional systems (Nauwelaers and Wintjes 2008).

2.2. Networked and Collaborative Governance: Innovation Through Interaction

18. While the concept of experimental governance has been developed through its own evolutionary path, as spelled out in the scoping paper, it shares certain elements with related concepts of governance that have been elaborated in the literature—particularly the notions of networked or associative governance and that of collaborative governance. Reflecting broader shifts in political science and administrative science, governance scholars argue that political relations and policy-making have moved from a hierarchical pattern associated with the bureaucratic state-managed mode of development in the post-World War II era to a more heterarchical set of relations characterized by a distributed pattern of authority that is dispersed over the core elements of the economy, society and polity. This distributed pattern of governance invests new degrees of power and influence in communities because the capacity for learning can best be realized through patterns of decentralized and reciprocal relations built on evolving partnerships (Paquet 1997, 26). This leads to a growing recognition that policy outcomes depend on the interaction among a wide range of social and economic actors, including sub-national and local governments, the private sector, voluntary, business and not-for-profit organizations. Distributed governance involves the combined resources of governmental and non-governmental actors in the form of horizontal, autonomous, self-organizing and “self-governing inter-organizational networks” (Rhodes 1996, 659–60). Associative governance is the process of managing networks of diverse actors, where notions of power rest more on mutual dependence among ‘self-governing’ networks than on the traditional hierarchical exercise of authority.

19. The appeal of the associative approach is that it devolves a greater degree of responsibility for outcomes onto firms and organizations that will both enjoy the fruits of its success or live with the consequences of its failure. Like the challenge in experimental governance, one issue in the associative approach is to achieve a balance between the state’s need to provide direction and the desirability of providing greater ‘voice’ through the devolution of responsibility. Governing institutions are viewed as one set of institutions in the collective order, working in relationship with other organizations, rather than operating in their traditional hierarchical fashion of command and control. Government continues to establish the basic rules governing the operation of the economy, but places greater emphasis on the devolution of responsibility to a wide range of associative partners through the mechanisms of ‘voice’ and consultation (Morgan and Nauwelaers 1999).

20. In a perceptive article that anticipates some of the key ideas of the experimentalist approach to governance, Ash Amin outlined four key principles that underlie the associational approach. The first is a degree of decision-making pluralism, which involves delegating decision-making authority to the levels and bodies at which policy effectiveness can best be achieved. The second involves the notion that the state provides strategic leadership and capacity to coordinate. Effective leadership requires the combining of authority with a capacity for consensus building in the appropriate arenas. The third point involves the adoption of a process of dialogic rationality. The relevance of dialogic democracy involves a lasting consensus that results from interactive reasoning. The fourth point involves the commitment in the process of democratic practices to transparent and open government. This approach to governance seeks to “break away from the constraints

of the traditional dual choice between market-centred and state-centred approaches”, and emphasizes the development of “governance capability across, and between, a broad range of institutional fields of economic life” in the form of institutionalized local governance structures based on “networks of organization and representation” (1996, 309).

21. Implementing associative forms of governance poses several challenges, however. A key challenge for government agencies operating in this mode of governance is to establish the conditions under which key actors at the community level can engage in a consultative and interactive fashion with government authorities, as well as learn to collaborate with these actors under a more distributed pattern of authority. The ability to collaborate involves the delegation of certain tasks from formal government agencies to accredited business associations or community organizations. The latter possess relevant assets, such as knowledge of, and credibility with, their members, which public organizations need to enlist in order to ensure the effectiveness of their support policies. The dispersal of power in this fashion creates the opportunity for more meaningful dialogue to take place at the regional and local levels. This is important because dialogue or discussion is central to the process by which parties come to reinterpret themselves and their relationship to other relevant actors within the local economy — which is a prerequisite for networked forms of governance (Nauwelaers and Morgan 1999, 12-13).

22. The associational model is closely related to notions of governance networks found in the literature. The attention to networks reflects the shift in governing away from unilateral action by formal governments to multilateral (or what Sabel and Zeitlin call polyarchic) forms of action involving groups of both public and private actors. In this sense, Torfing defines governance networks as, “a horizontal articulation of interdependent, but operationally autonomous, actors from the public and/or private sector who interact with one another through ongoing negotiations that take place within a regulative, normative, cognitive and imaginary framework; . . .” (Torfing 2012, 102). The driving force behind this trend is the acceptance of their mutual interdependence in affecting policy outcomes. The interaction between diverse groups of actors participating in governance networks takes the form of sharing information, knowledge and perspectives, as well as coordinating their activities to achieve and implement more effective solutions to problems — particularly in situations where the solutions lie beyond the capacity of any one party to achieve. As in the associational model described above, power relations within governance networks are horizontal rather than hierarchical because no single party has the capacity resolve problems and implement solutions on their own (Torfing 2012, 102–03).

23. Another approach that shares characteristics with associational and networked governance is collaborative governance. Collaborative governance is an arrangement where public agencies engage with groups of non-state actors or associations in a process of decision-making that is both consensual and deliberative, with the aim of devising and implementing policy along less managerial lines (Ansell 2012). Not surprisingly, the significance of these alternative forms of governance is greater at the local and regional levels of governing where the challenges of scale are easier to surmount. According to Amin and Thrift, what all these approaches — associational, networked and collaborative — governance share is their focus on “*intermediate forms of governance*”, which are purposeful and participatory arrangements for governance that facilitate the flows of information and understanding among the participants (1995, 52). The flow of knowledge and understanding among participants in a governance network is critical for the effective implementation of experimental governance, hence the importance of linking the various conceptions of governance to each other.

24. A key condition that contributes to effective governance arrangements at the regional level is the emergence of strong, dynamic civic leaders with the ability to forge broad and inclusive local development coalitions. A development coalition is a place-based, coalition of a diverse cross-section of social and economic groups committed to the economic development of a specific city-region. Increasingly, business leaders, especially in North America, have been working together to support the economic fortunes of their metropolitan regions. These collective efforts have emerged out of a recognition that coordinated efforts at a region-wide scale are necessary to promote the economic prospects of both their region and their individual businesses. Such civic-minded business leaders have coalesced in many cities to forge new organizations or revitalize existing ones dedicated to working with existing EDO's or creating new ones, where necessary, to promote their regional economies. The principal hallmark of these new civic organizations is that they are both collaborative in nature and regionally focused in their scope. They display several common features: they are shifting priorities from traditional business climate issues to a broader concern with regional competitiveness; they are often funded through a variety of different mechanisms; and they have resulted in many older organizations restructuring their approach to regional cooperation in order to be able tackle complex economic development issues at a regional scale. This last factor can involve formalizing partnerships with complementary business organizations to operate more effectively at a regional level, as well as creating new public-private partnerships to oversee responsibility for regional economic development (Futureworks 2004).

25. Processes of networked and collaborative governance are particularly significant for their potential to contribute to policy learning at the city and region level. In earlier work, we identified the importance of undertaking 'local social knowledge management' exercises at the regional and local level. Regional economic development processes involve, at their most fundamental level, *socially organized learning processes* involving learning by individuals, by firms, and by institutions. Several issues are central to these outcomes. First, how do *local social knowledge management* exercises affect economic outcomes in local and regional economies? Second, how do the structures and institutions at multiple levels of governance shape and circumscribe the scope for local action and possibilities for generating effective social learning processes? This is significant because expectations concerning the achievement of local social learning and knowledge management processes should be informed by an understanding of the institutional influences on the attitudes, behaviour and practices of local economic actors (Gertler and Wolfe 2004a).

2.3. Relation to Multilevel Governance

26. As noted above, each of these interrelated concepts of governance implies the devolution of power in the state system from remote bureaucratic ministries at the national level to local and regional levels of government better positioned to build lasting and interactive relations with firms and civic associations in their respective regions. For this reason, they are closely linked to a related concept, that of multilevel governance, derived from the term coined by Gary Marks in his work on the relations between levels of government within the European Union. It represents a new model of political architecture where political authority and policy making influences are dispersed across the different levels of the state as well as to non-state actors. Whereas the governance literature focuses on the integration of a broader array of non-governmental actors into governing processes, the idea of multilevel governance emphasizes the need for greater cooperation across different levels of government who share overlapping or competing spheres of

jurisdictional responsibility across a related set of policy areas. At the core of the idea is a recognition that the national level no longer monopolizes policy-making and decision-making competencies are shared among a range of governmental actors; with no one level exercising a monopoly over another. Accordingly, sub-national levels are said to be interconnected to national, and at times supra-national, arenas rather than nested within the national state (Hooghe and Marks 2001).

27. Recognition of the extent to which policy and decision-making are shared between various levels of government leads to an appreciation of the need for coordination among these levels to foster the conditions necessary to support the innovative behaviour of firms, sectors and clusters. Just as public and private sector actors need to learn to interact in new and different ways under the emerging mechanisms of experimental and associative governance, so too with various levels of government under the conditions of multilevel governance. Reflecting this trend, Koschatzky observes that there is a necessary correlation between multilevel governance arrangements and a 'absorptive capacity' for learning on the part of policy-making institutions and innovation support organizations. The increasing complexity of innovation policy-making, involving interactions among different economic actors and governance structures "necessitates effective policy learning mechanisms which allow policy makers to learn from past experiences, ongoing implementation processes and the assessment of future trends" (Koschatzky 2005).

28. For this type of learning to be effective, such processes of institutional learning must extend across, and include, key actors in both the public and private sectors at all three levels of governance. This view is endorsed by Scott et al. who suggest that governance is now widely deployed to describe the multifaceted aspects of social and economic coordination in an increasingly interdependent world where various tiers of government must collaborate with each other, as well as with a range of nongovernmental actors to achieve their goals. They point out that the governance of city-regions, must be viewed as part of a larger issue of coordination across multiple geographic scales and jurisdictional levels. This "sense of the term sees governance as involving a set of complex institutional reactions to the broader problems of economic and social adjustment in the emerging global-local system" (Scott, et al. 2001, 22).

29. By their very definition, experimental and associational or networked governance strategies cannot be mandated by national or supra-national governments alone. To succeed, they must combine a push-pull effect where the central or supra-national level offers inducements or support for local bottom-up initiatives to be undertaken on both an experimental and associational basis. And not all regions or localities will respond to these challenges or inducements. 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, industry associations, local and community organizations) in regional innovation and development policy 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. Hence, the emphasis placed here on linking those disparate forms of governance to each other from a bottom up perspective at the regional and local levels. 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. However, it must also be recognized that the regions and localities that will experience the greatest difficulty in adopting these forms of governance are the very ones that suffer from weaker institutional supports, thus creating a mutually reinforcing cycle. This poses a significant, but not insurmountable,

obstacle. Attention must be placed on supporting efforts at the local and regional levels to create the networks that can form the basis for innovations in experimental governance. One way that national or supra-national governments can support these efforts is by creating cross-regional and cross-national networks or linkages across regions to support the development of peer to peer learning networks. In this way top down efforts can help support the bottom up ones.

3. Experimental Governance in Practice in North America

30. The next section of the paper turns to an examination of how successful efforts at experimental governance are being developed and applied in Canada and the US. The benefit of such an exercise is twofold. The U.S. policy environment is much less institutionally ‘thick’ than the European one, yet there is a wider array of programs to support regional development, both at the national level (Drabenstott 2005), as well at the state level (Feldman, Lanahan, and Lendel 2014). However, those programs operate in a less coordinated and institutionally supported fashion than in Europe. Canada, for its part, has a long history dating back to the Great Depression and World War II of working to overcome regional disparities. Despite its recent experimentation with policies to support alternative forms of regional development and innovation policies, the Canadian approach tends to be conflated with American approaches and under-represented in cross-national comparisons. This overlooks the extent to which the federal Regional Development Agencies (RDAs) have worked in an experimentalist fashion to develop, implement and refine a rolling series of policies to promote innovation at the local and regional level over the past four decades (Bradford and Wolfe 2013). Furthermore, the fact that each agency operates in a different fashion, which is sensitive to the local context in their respective part of the country, means that Canada has established its own place-based approach and has not tried to impose a top down or “one size fits all” approach to promoting regional and local development (Holbrook and Wolfe 2000). In addition, many of the provinces have launched their own experimentalist policies and programs to promote innovation within their regions. The result is that regional development policy in Canada reflects a complex mix of federal programs delivered through the RDAs, experimental provincial programs to promote regional development and innovation, as well complex degrees of federal-provincial collaboration through a process that Bradford labels “metagovernance” (Bradford 2017). The next section provides an overview of some of these efforts at the level of both the RDAs and the provinces.

3.1. Lessons from Canada

31. As noted above, Canada differs significantly from the US in that the RDAs represent an institutional approach to delivering federal programs to the different regions of the country, but in a place sensitive manner that reflects the regional differences across the country. The RDAs have evolved continuously over the past four decades, taking on new roles, abandoning some previous ones and working closely with the provincial governments in their regions to tailor program structures to the specific needs of the regions. At the same time, they look to institutionalize cooperation through decentralized agencies with a national mandate to align with different provincial, municipal, and community priorities. Unlike earlier Canadian bureaucratic structures that delivered programs and services, the RDAs seek to be “change agents” in local innovation systems (OECD 2011).

32. This role has several distinctive characteristics and demands. In addition to managing traditional financial assistance instruments, RDAs undertake ‘softer’ roles that are integral to facilitating innovation systems. These include: supporting strategic planning and capacity building among firms and community organizations; addressing cultural or educational barriers to entrepreneurship and innovation; building regional knowledge through trends analysis and performance benchmarking; and providing a portfolio of

innovation supports that encompasses both science-based university-industry collaboration and network-based “doing, using, interacting” relations among multiple actors diffusing know-how. The latter mode of innovation often applies in rural region and here the Canadian RDAs coordinate a national network of over 250 community economic development corporations in non-metropolitan areas that deliver business services, investment funds, and community strategies. In executing these roles, each RDA tailors its offerings to the relevant development history and regional innovation context. A full description of their complete array of programs is beyond the scope of this paper, but for illustrative purposes, we highlight the role of two agencies — the Federal Economic Development Agency for Southern Ontario (FedDev) and the Atlantic Canada Opportunities Agency (ACOA).

33. **Federal Economic Development Agency for Southern Ontario:** Two of this RDA’s major funding envelopes, the \$210 million Prosperity Initiative and the Technology Development Program, have made major investments in accelerating the innovative capacity of the province’s research infrastructure. One of their major initiatives leveraged provincial assets in water-related research, sector entrepreneurship, and clean technology production through the establishment of a \$60 million Southern Ontario Water Consortium. The agency was a catalyst for bringing together partners and investors from the provincial government and private business to create a regional network comprising eight universities, 60 industry partners, and multiple municipalities for world-scale clean water research, testing, and technology development. In another initiative, the agency is supporting path-breaking research in a new forms of battery technology at one of Ontario’s leading universities jointly with a major multinational automobile manufacturer. Both initiatives build in an iterative fashion on previous investments made by the federal and provincial governments to develop new capabilities in emerging technologies in the southern Ontario economy.

34. **Atlantic Canada Opportunities Agency:** This RDA has major initiatives supporting business strategies and community development at geographic scales that connect functional regions rather than conform to jurisdictional boundaries. At the macro-regional scale, the inter-provincial Atlantic Innovation Fund invests in research and development and commercialization to build industrial clusters that can anchor Maritime innovation, including ocean technologies, aqua-culture, bio-technology, and environmental technology. At the same time, at the meso-regional scale, the agency supports community economic developments through investments in sector associations and regional development bodies that organize collective action at ‘in between’ scales above individual municipalities and below the province wide. Through its programming and networking the agency is fostering links across the macro-regional clustering and the meso-regional community economic development.

35. The RDAs, along with most other federal government departments, are mandated to devote a fixed percentage of their program funding to experimenting with new approaches and measuring the impact of these experiments. 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 organizations and other governments; staged funding approaches to enable scaling; data analytics and modelling and investing in pooled funds that use these methods.¹ It is too early in the process to find concrete examples of how this directive is

¹ <https://www.canada.ca/en/innovation-hub/services/reports-resources/experimentation-direction-deputy-heads.html>

being operationalized with respect to economic development programs, the major RDAs are all contributing to the emergence of new cluster organizations funded by the federal government's Supercluster program.² The Innovation Superclusters Initiative, unveiled in the 2016 budget, and formally launched in February 2018 provides support for five years to five consortia across the country: Canada's Digital Technology Supercluster, Protein Innovations Canada Supercluster, Building an Advanced Manufacturing Supercluster, the AI-Powered Supply Chains Supercluster and the Ocean Supercluster. While the RDAs are not the lead agency in the delivery of this new program, they are involved in the formation of the successful Super Cluster organizations across the country, having been instrumental in sponsoring some of the consortia and playing a supportive role with respect to others. In an even more recent announcement, the Minister of Innovation, Science and Economic Development and Minister responsible for Canada's regional development agencies (RDA), announced the Regional Economic Growth Through Innovation (REGI) program—a nationally coordinated, regionally tailored program to support the growth of Canadian businesses, their expansion into new markets and their adoption of new technologies and processes.³ Both these developments reflect the iterative and experimental fashion in which regional development policies are evolving in Canada.

3.1.1. The Ontario Network of Entrepreneurs

36. In addition, to the evolving federal role in supporting innovation and regional development across the country, many of the provinces have experimented with their own policies to support the evolution of regional innovation networks. One of the longest lasting and most illustrative is the Ontario Network of Entrepreneurs (ONE). Ontario is the largest province in Canada, both in terms of population and in terms of its GDP. It constitutes the industrial heartland of the national economy, with established strengths in automotive and advanced manufacturing, digital technologies and multi-media and a wide range of financial and business services. The postsecondary education system consists of a dense network of publicly-funded institutions, which includes 22 universities and 24 Colleges of Applied Arts and Technology, that are well distributed across the province to serve a wide range of local catchment areas.⁴ The funding of postsecondary education is primarily a provincial responsibility, while responsibility for research funding is shared jointly between the federal and provincial governments. Unlike in the US, there is no national mandate for the licensing of federally funded research, which has resulted in a diverse range of intellectual property regimes and tech transfer policies across the mix of higher education institutions (Hepburn and Wolfe 2015).

37. The ONE program has evolved steadily over the past two decades and represents an illustrative example of how regional or provincial governments can experiment with innovative policy design that draws upon the knowledge and insights of local innovation intermediaries. Since the early 2000s, there has been a growing recognition by the provincial government of the need to leverage its extensive research infrastructure more effectively to support the province's innovation economy. As a result, Ontario's Ministry of Research and Innovation (MRI) experimented with an evolving policy framework to support the development of regional innovation ecosystems across the province. It has been constantly refocused in light of the on-the-ground experience of the agencies

² <https://www.ic.gc.ca/eic/site/093.nsf/eng/00008.html>.

³ <https://www.canada.ca/en/innovation-science-economic-development/news/2018/12/new-regional-innovation-programming-supports-business-development-and-growth.html>.

⁴ For an overview of Ontario's regional innovation system, cf. (Gertler and Wolfe 2004b).

delivering the ONE programs, as well as internal assessments by provincial Ministry staff and external assessments by review panels. The policy framework has gone through four distinct phases in this evolutionary cycle. The Ontario Network of Entrepreneurs (ONE) is the current iteration of the policy learning designed to link different components of the provincial research infrastructure and technology transfer system into a coordinated innovation system, while simultaneously allowing for structural variation according to local economic conditions.

38. The program originated as the Biotechnology Cluster Program (BCIP) in 2003, but before it was fully implemented, the provincial government changed political parties and in 2005, BCIP was replaced with the Ontario Commercialization Network (OCN), consisting of eleven Regional Innovation Networks (RINs) based on the initial set of consortia that had formed under BCIP. The program scope was expanded from its original focus to include other technology-based sectors, such as information technology, energy conservation, and advanced materials. The RINs were “multi-stakeholder, regional development organizations established ... [to] support partnerships among business, institutions and local governments to promote innovation” (Ontario 2005, 110). The OCN was designed to operate as an informal network to facilitate access to resources. While the Ministry had established overall objectives for the network, the commercialization framework and its service delivery model remained fragmented. Some of the shortcomings that were identified included a lack of uniformity across the RINs in terms of service delivery best practices; the absence of a clear entry point for potential clients; and, a lack of centralized direction and coordination which ultimately resulted in inconsistent roles and responsibilities. In recognition of these shortcomings, the government initiated the government initiated a program review in 2008 to establish a clear vision for the commercialization “ecosystem” in the province. The Review was informed by an external audit as well as the work of a Review Expert Panel comprised of representatives from industry and academia and was overseen by a Steering Committee consisting of senior (OCN Review Steering Committee 2009) members of Ontario’s academic community, financial services and industry. In 2009, the Steering Committee submitted its report which included a core set of guiding principles on which to develop a new OCN (OCN Review Steering Committee 2009).

39. In response to the review the government transformed the OCN into the Ontario Network of Excellence (ONE), thus moving the policy framework into its third phase. The ONE was intended to be a “mesh” network, rather than a hub and spoke model, and as such, clients could access the ONE through any one of the fourteen Regional Innovation Centres (RICs) located across the province – expanded from the previous eleven RINs. Each RIC operates as a (Ontario 2005) not-for-profit organization mandated by the government to deliver programs and services that are tailored to meet the needs of their local entrepreneurs, enterprises, investors, and researchers. The RICs offer a broad array of resources to their local entrepreneurial communities, including educational programs to enhance entrepreneurial skills/talent development; advisory services to provide clients with coaching and mentorship opportunities; industry-academic programs to encourage knowledge exchange and resource sharing; customer development opportunities to provide clients the opportunity to engage with users; and, leads to financing programs and opportunities with potential investors from the private sector, as well as from municipal and federal sources.

40. The ONE also includes two larger “hub” organizations: the MaRS Discovery District, located in the research heart of downtown Toronto and the Ontario Centres of Excellence (OCE), also based in Toronto, but with regional offices across the province.

Each of these two hub organizations offer a suite of programs to a range of different private sector clients that delivered both directly and through the individual RICs. MaRS is an innovation intermediary organization that connects and enables active collaboration between the communities of science, business and capital to accelerate the innovation process and amplify the economic and social impact of important new ideas and discoveries. The status of MaRS within the ONE is somewhat ambiguous given that it serves as a RIC, but in its broader organizational capacity, it coordinates the government's Business Acceleration Program (BAP), which funds programs and services delivered by the RICs that are intended to strengthen and accelerate the growth of high-tech companies and entrepreneurs. Through this program, the RICs are able to provide a number of advisory programs and services (i.e. Entrepreneurs-in-Residence programs, Embedded Executive programs, Volunteer Mentor Networks, Market Intelligence services, etc.) educational programs (i.e. Introductory Entrepreneurial Training Courses, Advanced Entrepreneurial Training Courses, Online Entrepreneurial Education, etc.) and capital programs and services (i.e. Capital Network Events, the Angel Network Program, Beta Customer Demonstration, etc.) for companies to address a range of business related issues (Hepburn and Wolfe 2015).

41. MaRS' role within the ONE is complemented by that of the Ontario Centres of Excellence (OCE), an innovation intermediary that works in partnership with industry and academia to commercialize innovation originating from the province's post-secondary and health research institutions. A critical part of the OCE's mandate is to help innovation companies leverage the research capabilities and outcomes of the province's dense network of research institutions for commercial advantage, as well as supporting the development of a world class knowledge and technology transfer system. OCE maintains a network of business development officers who work with local partners, such as the RICs, to identify industry needs and connect firms with research institutions. OCE funds these services through its Core program, which includes support for Industry-Academic Collaboration, Commercialization Programs, Entrepreneurship and Strategic Initiatives. The organization coordinates its activities with the broader technology transfer networks and research institutions across the province – including colleges, universities and hospitals – to provide them with the resources needed to fund initiatives that support technology transfer partnerships, encourage collaborative commercialization and support the development of research and entrepreneurial talent.

42. The ONE operates based on its understanding of the importance of engaging local research and innovation actors to link their activities to regional economic development. Member organizations of the ONE hold 'regional alliance' meetings with their clients to solicit advice and guidance on what services best meet the needs of local innovators and entrepreneurs. These regional alliance meetings facilitate support for identifying and building the pipeline of innovative companies; aligning resources with the growth potential of the client and/or the market opportunity; identifying next steps and required resources for clients; bringing multiple resources and expertise to clients; and, monitoring the status of clients. Furthermore, many of the RICs continue to receive funding from municipal, federal and provincial sources. The alignment of these resources towards technology-based economic development is assured because the RICs maintain an ongoing dialogue with the civic, regional and national entities that support their existence and share the common goal of intensifying economic growth and job creation.

43. In keeping with the practice constantly reviewing the program, the Ministry conducted another expert panel external review in 2017. From the perspective of the panel, the network has achieved some notable advances, particularly with respect to support for

startup firms, but it has failed to address the key challenge facing Ontario's high potential growth firms – the need to grow to global scale. This challenge results from a lack of clarity around the overall goals of the network – should it focus just on startups? Or on helping companies grow to global scale? A final challenge noted in the report is the limited availability of investment capital for early stage firms in Ontario. “While the total amount of venture capital in Ontario is increasing . . . , the province's startups still trail leading jurisdictions in average deal size per round. . . . The lack of early-stage funding could be a reason for our inability to scaleup in Ontario” (Expert Review Panel Report on the Ontario Network of Entrepreneurs 2017, 24). In response to the challenges identified, the report makes a few key recommendations, but at the time of writing, the Ontario government had not issued its policy response.

44. Nonetheless, the experience of the ONE reflects an important illustration of innovative policy evolution and experimentalist governance for other jurisdictions. Policy evolution did not occur through a haphazard succession of incremental changes, or ‘muddling through’ based on trial and error in circumstances of incomplete information, but instead represents an important aspect of learning based on inputs from a variety of perspectives and ‘on-the-ground’ participants (Bradford and Wolfe 2017). In this way, the evolution of the ONE substantiates Uyarra and Flanagan’s observation that innovation “policy processes and entrepreneurial processes of discovery and innovation have similar evolutionary dynamics. Priorities, rationales and instruments change over time and all actors learn over time – not just adaptive policymakers but also implementers, targets and beneficiaries” (2016, 317), underscoring the inherently non-linear and systemic nature of knowledge exchange for innovation.

3.1.2. The Newfoundland Case

45. The Province of Newfoundland and Labrador, which lies on Canada's east coast, provides a sharp contrast to the previous case of Ontario. The population of the Province constitutes less than 1.5 per cent of the national total and its GDP of \$32.4 billion represents the same proportion of the national economy. The primary industries in the province are offshore oil and gas, the fishery, forestry and mining although there is also emerging strength in ocean technology, aquaculture and technology more generally. As part of its new Business Innovation Agenda, introduced in 2018, the provincial government adopted an increased focus on advancing product development and commercialization, improving productivity performance, linking the provincial economy more tightly into international markets and enhancing workforce skills and talent. For present purposes, the intriguing part of this agenda is the introduction of a series of five Regional Innovation System (RIS) pilot projects, designed to identify unique characteristics and assets in five economic sectors or clusters in five regions of the province and improve their competitive advantage by providing supports for R&D and innovation (Hartley 2018).⁵ The five sectors include fisheries and tourism, forestry and agriculture, aerospace and defence, industrial technology development and ocean technology (which also happens to be the focus for one of the five Supercluster initiatives funded by the federal government. The process for managing the regional pilots is being led by the RIS unit in the Regional Economic Development Division of the provincial Department of Tourism, Culture, Industry and Innovation.

46. The pilots are intended to foster innovation. A goal of the program is to align the resources of regional stakeholders to utilize the innovative technologies found in the region

⁵ I am indebted to the author for providing me with additional insights into the operation of the RIS pilot projects.

as potential drivers of a new vision for their collective future. The RIS Pilot projects are designed to connect the knowledge capabilities and resources of a wide group of stakeholders to open new technological opportunities and take advantage of new markets. They aim to foster greater collaboration among the stakeholders, to create linkages to potential knowledge sources in the areas of research and development, technology adoption and innovation to build a more competitive future for the region. The RIS strategy process moves through several distinct stages: 1) the identification of unique characteristics and assets of the specific industry sectors in each region; 2) highlighting the region's competitive advantage; 3) creating partnerships among regional stakeholders for the development of a vision of what is possible for the sector and the region; 4) overcoming information and knowledge gaps in the region to help identify new international markets for the region's products; 5) focusing on the areas of specialization where regional business have the potential to innovate and disseminating the benefits of that innovation across the region.

47. The Newfoundland RIS pilots are explicitly grounded in a model of networked governance. Each RIS pilot is overseen by a steering committee that varies in makeup across the regions. The primary responsibilities of the steering committees are to conduct assessments of the competitive strengths of the region (including SWOT and competitive analyses that can generate a regional profile), establish a shared vision for the sector and the region linked to the potential transformation of the regional economy; establish short- and long-term goals based on the potential to achieve a competitive advantage for the sector and the region; develop and implement a set of action items that can include launching new strategic initiatives, modifying existing programs, and aligning regional infrastructure to achieve those goals; and monitor and evaluate the initiative, including the use of benchmarks to assess progress, as well as defining quantitative and qualitative indicators of the success of the regional pilot in achieving those goals. While the RIS pilots project does not explicitly use the language of experimental governance, the emphasis placed on monitoring the effectiveness of the pilots in achieving their goals builds in a critical element of that process. The nature of the visioning exercises undertaken varies considerably across each of the pilots, as some of the sectors involved have previously completed extensive strategic planning processes. The pilots are also designed to expand networked relationships between the businesses in the region and the provincial post-secondary institutional partners to promote greater opportunities for technology transfer and adoption.

48. Based on the initial experience with the pilots, the program managers have reached some preliminary conclusions. Most of the pilots are taking place in parts of the province with a relatively sparse population where industry consists primarily of micro and small firms. The pilots underway in more populated regions are moving ahead at a faster pace and finally, the information requirements for monitoring the various steps involved in the pilots varies considerably across the individual sectors and regions. As of the time of reporting two of the pilots had reached the stage of identifying and beginning to prioritize action items while the others were still at the earlier stage of undertaking their regional assessments and trying to identify their potential areas of competitive strength. In all cases, strong emphasis is being placed on the need for ongoing monitoring and evaluation of the effectiveness of the pilots. From the perspective of the program managers, the process is still unfolding, and they recognize that not all the pilots may reach their objectives. However, a significant achievement to date has been the level of engagement with the process in each of the regions and a genuine desire to see the process through to its conclusion. A key insight to be drawn from this program is that with the right degree of public support and a clear identification of the process to be followed, it is possible to

launch regional exercises in networked and experimental governance that can generate a reasonably high degree of local buy-in and commitment. The critical variables seem to be a strong degree of support from the provincial managers and a relatively experimental approach to launching the process.

3.2. Lessons from the US

49. Experimental governance takes a radically different form in the U.S. than in most other industrial countries. On the one hand, it is because the U.S. innovation system has a less institutionalized and formalized innovation system than in other countries; on the other, it is because of the complex and multi-varied array of regional development and innovation policies practiced at both the state and local levels. As a result, there is greater scope for bottom-up initiatives at the local and regional level, as well as numerous instances of these types of initiatives led by the private and not-for-profit sectors. Although almost none would explicitly fall under the rubric of experimental governance, they feature many of the characteristics associated with the approach. The initiatives often draw heavily upon different forms of networked and collaborative governance, which leads to a high degree of experimentation being built into the design and implementation of regional and local development initiatives.

50. It is widely accepted that the federal government in the U.S. does not play a significant role in regional economic development, especially not on a scale comparable that of the European Union, or even the Canadian case discussed above. However, this truism overlooks the extensive array of programs operated by the federal government in the U.S. to support the national innovation system (Hughes 2005; Block and Keller 2011; Weiss 2014; Wessner, et al. 2013, 85–108), which are delivered in the ground in specific regions and locales and often play a critical role in stimulating local and regional clusters or innovation ecosystems. The funding provided by federal government programs, intermingled with state initiatives and drawn up by regional and local authorities, has frequently provided the basis for some of the most notable innovation clusters in the U.S. (Leslie 2000) and have laid the basis for several interesting efforts in experimentalism. Since 1980, the federal government has expanded the range of measures to promote economic development across the country, many of which have a strongly regional dimension. A report by the Brookings Institution found 250 programs across 14 different federal departments and agencies with total annual spending of \$76.7 billion for grants, direct loans and guaranteed or insured loans. The report, however, observes the lack of policy coherence behind this effort, noting that federal programs “have evolved in a wildly ad hoc, idiosyncratic and uncoordinated fashion” (Mills, Reynolds, and Reamer 2008, 24).

51. Within the broad array of federal agencies examined in these studies, the one with the mandate most clearly focused on regional economic development is the Economic Development Administration (EDA) of the Department of Commerce. The EDA was established under the Public Works and Economic Development Act of 1965 (42 U.S.C. 3121), as amended, to generate new jobs, help retain existing jobs, and stimulate industrial and commercial growth in economically-distressed areas of the United States. EDA assistance is available to rural and urban areas of the U.S. experiencing high unemployment, low income, or sudden and severe economic distress. Its mission is “to lead the federal economic development agenda by promoting innovation and competitiveness, preparing American regions for growth and success in the worldwide economy.” To achieve this end, its investment priorities, which are selected through a competitive grant process, support the development of regional innovation clusters, encourage business

expansion in clean energy, sustainable manufacturing, green technologies and broadband infrastructure, enable high-growth businesses to expand into global markets, and support distressed regions that experienced disproportionate economic losses (www.doc.gov/eda). The approach followed by the EDA is highly flexible in that it is designed to tailor the investments it makes to meet the strategic priorities of the local communities applying to it. As in the case of the E.U., there is a sense that federal funds have been concentrated on ‘convergence’ goals, at the expense of formulating a consistent strategy to support regions with the potential for sustained high growth. For this reason, there was growing support within the policy relevant communities in the 2000s for regional economic development efforts by the national government to be more clearly targeted towards promoting innovation clusters with a strong potential for sustained growth and development (Mills, Reynolds, and Reamer 2008; Sallet, Paisley, and Masterman 2009).

52. Many of the most interesting experiments in novel forms of regional and local development strategies over the past two decades in the U.S. have involved different types of public-private partnerships that reflect the underlying principles of networked and collaborative governance. Frequently these initiatives build upon major investments made by the federal or state level in upgrading existing research facilities or expanding them into new, pathbreaking directions. One of the underlying strengths of the U.S. innovation system is the depth and excellence of its post-secondary research institutions located in virtually every state of the union (Crow and Tucker 2001; Feller 1999). The university-based nature of the U.S. innovation system is one of its distinguishing features and the role of cooperative R&D programs and specialized training programs have become critical assets for upgrading the economic capabilities of regions facing competitive pressures. Since the 1980s, there has been a growing recognition in all parts of the country, but particularly those experiencing severe cases of industrial restructuring, that the installed infrastructure of post-secondary education and research institutions constitute the most valuable assets for charting a way forward. Most examples in the U.S. of new forms of experimental governance as a strategy for regional economic development have involved leveraging these underlying strengths of the post-secondary system. Various states have been highly effective in building on these local and regional assets in terms of human capital, scientific infrastructure and knowledge-based entrepreneurship in launching new technology clusters and innovation ecosystems (Wessner, et al. 2013, 13)

53. The extensive literature on regional economic development in the U.S. frequently adopts the metaphor of ‘waves’ to classify varying trends in the approach to regional development policy. Adopting this metaphor, several analysts depict the period since the 1990s as the ‘third wave’, one characterized by the formation of public-private alliances in the form of “regional partnerships”. These partnerships vary considerably in form and context from one region to another across the U.S., but they epitomize the forms of networked and collaborative governance discussed in this paper and with increasing frequency, they involve a strong degree of experimental governance in the implementation of their policy approach (although that term is rarely used). While the specific nature of the partnerships varies, they share a number of common elements; 1) they are led by coalitions of interest groups representing the public, private and not-for-profit sectors in their local communities; 2) they adopt a strategic approach to upgrading their regional economies; 3) their success is based on strengthening the governance capacity at the regional level, rather than focusing on government per se; and 4) they often utilize consultative processes as a means of collaborating to formulate a shared vision for the region (Olberding 2002). Central to this approach is the emphasis placed on involving key actors at the local level in thinking about how to design regional development and innovation strategies and the

potential for dynamic leaders to emerge as drivers of the process. However, the source of that leadership may vary. In some regions, it comes from political institutions or industry associations. In others, it originates with an inspirational figure in a university setting or anchor firm that attracts or spins off like-minded individuals in other firms. These inspirational leaders, with the power to create buy-in for a new vision to alter the development trajectory for their communities and to mobilize buy-in from critical segments of the community have been labelled ‘civic entrepreneurs’ (Henton, Melville, and Walesh 1997).

54. This overall approach bears some notable similarities to the form of experimental governance discussed in the scoping paper under the title “The New Localism”, a term coined by Bruce Katz and Jeremy Nowak in their recent book. Among the hallmarks of the new localism are efforts by local leaders to align their educational systems to provide workers with the skills need to thrive in the knowledge-based economy; creating civic spaces to foster the effective exchange of ideas, especially between research institutions and firms and entrepreneurs; designing and implementing new forms of regional and local governance based on decentered networks rather than hierarchical governments and “characterized by interactive problem solving rather than by rigid and prescriptive rulemaking”; and funding growth by deploying a diverse set of financial mechanisms to fund investments in infrastructure and innovation (2017, 2–3).

55. The central thesis of the book is not entirely novel, with its focus on the ‘decentering’ of the state and its shift from the national level to the local and the regional (Wolfe 1997). However, more relevant for the present study is its assertion that power is shifting horizontally out of the hands of governments, whether national or local, and into networks of public, private, and civic actors. As Kevin Morgan observes so astutely, it is no accident that this formula for the new localism was conceived in the U.S., given both the highly partisan nature of politics at the national level and the decentralized and regionally-embedded nature of the U.S. innovation system discussed above. But as he also observes, the hyper-localist variants of the Katz and Nowak argument are wide of the mark because they radically discount the extent to which some of the most successful efforts at formulating new localist strategies have been directly dependent on the ability to tap into federal funds, or have built on the substantial infrastructure investments in their regions and communities made by the federal government (Morgan 2018, 48–49). Katz and Nowak are clear on this point in their own writing, viewing it as one of the five points that undergird their framework. The other key points which comprise the framework are: the new localism is based on multisectoral networks that work together to solve problems; the locus of problem solving must be open to new ideas arising from a diverse range of constituencies; it is occurring across a range of geographic levels in the U.S., ranging from the district and city to the county and metropolitan; and it has emerged as a local response to the difficulty of working with the federal level as a reliable partner (Katz and Nowak 2017, 10–12). The discussion that follows highlights three cases provide illustrate the use of experimental governance at the local and regional level in the U.S. and involve, some, if not all, of the framework elements of the new localism.

3.2.1. The Albany Nanotechnology Cluster

56. Over the past several decades, one of the most dramatic economic transformations in the industrial northeast of the U.S. has occurred in the Albany region of upper New York State, which by the mid-1990s had one of the weakest economies of any part of the country. Major firms that had formed the bulwark of the regional economy were succumbing to the pressure of international competition and tens of thousands of jobs had been lost to

offshoring and technological change. The transformation was driven by a sustained set of investments by the State government but matched by a series of strategic initiatives launched and supported by key actors in the region's innovation system. They have pursued a more than two-decade long strategy to transform the upstate economy into a leading centre for nanotechnology research and development by making major investments in university-based research infrastructure, and by working collaboratively with the private sector and regional development organizations. In so doing, they also transformed the competitive dynamics in the semiconductor industry, by retaining critical R&D and some production jobs in the U.S. While success has depended, in part, on the sheer scale of the investment made by the State authorities, its relevance for this report depends not so much on the specific content of the investment, but rather on the collaborative nature of the strategy deployed and the element of experimentalism built into the way in which the State government drew key lessons from the process and applied them more broadly to its regional development initiatives across upper New York State (Wessner, et al. 2013, 143–45).

57. The key institution at the heart of the strategy has been the State University of New York (SUNY) at Albany. In the early 1990s, the State Governor convened a stakeholder group to devise a strategy for reinvigorating the regional economy. Out of the process emerged a recommendation for a strategic focus on nanotechnology. A key actor in pushing the strategy in this direction was a local physics professor at SUNY-Albany who was active in the field. In their study of brainports, *The Smartest Places on Earth*, authors Antoine van Agtamael and Fred Bakker describe Alain Kaloyeros, who became the head of SUNY's Polytechnic Institute's \$20 billion Colleges of Nanoscale Science and Engineering (CNSE) as the critical social connector who helped bring the diverse groups of people who are part of the nanotech cluster together and turn the stakeholder group's vision into a reality. They describe social connectors in language very similar to Henton et al.'s civic entrepreneurs as people who, *"have the vision to persuade others to embrace something that is beyond their radar screen and embrace that vision as their own. They motivate people to connect, work to find common ground and establish new relationships outside of their comfort zone, and then build these relationships into lasting communities"* (Agtmael and Bakker 2016, 58). His vision for the region was based on the creation of a new knowledge platform for sharing path breaking ideas between academic researchers and industrial partners that could also serve as an innovation hub for spinning out new products and processes.

58. The creation of the nanotechnology cluster around the capital region of New York grew in stages through a series of key investments by the state government over two decades beginning in the late 1990s. These investments were often linked to matching or greater private sector investments. New York had made an unsuccessful bid to bring the Sematech research consortium to Albany. Following the loss of the bid to Austin, Texas, a successive set of state governors began the process of investing to upgrade the research capabilities in the field at SUNY Albany beginning with the creation of the Center for Advanced Technology for thin film coatings that laid the foundation for what became CNSE. This was matched by a decision on the part of IBM to build a new generation wafer fabrication facility in the late 1990s, followed in short order by a decision by the university and IBM (with state support) to create a 300 mm wafer fabrication facility on the university campus dedicated to research purposes. As a result of these moves Sematech announced that it would create a new research facility in Albany, with decisions over the next few years by leading semiconductor manufacturers to locate facilities in the region. This was crowned with a decision by Global Foundries, a leading global semiconductor manufacturer, to locate a new 300mm wafer plant in the region and then a deal by the

company to acquire IBM's semiconductor manufacturing facility, while IBM continued to invest in leading edge research (Wessner, et al. 2013, 144–61; Wessner and Howell 2018).

59. The upshot of this decade and a half of building world leading research capabilities in the region culminated with the creation of the Global 450 Consortium in the early 2010s, dedicated to supporting the transition from 300mm to 450mm wafer fabrication facilities in the region. Alain Kaloyeros of SUNY Albany's CNSE was the driving force in forging the Global 450 Consortium that drew leading these leading semiconductor and nanoscale firms to locate their next generation advanced research facilities around Albany. He also understood that building a world class university research complex would provide a neutral ground on which leading competitors would be willing to collaborate on the joint research effort, thus contributing billions of dollars in state-of-the-art equipment and processes that would have exceeded the budgets of individual companies. As a result, the nanoscale complex currently employs 3500 research scientists and engineers in its work on their next generation nanoscale research (Agtmael and Bakker 2016, 63).

60. The case of the Albany nanoscale innovation cluster is exceptional in some respects, but instructive in others. The success of the state strategy was the result of three critical factors: the presence of a strong underlying research base in the postsecondary education system in the region matched by a strong corporate presence in IBM's research and production facilities; sustained long term investments by the state government over almost two decades and was supported by Governors of both major political parties; and the presence of a local social connector in the person of Prof. Kaloyeros who was able to promote his vision for the nanoscale complex by creating substantial buy-in from university officials, the state government and leading private sector firms in the field.⁶ The critical factor is that the Albany case represents a bottom up story driven by local university professors and officials, building partnerships with local economic development officials and a major multinational firm that was eventually supported by the State government. But it was never a top-down, bureaucratically directed initiative. As such, it represents an instructive example of networked and collaborative governance.

61. If this was the end of the story, it would be of limited interest for a study of experimental governance. What is most relevant, however, for the present study is the lesson drawn by the State of New York in recasting its entire panoply of regional development policies to extend and generalize the Albany model. The lasting import of the case rests on the redesign of New York State's policies for local economic development in 2011 to establish a competitive system across the state for the allocation of state funds through Regional Economic Development Councils (REDCs). Each region of the state was assigned responsibility for preparing their own economic development plans and using these plans as the basis for annual bids to the state for support of eligible projects. The rationale behind the approach was to draw upon the local knowledge of regional leaders to identify projects with the potential to transform the region's economy, in a similar fashion to that achieved by the Albany nanoscale cluster. In the reformed system, Governor Cuomo established 10 Regional Economic Development Councils (REDCs) which are responsible for formulating long-term strategic plans to promote economic growth in their regions. The councils are effectively a form of collaborative governance — public-private partnerships consisting of local experts and other stakeholders from business, the post-secondary sector, local government and civic associations. The REDCs represent a bottom-up approach to local economic development that relies on building collaborative relationships to identify

⁶ The success of the case is clouded somewhat by the fact that Kaloyeros was indicted in 2016 over the use of state funds (Wessner and Howell 2018, 46).

appropriate investments in regional assets across the state to create new growth opportunities.

62. To date seven rounds of funding have awarded \$5.4 billion to more than 6,000 projects. In the first round of funding decisions, a decision was made by the Governor and the Empire State Economic Development Corporation to allocate most of the funds to a bid proposal from the Buffalo region, an equally depressed part of upper New York State. While it is too early to draw conclusions about the lasting impact of this new policy initiative, it provides a valuable lesson for combining bottom-up, collaborative economic development initiatives with the ability to learn from individual cases and to redesign state wide policies to incorporate or build upon the key lessons learned.

3.2.2. The Cleveland/Northern Ohio Case

63. The case of Cleveland in Northern Ohio shares some similarities, but also significant differences with that of Albany and upper New York State. Like the Albany case, Cleveland reflects a former industrial powerhouse in the U.S. Midwest that was devastated by the process of offshoring and economic restructuring beginning in the early 1980s. What is significant about the Cleveland case is the way in which local civic leaders, educational institutions and philanthropic organizations have worked for more than two decades to overcome the combined obstacles created by a highly fragmented system of municipal governance in the region that seemed incapable of coping with the substantive issues posed by the challenge of offshoring and deindustrialization. According to Katz and Nowak, the antecedents for many of the more recent initiatives in Cleveland are found in Cleveland Tomorrow, which was formed in the 1980s to create an action agenda for the business community. The organization worked closely with leading philanthropies based in the region, particularly the Cleveland Foundation and the Gund Foundation to launch several projects that spun off new regional organizations, one of which was Nortech dedicated to helping local companies enhance their use of technology and fashion innovative products and processes, among others. Cleveland Tomorrow merged into the Greater Cleveland Partnership in 2004, which continues to play an important role in the region (Katz and Nowak 2017, 111–12).

64. Economic development efforts in Northeast Ohio are not led by any one organization but by interlocking combinations of public and private partners. The state government is conspicuously absent from board representation and play only a modest funding role.

65. Stakeholders in the region do not appear to have spent time searching for the perfect institutional structure; rather, they have created a lightweight brand under which existing organizations have collaboratively developed an integrated economic development agenda with limited government involvement. The Fund for Our Economic Future has been the main conduit in channeling philanthropic capital into economic development activities. Several organizations that have played a critical role in revitalizing economic development activities in Northeast Ohio have spun out of these origins. The Cleveland Plus Marketing Alliance (CPMA) was formed in 2006 by the Greater Cleveland Partnership (GCP), a chamber of commerce for Northeast Ohio with 16,000 members; Positively Cleveland, a tourism and convention attraction agency; Team Northeast Ohio (Team NEO), a private-sector-led, non-profit investment attraction organization that links all of the region's major chambers; and the Fund for Our Economic Future, a member-funded partnership of private and community foundations, academic institutions, local governments, individuals, and businesses that provides grants to regional economic development organizations.

66. The CPMA's primary purpose is to develop and implement a marketing campaign for the Northeast Ohio region focused on investment attraction. While Cleveland is the core, the brand calls attention to the broader region through Team NEO (which includes Akron, Canton, and Youngstown) through the concept of "the plus." The Cleveland Plus brand is also directed internally with the aim of creating a common identity for regional residents and businesses. The strategy was developed through a collaborative process. Four advisory committees were established: a Council of Regional Marketers made up of 120 representatives of regional arts, sports, business, and civic organizations and institutions; a Media Relations Advisory Committee to guide external marketing; an In-Region Advisory Committee to plan internal marketing; and a Young Professionals Advisory Committee to ensure that marketing messages and materials resonated with younger people.

67. The Fund for Our Economic Future reflects many of the underlying principles of networks and collaborative governance discussed in this report. In a presentation in 2016, one of the Directors of the organization, Bethea Burke, emphasized that the core requirements for effective collaboration in any regional organization were: galvanizing the leadership, building institutional capacity and creating high-performing organizations. One of the local initiatives supported by the Fund for Our Economic Future under the Cleveland Plus umbrella is Advance Northeast Ohio, the region's business development agenda. Launched in 2007, stakeholders framed a vision statement with four priority areas: business growth, talent development, inclusion, and government collaboration and efficiency. Fund members serve on six Action Teams that make recommendations on grant-making, research, and civic engagement strategy: Business Attraction, Retention and Expansion; Engage and Empower; Entrepreneurship and Innovation; Government Collaboration and Efficiency; Inclusion; and Talent Development. According to Burke, the Fund has sponsored several major initiatives to promote inclusive and equitable growth in the Northeast Ohio region: BioEnterprise, a cluster organization dedicated to growing regional biosciences companies by leveraging existing assets in the region; Jumpstart (funded by the Ohio Third Frontier program), a network devoted to supporting local entrepreneurship by accessing local pre-seed and seed investment funds, as well as angel and VC funds, and by connecting the entrepreneurs to local incubators and accelerators, as well as educational institutions; and NEOSCC, an organization devoted to making more sustainable use of land in the region by reducing urban sprawl (Burke 2016).

68. The various organizations and programs located in Northeast Ohio share some characteristics in common in the extent to which they have built on the research infrastructure embedded in the region's post-secondary educational institutions, including the Universities of Akron, Toledo and Kent State, as well as the way in which they have leveraged Ohio state programs to fund some of their key initiatives. Reflecting the fact that the region's universities are highly ranked and well resourced, the emphasis has been more on fostering university-industry connections than on direct investment in R&D. The main program used for this purpose is the Ohio Third Frontier program. Established in 2002 and extended several times since, the program provides funding to technology-oriented companies, universities and not-for-profit organizations to create innovative firms and products in the state. One estimate suggests that nearly half of the program's total grants were invested in NorthEast Ohio, especially in biomedicine and the biosciences. The funding has gone to support entrepreneurial startup programs and the Research Scholars Programs that funds university-industry collaborations. Funding from the Third Frontier program have been essential to the success of some of the key programs launched by the Fund for our Economic Future, including Jumpstart and TeamNEO. According to Wessner, "Third Frontier support has been critical to the operation of the specialized

nonprofit technology economic development organizations that have driven northeast Ohio's economic turnaround" (Wessner, et al. 2013, 116).

69. As in the case of upper New York State, the hallmark of the economic revitalization efforts in Northeast Ohio has been the extent to which they have been driven from the bottom up by community-based philanthropic, civic, and business organization. Civic entrepreneurs, including some key university professors and local business leaders, have been at the centre in guiding this process. State funding has played an important role in supporting these initiatives but not in a top down, centrally directed fashion. In this respect, the Northeast Ohio case reveals many of the features of networked and collaborative forms of governance. While it does not conform explicitly to a model of experimental governance, it exhibits some of the key features characteristic of Sabel's model of experimental regionalism. The initiatives have been led by a dense network of regionally-based organizations capable of re-evaluating and revising their ongoing purpose. And as Burke points out, much experimentalism has occurred through recurring discussions and interactions to refine policies and adjust strategies considering their evaluations of what has proven effective (2016).

3.2.3. The California Stewardship Network

70. On the face of it, California seems less than obvious to select as a case study in experimental governance. Some of the most prominent and successful industrial clusters in the state owe their origins and success to the unparalleled strength of the University of California system (Kenney and Mowery 2016), as well as the private and state universities and community colleges. Many other regions around the world aspire to the same level of well-being that Californians enjoy. Yet the overall wealth of the state masks some serious disparities in income and standards of living that exist both within and between regions. The state has also been home to some of the most interesting examples of bottom up, civic-led organizations dedicated to supporting the process of economic growth and revitalization throughout the state. One of the more interesting is the California Stewardship Network (CSN), an alliance of regional leaders committed to the economic, environmental and social well-being of their regions spread across fifteen regions of the state. It emerged in the aftermath of the global economic crisis in 2008-09 and built on the foundation previously laid by several different regional networks associated with the Alliance for Regional Stewardship. The Network plays a state-wide role by documenting and sharing promising practices and by supporting the development of new regional stewardship teams. Each regional team develops its own strategy. They have a diverse set of priorities, but share a common approach, which exhibits many of the key features of experimental governance. The strategies are: data-driven; integrate economic, social and environmental considerations; embody innovative approaches to public-private partnerships; engage of business, education, government and community leaders; and are outcomes-driven.

71. The Network reflects many of the key values and characteristics that Doug Henton and his colleagues associate with collaborative organizations and institutions, and that are key features of networked and collaborative governance. They view regional collaborative governance as a mechanism for weaving together expectations, patterns of interaction among regional actors and aligning responsibilities to devise solutions to complex economic, social and environmental issues. They view the element of the regional culture as an important, but overlooked, component in the design of regional development strategies. The essential criterion for success is finding the appropriate mechanisms to engage members of the community in a sustained effort to advance its opportunities. They maintain that the development of regional strategies, not only in the economic area, but

also education, health care, workforce training and the environment, must be data-driven and evidence-based. They define regional stewards as boundary crossing integrative organizations who tie different sectors of the community together to address these kinds of complex issues. Although they don't explicitly apply the term 'experimental governance' or 'experimental regionalism' to the activities of the regional stewards' organizations, they describe them as experimenting with multi-sectoral approaches that represent a new form of networked governance, which offers a middle road of pragmatic solutions between top-down traditional government hierarchies and private market approaches. They maintain that addressing the regional issues requires, "... a complex adaptive system that continuously selects among a variety of strategies to achieve outcomes as a result of trial-and-error learning through the interaction of individuals and organizations. Regional collaborative governance is such a system based on the continuous interaction of many individuals and organizations in agenda setting, decision-making, and implementation." (Henton, Melville, and Parr 2006, 13).

72. The Network currently comprises fifteen different stewardship teams across fifteen regions of the state. It recently co-sponsored the 8th California Economic Summit in Santa Rosa, California.⁷ Two of the teams that have a primary focus on economic development issues are the Los Angeles County Economic Development Corporation (LAEDC) and Joint Venture Silicon Valley (one of the initial founding teams in the Network). The LAEDC was the driving force behind the first-ever Los Angeles County Strategic Plan for Economic Development, which drew upon input from over 1,000 regional stakeholders. It authored a detailed cluster analysis of the economic structure of Los Angeles county that identified the fourteen largest traded clusters in the region and the five largest locally traded ones. The report was used to guide sector-based initiatives at the local, state and federal levels to support the future growth and dynamism of the key clusters. Consistent with the experimentalist approach, LAEDC used the cluster analysis to "benchmark progress, refine and track the measurements of success and adjust performance timelines" (Collaborative Economics 2013, 15). The Strategic Plan provides a clear guide for the LAEDC's goals and objectives, but it is not a fixed document. The ongoing monitoring of progress allows the it to adjust its course in response to changing economic conditions.

73. Joint Venture Silicon Valley (JVSV) predates the formation of the CSN by more than a decade and provided one of the founding models that the other regional teams drew inspiration from. Although Silicon Valley is widely viewed as the ultimate success case to be emulated in much of the regional development literature, most of JVSV's activities have been devoted to dealing with the social, economic and environmental consequences of the Valley's hypergrowth since its inception. Not surprisingly, one of the key initiatives launched by JVSV highlighted in the Network's literature is its effort to spur the growth of a new 'smart energy sector' by launching a large-scale demonstration project, the Smart Energy Enterprise Development Zone (SEEDZ). SEEDZ was launched in 2012 as part of JVSC's Climate Prosperity initiative. It was designed to pilot technologies and programs to increase access to sources of renewable energy. It was based in an 8.25 square mile enterprise zone that comprised parts of Mountain View and Sunnyvale. It established a space for testing new technology solutions, formulating energy policies, as well as new standards and measures for renewable energy. One outcome of the initiative was the formation of a community energy choice agency, known as Silicon Valley Clean Energy (SVCE) that included nine cities within the Valley, as well as Santa Clara county. Under the auspices of SEEDZ, individual projects focused on a series of opportunities and

⁷ <http://www.caeconomy.org/>.

challenges related to the scaling of best practices, establishment of standards and deployment of shared solutions. Each of them involved multi-stakeholder groups. In mid-2016, the SVCE was incorporated as an official agency and the activities of SEEDZ were subsumed under it (Collaborative Economics 2013, 31).⁸ SEEDZ is merely one of numerous initiatives that have been promoted by JVSC over the course of the past two and a half decades, but reflects the way in which the regional stewardship teams provide a collaborative platform to develop innovative solutions to unconventional and challenging economic problems in a highly experimental fashion.

3.3. Limits of US Exceptionalism

74. The U.S. case is unique in several respects. It differs from the European situation, and even from the Canadian case, in the extent to which philanthropic foundations and a wide range of civic organizations play a central role in devising some of the most innovative, experimental solutions to economic development challenges at the regional and local level. It is also unique in terms of the key role played by post-secondary research and educational institutions in devising and implementing some of these strategies. Even though the term multi-level governance is rarely applied to the U.S., it is evident from the cases that some of the most interesting success stories result from the ability to draw upon, and deploy, federal and state programs and funding in aid of locally and regionally devised strategies. In this respect, what has been termed “the hidden developmental state” (Block 2008) in the U.S. plays a much more significant role in supporting local and regional development than is generally assumed. What is most relevant from the U.S. examples is the way in which a range of different local initiatives, in both older industry regions like Albany and Cleveland, as well as more advanced regions like Silicon Valley, are developing collaborative and networked forms of governance to leverage available federal and state resources and formulate new development strategies. In so doing, they learn from previous initiatives in an iterative fashion that displays many of the characteristics of experimental governance.

⁸ cf. also <https://jointventure.org/initiatives/completed-initiatives/smart-energy-seedz>.

4. Applied Examples of Experimental Governance in Europe

75. Over the course of the past four decades, the overall direction and the operational design of regional development policy in Europe has undergone a major change. The focus has shifted from an interlinked set of programs and funding mechanisms with a primarily redistributive mechanism tied to national objectives of the member states to a more coordinated approach geared to community-wide goals and objectives. There is a greater recognition of the extent to which the goals of regional development and cohesion have been embedded within the framework of the broader social and economic objectives of the E.U. In the process, the role of Cohesion Policy has shifted away from an exercise primarily devoted to redistributing funds from richer member states to poorer ones, in favour of channeling resources across the continent towards a common set of economic development objectives and to improving regional planning in all parts of the Union (Manzella and Mendez 2009, 22).

76. This redirection of both the overall objectives and program spending of the structural funds involves its own challenges. There continues to be an underlying tension between the Union's goal of promoting the international competitiveness and innovative capabilities of the bloc and that of facilitating the convergence of individual member states and lagging regions within those states in terms of levels of income and employment opportunities. This trade-off received considerable attention in the report on *The Future of Cohesion Policy in the European Union* (Barca Report) prepared as part of the planning process for the design of regional development policy in the post-2013 period. According to the Report, the rationale for Cohesion Policy in the European Union should be to foster economic development in all places where economic efficiency exists through the provision of public goods and services. The Report labeled this alternative notion, a 'place-based' development policy (Barca, McCann, and Rodríguez-Pose 2011). The strategies adopted under a place-based development policy are territorially grounded, multi-level in their governance structure, innovative and tailored to the specific reality of different regions. The goals of such an approach include building institutional capacity, improving accessibility to goods, services and information in the region, and promoting innovation and entrepreneurship. The report defines place-based development policy in the following terms:

- a long-term development strategy whose objective is to reduce persistent *inefficiency* (underutilization of the full potential) and *inequality* (share of people below a given standard of well-being and/or extent of interpersonal disparities) in specific places,
- through the production of bundles of *integrated, place-tailored public goods and services*, designed and implemented by aggregating *local preferences and knowledge* through *participatory political institutions*, and by establishing linkages with other places; and
- promoted from outside the place by a system of *multilevel governance* where grants subject to *conditionalities* on both objectives and institutions are transferred from higher to lower levels of government (Barca 2009, 4–5).

77. In the discussion that follows, we view the cases of experimental governance and experimental regionalism as highly consistent with the underlying principles of the place-based approach.

4.1. Experimental Governance in Germany

78. The literature provides relative few examples of case studies that use the concept of experimental governance to analyze regional economic development. One of the more interesting exceptions is a several articles applying the concept to regional development policy in Germany in the late 1990s and early 2000s. Although all of them make explicit use of the term, each study applies the concept in a slightly different way — some focusing on the relative allocation of roles and responsibilities between the federal government and the *Länder*, some on the way Land governments have experimented with new approaches to regional development and some analyzing the way the federal government has used national competitions to circumvent the constitutional division of powers in Germany and stimulate experiments at the regional (sub-Land) level (Gualini 2004; Heidenreich 2005; Fürst 2006).

79. The Land level of government in Germany has been of interest to regional scholars and policy analysts since Charles Sabel identified it as one of the leading regional economies at the forefront of the transition from the old Fordist mode of standardized mass production to the emerging post-Fordist mode of flexible, knowledge intensive production in the late 1980s. The enhanced role for subnational levels of government arose, in part, from the significance attached to geographically-based local networks of firms and knowledge creating forces. The emerging knowledge-intensive industries in the new post-Fordist paradigm exhibited a marked tendency to cluster around regional growth poles. The evolving post-Fordist economy was witness to the formation and revitalization of vibrant industrial districts in these new regional economies — ranging from Tuscany and Emilia-Romagna in the Third Italy to other dynamic regional economies in Europe, such as Baden-Württemberg (Sabel 1989).

80. Several scholars have observed that recent trends in regional policy in Germany since this period, at both the federal and the Land level, involve distinctively experimental features. The degree of experimentalism arises from the fact that the initiatives promote institutional innovation as a central focus, reflecting the subtle interplay between institutional design and institution-building as part of an iterative, process of negotiated policy development (Gualini 2004, 332). The interest in experimentation has arisen from two different sources — the fact the federal government has become more interested in promoting efforts in regional development, particularly in emerging high technology sectors, despite the fact that it lies within the jurisdiction of the Land governments and the concern on the part of individual *Länder* in promoting restructuring from declining sectors to new and emerging ones. The interplay between these two forces has resulted in several interesting developments.

81. Fürst distinguishes between two different forms of experimental regionalism in Germany — one introduced by the *Länder* to develop regional policies within their own jurisdictions and the second by the federal government to bypass the *Länder* and work directly with local and regional groups across the country. In the former case, the Land government ‘regionalizes’ its policy by awarding funds to collectively produced regional action programs that are developed by different groups across the territory. In some instances, the Land has also implemented this approach via decentralized agencies that organize regional planning efforts to induce regional actors to collaborate in dealing with

issues on a problem centred basis. The principal regions to apply either of these approaches include Lower Saxony, Sachsen-Anhalt, North Rhine-Westphalia and Bavaria. The primary way in which the federal government has adopted an experimental approach is by defining broad policy objectives through different program objectives, but relying on the voluntary participation of regional and local actors to develop new initiatives to achieve those objectives. According to Fürst, the implementation of this form of experimental regionalism has entailed the intersection between ‘top-down’ strategies introduced at the federal level that are dependent on the ‘bottom-up’ reaction of regional structures, leading to local learning processes by relevant regional actors and organizations responding to the stimulus from above (Fürst 2006, 929–30).

82. The concept of experimental regionalism has also been applied at the Land level in a comparative case study of two German city-regions — Leipzig and Nuremberg. Heidenreich uses the concept in a slightly different way than the other authors who situate it more in the context of the debate over state rescaling. For Heidenreich, the central issue is that “... *the renewal of an economic region requires a simultaneous ‘re-invention’ of organisational and regional capabilities: Complementary to the restructuring of regional firms, the region, its boundaries, its identities, its governance structures, its ‘collective competition goods’ and its political and associational actors have to be ‘re-invented’ in order to face the uncertainties of international competition on costs and innovation*” (2005, 741–42). The range of policies that fall under this definition include network or cluster policies, the public provision of regional collective goods, such as incubators or accelerators, providing financial support to new or existing companies and the redesign of regional institutions to support these policies.

83. Although the study is somewhat dated, it is illustrative of the way in which the concept has been deployed in the German context. Both regions faced major challenges in the 1990s arising from the loss of manufacturing jobs and the shift of employment to services. Each responded to this challenge by adopting a style of policy-making corresponding to the experimental regionalist approach of ‘learning by monitoring’. In Heidenreich’s view, public policy followed an open-ended experimentalist approach in which public agencies collaborated with regional firms and other actors to set goals and implement policies. He documents several policy initiatives, including cluster policies at both a regional and a municipal level, based on this approach. The policies pursued differed across the leading sectors of the city-regions, thus were tailored to the realities of their industrial structure. They also involved some degree of bottom-up initiatives that were allowed to participate in the regional renewal process. In both cases the adoption of an experimental regionalist approach involved the shift from a regional development policy based on a stable institutional framework to a more open-ended, iterative and discursive approach designed to reinvigorate regional capabilities. The process in both cases elicited a collective learning process in which the region, a collective steering group and a mix of different organizational actors, collaboratively designed regional policies to overcome some of the challenges encountered in their respective innovation systems. The result was a new discursive form of regional policies that integrated formerly isolated actors from the realms of the polity, economy, administration and scientific sectors (Heidenreich 2005, 754–56).

84. At the federal level in Germany, the primary means by which the experimental approach has been implemented is through the initiation of regional competitions. Several early examples of this approach are discussed in the literature, including the ‘Regions of the Future’ competition, the ‘Active Regions’ competition, the InnoRegio competition, as well as the BioRegio contest of the early 1990s. The hallmark of this approach is that it is

initiated in a top-down fashion but elicits bottom-up responses from a variety of regional and local actors. It can include a range of initiatives, from primarily market-based ones to more cooperative or collaborative ones. In the case of the InnoRegio competition, many regions went through a two-stage process that resulted in 23 regions being selected to receive financial support from the federal ministry. The winning regions encompassed a wide range of networks in manufacturing or manufacturing-oriented services in the fields of biotechnology, new materials, mechanical engineering and renewable energy. The regional competitions were judged to be effective in deepening and solidifying regional networks and cooperation. While they served as catalysts in strengthening pre-existing regional networks and supporting the implementation of some ideas, concerns were raised over the lack of legitimacy of the network-based decision-making process and the challenge of ensuring that the public interest was fully reflected in the specific interests of the network members (Weichmann 2005).

85. In 2007, the German Ministry for Education and Research followed up previous competitions by launching the Leading-Edge Cluster Competition (LECC), or 'Spitzen' clusters, as a flagship program designed to strengthen regional clusters. The goal was to make Germany a global leader in solving select global challenges in fields such as climate change and energy use, health and nutrition, mobility, security and communications. Fifteen clusters were selected in three waves between 2008 and 2012 and received funding of up to €40 million each for a 5-year period. The funding instrument promotes cooperative research among local companies and universities, while cluster organizations ensure that the projects are oriented toward a common strategy related to the global challenges. This program is meant to simultaneously improve the innovative performance of the regions selected and ensure that the funding helps cluster firms attain an international leading 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. According to Rothgang et al. (2015), the intensity of network cooperation increased in all clusters of the first and second competition rounds due to improved awareness of potential partners as consequence of the LECC. Newly formed linkages also were formed to a substantial extent, even among actors who did not receive direct funding for a joint R&D project, which indicates there was an additional, mobilization effect of the policy (Canter, Graf, and Hinzmann 2013).

4.1.1. The Case MicroTEC Südwest in Baden-Württemberg

86. One of the Spitzen clusters that has been the focus of considerable attention in the cluster and regional innovation literature is MicroTEC Südwest in Baden-Württemberg. Baden-Württemberg is notable for the dense network of research institutes and institutes of higher education that populates the region, 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 regional innovation system is the Steinbeis Foundation with its 400 centres located at regional universities that link the region into relevant federal policies to support innovation and clusters. Steinbeis also supports participation by B-W firms and institutions in European research and innovation projects (Heidenreich and Krauss 2004, 199–200; Benneworth and Dassen 2011, 48). Despite this rich endowment of research capabilities, the region has not been without its own challenges, particularly 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 have led to government policies to support new software centres, biotechnology parks and centres for fuel cell technology, among other initiatives (Heidenreich and Krauss 2004).

87. 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 emphasizing 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 discussed above. Morgan describes the role played by the Commission in terms of “the regional state as animateur of technological change and regional renewal” (1999, 90). 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. In addition, the different parts of the state proved successful in the federal BioRegio competition, which also contributed to the diversification of the B-W economy. In 2008, the Land published its own regional cluster atlas detailing the clusters located in its twelve regions, as well as the innovation support organizations present in the regions.

88. The more recent ‘Spitzen’ Cluster competition is a further example of how the adoption of an experimental governance approach at the federal level has reinforced efforts by the Land at economic diversification, regional innovation and greater collaboration. The MicroTEC Südwest ‘Spitzen’ cluster, developed under the conceptual leadership of the Steinbeis-Europa Zentrum (SEZ) in Stuttgart, was one of the fifteen selected in the national competition and is focused on developing and implementing new products in the five areas above, based on the development of new general purpose technologies in miniaturized electronic systems in the fields of nano-, micro- or biotechnologies leading to the integration of these microsystems into a range of new intelligent products. 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 small and medium-sized enterprises (SMEs). The research activities of the cluster organization are focused on two application areas (out of the five that are priorities for the program) in the fields of health care and mobility, as well as two 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 (Sautter and Clar 2012; Clar, Hafner-Zimmermann and Sautter 2014; Clar 2016).

89. Although the MicroTEC Südwest cluster organization provides an interesting illustration of the way in which the federal variant of experimental regionalism in Germany intersects with efforts by the Land government to stimulate economic diversification, it is even more instructive for present purposes because of the STRACLU decision-making process that was built into the design of the cluster. The process integrates key stakeholders in terms of the cluster board and a strategy panel with a set of strategic policy intelligence (SPI) tools in a continuous learning cycle involving three main stages:

- a stocking-taking stage designed to review the cluster’s position in the global context using evaluation, audit and benchmarking policy tools;
- a forward-looking or longer-term perspective on the potential impact of the initiative that involves foresight and impact assessment tools; and

- an action planning stage that develops roadmaps for the achievement of milestones for the project with specific actions to be undertaken.

90. The STRACLU process establishes an operational learning cycle to monitor the progress of the cluster initiative through these various stages and to guide the cluster participants in their strategic decision-making with respect to their own activities. It is defined as a strategy process that involves a broad cross-section of public and private actors designed to share strategic knowledge from global sources with actor/region-specific knowledge in the cluster. The aim of the STRACLU policy process is to both contribute to the success of the cluster initiative itself, but also to transform it into a ‘smart innovation system’ that continuously monitors its competitive environment, assesses its progress toward its goals, builds local competencies and capabilities and reassesses the methods used to achieve its objectives (Sautter and Clar 2012; Clar 2016). While it does not explicitly use the language of experimental governance, it reflects many of the underlying features or qualities that Sabel and others associate with experimental governance.

4.2. Brainport Eindhoven

91. Another region that has emerged as a leading centre for collaborative and experimental governance is Eindhoven in the Netherlands, which together with Leuven and Aachen, forms part of the cross-border region encompassing Belgium, Germany and the Netherlands and is referred to as the Top Technology Region or ELAt (OECD 2013, ch. 9). Eindhoven, best known as the home to Philips Electronics, suffered through the same process of industrial restructuring in the 1990s that afflicted many other regions in Europe and North America, when Philips drastically reduced its manufacturing activity and the size of its workforce. However, the region was also home to the Philips research lab, NatLab, which operated in the traditional mode of a corporate R&D laboratory. In the early 2000s, the lab underwent a dramatic reorganization as Philips adopted the ‘open innovation’ model and began to collaborate with a wide range of external companies and research institutions in the conduct of its research activities. The lab was renamed the High-Tech Campus Eindhoven and has become the centre of a dynamic innovation hub that opened its doors to outside companies and researchers to establish themselves in the research park and be able to access Philips’s research facilities. This has brought more local companies into Philips’ network and establish a larger research ecosystem that now comprises more than one hundred additional organizations, including many global multinationals. In 2005 the hub moved to the next stage when the Holst Centre was established as a joint venture between TNO, the Dutch national research organization and IMEC, the Flemish Centre for Wireless Autonomous Microsystems, in Belgium, with financial support from both the Dutch and Belgium governments. IMEC, itself, was set up by three universities, to work on the technologies and manufacturing processes needed for the next generation of semiconductors. It now conducts research with over 70 companies around the world. IMEC invites scientists from industry to work on problems of special interest. The Holst Centre plays a role like that of CNSE in Albany as a neutral platform for companies, public sector researchers and international scientists to share knowledge in two critical technology areas: wireless sensors and flexible electronics. The concentration of both corporate and public sector research expertise in the region has earned it the nickname of Brainport and made it an attractive centre to other entities drawn to its concentration of research expertise (Benneworth and Dassen 2011, 42; Agtmael and Bakker 2016, 82–83).

92. The strength of the region as a corporate research centre has been reinforced by changes that have taken place at the Technical University of Eindhoven in the same period. The leadership of the university has been strongly supportive of the open and collaborative innovation model and contributed to joint research undertakings between the university and the High-Tech Campus. The university also strengthened its partnership relations with neighbouring institutions, particularly the Technical University in Aachen and the high-tech institutions in Leuven, thus helping to lay the basis for the emergence of the cross-border region. The formalization of the cross-border region was an initiative of the three local mayors who recognized the value of building upon the collaborative relationships that had already been established by local research institutions. The regional association has been instrumental in supporting local business development through a series of cluster projects that have drawn upon joint funding from the member regions and been able to make use of European Territorial Co-operation funding. The resulting set of joint R&D projects supported through the funding have strengthened the cross-border linkages (OECD 2013, 226).

93. The concentration of research in the region has been further reinforced by the presence of ASML, a former spinoff from Philips and manufacturer of photolithography equipment. ASML has made major investments in its own research capabilities and pioneered the transformation of its relations with its own customers and suppliers as part of the broader process by which ‘global value networks’ (GPNs) are being transformed into ‘global innovation networks’ (GINs) (Chaminade et al. 2017). As the size of the network expanded, along with the range of activities under its umbrella, a number of participants, especially in the local SMEs, realized that they needed their own association to represent the growing range of the network’s interests. The leaders of this effort would clearly fit the model of local ‘civic entrepreneurs’ discussed above. The result was the creation of Brainport Industries as the umbrella organization that represents the interests of the local companies and manage its relationship with the Technical University of Eindhoven (Agtmael and Bakker 2016, 90–91).

4.3. Is S3 a Case of Experimental Governance?

94. The preceding discussion of experimental regionalism and collaborative governance in Europe raises obvious questions about the Smart Specialization Strategy (S3) paradigm for European regional development policy and its relation to experimental governance. The S3 program is now the largest regional innovation policy program in any jurisdiction in the world with a total budget of €80 billion over the period from 2014-2020. The literature on S3 is extensive and growing. There are several book length treatments on the development and intent of the approach (Foray 2015; McCann 2015). In addition, there is both a smart specialization platform hosted by the E.U. for sharing experiences and best practices in the implementation of the approach,⁹ hosted by the Joint Research Centre’s Growth and Innovation Directorate in Seville, Spain, which also co-sponsors a series of annual conferences examining the impact and effectiveness of S3.¹⁰ Given the wide range of expertise mobilized in Europe to study the effects of the approach, this is not the place to revisit those arguments and debates. The question of concern here is whether the adoption of the S3 paradigm at the Europe-wide level fits the model of experimental governance and whether there are lessons to be drawn from its implementation, both in

⁹ <http://s3platform.jrc.ec.europa.eu/>

¹⁰ <http://s3platform.jrc.ec.europa.eu/-/second-smarter-conference-on-smart-specialisation-and-territorial-development?inheritRedirect=true/>

terms of supportive conditions, as well as potential obstacles, for experimental governance. The following discussion is confined to whether S3 corresponds to the dimensions of experimental governance outlined above, as well as potential pitfalls and limitations that have broader implications for the implementation of the approach.

95. S3 is predicated on the importance of the process of entrepreneurial discovery for innovation and growth as originally laid out in a report for the E.U. by Foray, David and Hall in 2009. The essence of its insight is that it believes 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 succeed. According to some of its leading proponents, “The entrepreneurial discovery process is basically economic experimentation with new ideas, which, of course, will to a great extent emanate from scientific and technological inventions” (McCann, Ortega-Argiles, and Foray 2015, 464). They insist that it is imperative to distinguish ‘entrepreneurial discovery’ from ‘entrepreneurial innovation’ — with the notion of discovery resting on the necessity of opening new domains of economic opportunity, which can launch a dynamic of structural change. They share Sabel’s (and Rodrik’s) assumption that this cannot be done effectively by a central, hierarchically organized bureaucratic department or agency, but must comprise those with the ability to discern where the economic opportunities lie. The implication for regional development is that the discovery process must necessarily involve the unfolding or revealing of which domains of R&D or innovative activity a region economy should base its future growth path on. Thus, “the discovery and collective experimentation process . . . must be carried out within the framework of strategic interactions between the government and the private sector” (McCann, Ortega-Argiles, and Foray 2015, 469).

96. The policy implication of this approach is that that entrepreneurial discovery requires public authorities to help key actors in the regional economy explore or discover where the economic opportunities for the region lie and then implement a series of policies to exploit the possibilities that have been identified. Many of the key features of experimental governance are intrinsic to the S3 policy process. It is predicated 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 dictate that it must involve a set of outcome indicators to monitor and track progress made in the implementation of the objectives established through the entrepreneurial discovery process. This must involve a diverse group of regional stakeholders in the design, delivery, monitoring and policy evaluation aspects of the program. The coordination of policy systems across the regional, national and supra-national, or European-wide, levels is also essential, thus incorporating a strong degree of multilevel governance in its implementation. An effective S3 agenda process thus involves many of the key features associated with the various forms of experimental and collaborative governance. But it must also, by extension, force a certain amount of attention to be paid to the institutional underpinnings of the regional innovation system and its associated governance mechanisms (McCann, Ortega-Argiles, and Foray 2015, 473).

97. This last point highlights a potential weakness of the approach, especially in regions with less developed institutional and governance mechanisms. There is a growing body of literature in regional economics and evolutionary economic geography that documents the close association between the quality of governance institutions in a region and its level of economic performance (Morgan 1997; Farole, Rodriguez-Pose, and Storper 2010; Rodriguez-Pose and Garcilazo 2015). The question this raises for the S3 policy process is

whether it makes “heroic” assumptions” about the state of governance, particularly in the lagging regions that are most in need of its potential benefits. Recent research on the nature of new path development in regional innovation systems, which is what the S3 approach is designed to generate, argues that lagging regions may be deficient in the precise types of organizations and institutions that are most needed for the approach to succeed (Marques and Morgan 2018).

98. There is an important distinction in the literature between the role of organizations and institutions in innovation generally, and regional development more specifically (Hollingsworth 2000). Building on this distinction, researchers argue that the difference between organizational thickness or thinness and institutional thickness or thinness has critical implications for the effectiveness of policies designed to promote new path creation at the regional level, especially in lagging regions. The former refers to the presence (or absence) of a critical mass of firms, universities, other public and private research institutions, intermediary organizations and industry or civic associations, all of which contribute to the success of the various forms of governance discussed in this paper. The latter refers to the presence or absence of both formal institutions that include laws, rules and regulations, as well as informal institutions that include norms and culture, such as trust and social capital that are important for collective learning at the regional level and the effective exchange of knowledge between partners (Tripl, Asheim, and Miørner 2016, 26–27). Organizationally thin regions, by definition, may lack the necessary organizations, such as higher education institutions (HEIs) or clusters of innovative firms, that provide the locus for the entrepreneurial discovery process, while institutionally thin regions may lack the underlying culture of trust and cooperation that provide the fertile ground on which effective forms of collaborative and networked governance can grow.

99. As the preceding case studies indicate, these qualities are closely linked to the concepts of experimental governance or experimental regionalism. Some of the most effective examples involve local actors forming new developmental coalitions to leverage the potential value of research-intensive institutions. Yet there is also evidence from the growing literature on the experience with S3 of the limits entailed in an excessive reliance on developmental strategies focused around public sector research institutions that are cut off from the local business sector because firms lack the absorptive capacity to take advantage of the new research capabilities housed in those institutions, signifying a lack of “regional absorptive capacity” (Morgan 1997), or else, because of a mismatch between the synthetic research base developed in the region and the analytical knowledge base needed by regional firms to advance their innovative capabilities (Isaksen and Tripl 2014).

100. These insights have been elaborated on in recent analysis of the limits to the S3 approach. One key assumption the approach makes is that regional elites are sufficiently committed to the S3 model to make it work. The critique draws upon research that documents the uneven nature of governance institutions across the E.U. and suggests that the lagging regions, which face the greatest challenges in implementing S3, may be the ones with the weakest governance institutions. Given the connection between S3 and experimental governance, it is likely that lagging regions will encounter similar problems in adopting an experimentalist approach. A second, but equally important issue concerns the quality of public administration in these regions and whether public sector organizations have the administrative capacity to successfully implement the process of entrepreneurial discovery. Although it is primarily a bottom-up process for charting future regional innovation potential, it nonetheless makes considerable demands on the administrative capacity of regional governments. The third point echoes the concerns noted above about the thickness and quality of the regional organizations that are essential for success. This is

the result of the regional innovation paradox, “the fact the regions with the greatest need of innovation funds — namely the lagging regions — are precisely the regions with the lowest capacity to utilize such funds on account of their weak absorptive capacity” (Marques and Morgan 2018, 282–83). The absence of this absorptive capacity means that funds made available in these regions through regional development programs are more likely to be absorbed by public sector HEIs that have the capacity to use them, but that may be poorly connected to the private sector actors who are essential for the success of the entrepreneurial discovery process. Thus, despite the experimental nature of S3, the implication of these critiques is that the very factors that limit the growth potential of lagging regions, particularly the quality of governance institutions and the lack of an institutional culture of trust and cooperation, will hamper the effectiveness of the entrepreneurial discovery process itself and limit the ability of these regions to engage in forms of collaborative or experimental governance.

101. This suggests that the implementation of an experimental governance approach depends as much, if not more, on what Sotarauta and Suvinen term institutional innovation for new path creation. There are several reasons for why the past legacy of organizations and institutions can significantly affect the potential for new path creation in lagging regions. Features of the initial conditions under which institutions or organizations are formed can become enduring constraints. The organizational structure can become locked-in to a comparatively narrow subset of routines, goals, and future growth trajectories. Historical precedent shapes the whole institutional matrix because each new component is adapted to fit with the elements of the pre-existing structure, giving rise to a strong degree of persistence among structures as the ‘sunk costs’ of abandoning them becomes excessively high (Sotarauta and Suvinen 2018, 90–91). The scope for reversing previous choices can restrict opportunities for forms of path development over time (David 1994). New path creation may thus require active entrepreneurial intervention by a range of actors, including those in the scientific and policy spheres that lie beyond the normal category of business entrepreneurs. This, in fact, is partly what was observed in some of the U.S. cases documented above. Building on this perspective, Sotarauta and Suvinen divide institutional agency into two categories — institutional entrepreneurship and institutional navigation. The former refers to “*conscious efforts to pool and mobilize resources and capabilities to create and/or change institutions*”, while the latter “*focuses on the ways that actors deal with mixed messages of many institutions [...] all the time formulating and implementing their own strategies*” (Sotarauta and Suvinen 2018, 90–91). In a case study of Tampere, Finland they conclude that the process of new path creation depends upon institutional agency by entrepreneurial actors from a range of sectors to shape new economic opportunities. In the process, actors acquire new ways of viewing the economic situation of their cities or regions and constructing new economic opportunities. Over time, the new sets of institutions or organizations created become embedded in the region and can unlock a range of new economic opportunities.

5. Implications for Less-developed Regions

102. The clear implication of the preceding discussion is that for experimental governance to work in lagging regions, greater attention must be paid to the underlying conditions of institutional capabilities and regional culture that are critical variables in accounting for different patterns of regional growth. Institutional capabilities in this sense should be seen to involve elements of both collaborative and networked governance as either pre-, or at the very least, co-requisites for the successful implementation of experimental governance. But it is also important to recognize that there are two critical dimensions to institutional capabilities: the first is the administrative capabilities required to implement and coordinate processes of experimental discovery, such as those involved in the S3 approach. As Radosevic argues, *“policy coordination capabilities are as crucial as in-house government capacities. Capacity to coordinate across public sector agencies and to effectively engage in collaboration with private sector actors is essential to successful innovation policy”* (Radosevic 2018, 18). For these coordination capabilities to compensate for a weak regional culture of collaboration or the lack of civic or business associations capable of engaging in collaborative ventures, public sector agencies must establish metaphorical ‘tables’ where private sector actors can learn to engage in ‘talk’ with the public sector and each other. These ‘tables’ are an essential prerequisite for developing mechanisms for collaborative or networked governance. *“Talk refers to communicative interaction, designed not simply to transmit information and relay preferences, but to achieve mutual understanding. In the case of prospective learning, information from other experiences where learning has worked [...] can be valuable as a stimulus”* (Storper 2002, 140). The kind of talk that can build this level of trust occurs most effectively within the context of public institutions. However, the inability to engage in the talk that can build trust and mutual understanding often reflects the absence of a tradition that values the presence of these kinds of public institutions. Thus, talk must be supported by a range of incentives that encourage the parties to maintain their involvement with these institutions. Small, repeated experimental interactions may prove effective as a mechanism for getting the parties to work together in a limited fashion and facilitate institutionalized learning (Gertler and Wolfe 2004a).

103. Where this process succeeds, these institutions can play an important role in connecting public sector agencies to economic actors in the private sector and creating the basis for more networked and collaborative forms of governance. The type of institutions prescribed here are close to what Radosevic labels ‘learning networks’, which he views as mechanisms for capturing the knowledge benefits generated when communities of practice form across diverse stakeholder groups in various sectors of the economy. These learning networks can serve as a locus for ‘action learning’, defined as a form of learning by doing, where groups of participants engage in a process of developing solutions to complex problems where there is no obvious or apparent solution and where the participants can learn from their engagement with each other. *“The formal character of the learning network provides an ‘institutionalized organization platform’, which represents a permanent structure for identifying knowledge gaps and satisfying knowledge needs [...]”* (Radosevic 2018, 45). The learning networks thus serve as the locus or forum in undertaking small, experimental approaches to developing innovative regional policy initiatives by building a common basis of knowledge and understanding and beginning to establish the conditions of ‘trust’ that are essential for collaborative governance to work (Sabel 1992).

104. 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 deals explicitly with the need for institutional innovation or entrepreneurship discussed above by introducing the notion of the Schumpeterian development agency (SDA)—an agency with the mandate and ability to undertake small scale experiments, correct errors and learn from its mistakes—in other words, to engage in a process of experimental governance. The process is overseen by a project manager, which is the institution empowered to undertake small scale experiments through a collaborative search process. The type of agency best equipped to play this role is “*an autonomous entity with a mandate to experiment by assembling a portfolio of projects and carefully monitoring the portfolio yet remaining accountable for the results of the experimentation*” (Kuznetsov and Sabel 2017, 54–55). 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 Taiwan, Ireland or Chile. The authors identify several critical factors that contribute to the success of this type of agency: they start from existing programs or organizations and redefine their purpose; they are situated at the organizational periphery of the public sector and are more insulated from the influence of special interests. By linking successful experiments to the organization design of the agency, they help reshape the institutional framework that supports innovation (Kuznetsov and Sabel 2017, 58).¹¹ While there are no examples provided in the literature for regional versions of these SDAs, the proponents suggest that the model could be valuable in introducing forms of experimental governance at the regional level.

5.1. Case Study of North-East Romania

105. We have searched the literature for examples, successful or otherwise, of experimental governance in lagging regions of Europe, with only a limited degree of success. One case that does not exhibit all the features discussed above, but presents some illustrative points is that of the North-East Region of Romania, which is noteworthy for the way it has implemented the S3 process. Romania received special attention under the E.U. project, RIS3 Support in Lagging Regions, that was managed by the Joint Research Centre’s S3 Platform in Seville because of the weak institutional support for S3 in the country—namely the highly centralized nature of the country and the lack of subnational administrative jurisdictions with responsibility for the Smart Specialization Strategy. Within Romania, the North-East Region received was afforded priority because of its relatively large landmass and population and its low level of per capita income. Prior to the introduction of S3, the RDA in North-East Romania had gained some practical experience developing its own Regional Innovation Strategy in the mid-2000s and had gained some experience working with regional stakeholders in a bottom-up and consultative manner. What is most notable about this case, according to Marques and Morgan is that “*one of the poorest regions in the country [...] proved to be one of the most pro-active in terms of mobilizing what little institutional capacity it possessed (which is) partly explained by the calibre of the RDA within and the quality its network connections outside the region,*” (2018, 288).

¹¹ For a slightly different application of the SDA concept, also termed peripheral agencies, cf. (Breznitz and Ornston 2013; Breznitz, Ornston, and Samford 2018).

106. The challenge for the RDA in implementing the S3 strategy was all the greater because the national innovation system in the country is dominated by a linear model of innovation in which the universities receive priority attention in terms of investment but remain substantially disconnected from the business firms in the private sector, with only a limited amount of technology transfer between the two and relatively few spin-offs (ADR Nord Est 2016, 6-7). This made the obstacles to overcome in implementing the S3 approach all the greater. However, the combination of a pro-active RDA, which has clearly benefited from an internal policy learning process and strong support from the European Commission through the Lagging Regions Project has made some notable headway.

107. Despite the administrative and institutional limits on its position, the RDA in North-East Romania has demonstrated considerable scope for initiative in leveraging external, E.U. funding to study and analyze the features of the regional innovation system, adopting best practice in implementing the entrepreneurial discovery process through its broader network connections, and then working in a bottom-up, consultative fashion to implement the strategy. The RDA undertook a detailed analysis of the industrial sectors with the potential to form competitive clusters as part of the formulation of the RIS3 strategy. 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 Smart Specialization Strategy was formulated based on the SWOT analysis undertaken by the RDA, the existing regional potential for innovation services and technology transfer, an analysis of the position of regional industries in existing value chains, an entrepreneurial discovery process and public consultation conducted between 2013 and 2016, and potential linkages with existing European and national policy priorities for innovation and competitiveness. The resulting vision for 2022 for the North-East Region that emerged from the process focused on promoting sustainable development in six vertical sectors: Agrifood, Biotechnologies, Textiles and new materials, Health and Tourism, ICT, and Environment (ADR Nord Est 2016, 17). In addition to the sectoral focus that was adopted, several horizontal policy priorities for action were also spelled out: developing the innovative competence 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 (ADR Nord Est 2016, 20-21).

108. Neither the strategy, nor the specific initiatives identified, are particularly noteworthy in themselves. In fact, comparable strategies could likely be identified throughout Europe and other industrial regions. What is most relevant for the present study is the way the regional RDA, working in an institutionally thin and underdeveloped context, was able to devise a process that demonstrates some of the key features of collaborative governance to formulate the strategy. The RDA relied on a process that linked the existing public administrative structures in the region to other elements of what it termed the 'quadruple helix': the education system, firms and organizations in the economic system and civil society. The resulting process explicitly incorporated three elements of collaborative governance as discussed above: consultation, engagement and collaboration to formulate a common strategy and action plan. In addition to funding from E.U. sources, the strategy has tapped into other international programs to provide funding for its initiatives. And finally, and perhaps most significantly, it has built in a process that is both iterative and involves a degree of self-monitoring by building on its earlier participation in European initiatives, incorporating a policy learning process from its experience in those initiatives and subjecting the whole strategy to external assessment by IPTS in Seville

(Sandhu, 2018). For the purposes of the present study, the significance of this case study lies in the ability to draw upon international networks, to create an internal policy learning process, which is experimental in the sense it is both iterative and self-monitoring, and then to incorporate some elements of collaborative governance in devising its S3 strategy. While the challenges ahead for the region should not be minimized, the case suggests that it is possible to tackle existing institutional weaknesses and economic barriers through a process that builds on recognized elements of experimental governance.

6. Conclusion

109. The preceding analysis suggests that there is no fixed policy approach for applying the concept of experimental governance, particularly at the regional and local level. Earlier presentations of the concept (Sabel 1994, 1996) tended to apply it more at the regional level, while Sabel's more recent writing (Sabel and Zeitlin 2012, Kuznetsov and Sabel 2017) has used it more at the national level. The infrastructure of institutions and organizations available to support the implementation of an experimentalist approach differs considerably across different jurisdictional scales – from the national to the regional and the local. It also differs considerably between the North American context and the European, and within Europe between leading and lagging regions. The clear implication of this degree of variation is that there is no single clear-cut approach, or blueprint, for the implementation of experimental governance.

110. It is also evident that in those jurisdictions that are less institutionally 'thick' and in which the regional or local state plays a more indirect role, linking experimental to other forms of governance, such as networked, collaborative and associative governance, is essential to build the necessary base of support in both the private sector and civil society, for it to succeed. If there is one clear and consistent message that emerges from the various case studies documented across all regions in this report, it is the necessity for governments interested in experimentalism as an approach to regional economic development to learn to work in a more associative and collaborative manner, regardless of the jurisdiction.

111. The case studies documented also underline the importance of self-monitoring, iterative forms of policy and program development, and continuous policy learning for experimentalism to work. Given that there is no clear handbook or blueprint to use in instituting the approach, the likelihood of failure, either full or partial, is high – at least in the initial instance. Hence the need to constantly monitor the effectiveness of the policies and programs being implemented, learn from mistakes, and then to recalibrate to ensure a higher chance of success in the next round. It also suggests the potential value of creating peer to peer networks for both organizations and jurisdictions interested in adopting the experimental approach. The way in which the California Stewardship Network has shared best practices and policy learning across the fifteen regions that participate in it or the Smart Specialization platform hosted by the Joint Research Centre in Seville, Spain has done so for S3 in Europe, suggests there is scope for a similar network of peer organizations interested in sharing their experience in working in an experimentalist mode. And as the Romanian case study suggests, this can be especially useful in sharing learning experiences across leading and lagging regions.

112. The equally important lesson to draw from these case studies is that experimental governance should not be conceived of as a specific policy approach or set of policy tools, comparable to the S3 approach. Rather, it should be regarded as a conceptual frame of reference for thinking about how to devise, implement and learn from a complementary set of tools to promote regional economic development -- one that must be subject to constant monitoring and revision. In other words, for experimentalism to succeed, it must be subjected to the basic principles of experimental governance. The considerable degree of variation in the case studies, whether from the more successful North American, as well as some of the European cases, suggests that higher levels of government, including the E.U., interested in supporting the approach can best contribute to its success by focusing on the

need for regions and localities to think and act in ways that build on the underlying principles found in the approach.

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