The experimentation–accountability trade-off in innovation and industrial policy: are learning networks the solution?

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Abstract

The exact nature of industrial/innovation (I/I) policy challenges and the best way to address them are unknown *ex ante*. This requires a degree of experimentation, which can be problematic in the context of an accountable public administration and leaves the question of how to reconcile the experimental nature of I/I policy with the need for public accountability, a crucial but unresolved issue. The trade-off between experimentation and accountability requires a governance model that will allow continuous feedback loops among the various stakeholders and ongoing evaluation of and adjustments to activities as programmes are implemented. We propose an 'action learning' approach, incorporating the governance mechanism of 'learning networks' to handle the problems of implementing experimental governance of new and untried I/I policies. We resolve the issue of accountability by drawing on the literature on network governance in public policy. By integrating control and learning dimensions of accountability, this approach enables us to resolve conceptually and empirically trade-offs between the need for experimentation and accountability in I/I policy.

Key words: innovation policy; industrial policy; accountability; experimentation learning networks; network governance; public policy.

1. Introduction

The precise nature of constraints to improve innovation capacity, growth, and sustainability and how best to address them by industrial/innovation (I/I) policy are unknown *ex ante* (Rodrik 2007; Crespi et al. 2014; Dutz et al. 2014; Radosevic et al. 2017). Although policymakers might agree about the problems involved, there is rarely a consensus on the policy instruments that should be used to address them. Implementing I/I policies requires collaboration with private actors, who often better understand the issues involved than policy designers. Hence, the conventional assumption of policymakers as the principal and firm, research–technology organisation or university as the agent is of little relevance.

The problems that innovation policymakers are dealing with are complex, interrelated, and with uncertain outcomes. A policy that integrates all public actions influencing innovation processes is still a more holistic ideal than an elaborated blueprint (Borrás and Charles 2019). Policymaking is influenced not only by the organisational capacity of the public administration in managing and enforcing policy (Borrás 2011) but also by the processes of mutual adjustment of participants to resolve the issues not initially envisaged (Hirschman and Lindblom 1962). Instead of 'enlightened' policymakers with perfect foresight, it is much more realistic to conceptualise policy-making as adaptive (Teubal 2002), 'muddling through' (Lindblom 1959), and a highly political process (Zachary Taylor 2016). However, policy-making is also a learning and collective process (Teubal 1996) where the aim is not to maximise a well-defined objective function.

Instead, I/I policy-making is an evolutionary and institutionalised process of co-ordination, articulation, and matching of the emerging supply and demand for the relevant technological and non-technological capabilities of innovation stakeholders (Justman and Morris 1995; Teubal 1996, 1997). Policy-making has its life cycle and, in its initial stages, consists of a succession of experiments and routinisation of policy afterwards (Teubal 1997). The institutional context, which straddles boundaries between different actors in the innovation policy process, is often more impactful than the specific policy priorities (Rodrik 2007).

Based on these tenets, a new I/I policy perspective has emerged, which conceptualises policy as a 'discovery process' (Rodrik 2007), in which 'frontline-level bureaucrats' (Sabel and Zeitlin 2010) are vital to policy success or failure. This conceptualisation is rooted in development projects (Hirschman Albert 2015) and several intellectual contributions that acknowledge the *ex ante* unknown nature of the solutions to growth constraints (Hausmann et al. 2005; Hidalgo et al. 2007; Avnimelech and Teubal 2008; Kuznetsov and Sabel 2011; Lin 2012; Foray et al. 2012a; Lee 2013). These studies propose detailed methodologies to identify these constraints and how they should be addressed.[1]

New I/I policies recognise that government, as the policy principal, does not possess all the knowledge required for correct policy design and implementation. Equally, the beneficiaries of these policies lack perfect foresight about their long-term opportunities and constraints. All these views are partial; no single actor encompasses a panoramic view of the

technological challenges (Dutz et al. 2014). Thus, I/I policy is conceptualised as a process that anticipates and shapes technological change and related societal changes and its effects rather than pursuing *a priori*–defined target (Sabel 2005; Wilson and Furtado 2006; Weber and Rohracher 2012; Schot and Steinmueller 2018).

This indeterminacy of I/I policy means that its planning and implementation is a search process of the relevant stakeholders to uncover or develop 'common grounds' which should enable the realisation of joint action (Sabel and Kuznetsov 2011; Crespi et al. 2014: 322; Klijn and Koppenjan 2014: 127). In other words, stakeholders' varying perceptions, objectives, and preferences regarding policy design, process, and implementation may not be reconcilable without an organised search process aimed at consensus. Implicit or explicit recognition of the knowledge gaps in the definition and implementation of I/I policy renders it an experimental activity rather than the implementation of a 'grand design'. The European Union (EU)'s smart specialisation (Foray et al. 2012a), 'smart state' (Aghion and Akcigit 2015), 'experimental innovation' (Dutz et al. 2014), and 'experimental state' (Bakhshi et al. 2011) policy approaches build on this notion. The idea is to discover what works and use that knowledge to revise the policy as problems and solutions emerge (Bakhshi et al. 2011).

While this approach is very appealing conceptually, it overlooks how experimentation fits the context of an accountable Weberian public administration. The developmental state literature suggests that, in the 1970s and 1980s, experimentation was encouraged but that, in the main, government support for large-scale, capital-intensive investments created a rather unfavourable environment for entrepreneurial experimentation (Johnson 1982; Amsden 1989; Wade 1990; Evans 1995).

Recently, experimentation has become accepted in the form of so-called innovation labs, which tend to be separated structurally from the rest of the public sector for which they are expected to promote ideas and solutions (for a review, see Tonurist et al. 2017). Whatever the value of these attempts, they fail to address how experimental governance can be reconciled with the need for accountability.

This presents a conundrum: there is no organisational solution to experimental governance in the conditions typical of public programmes. In this paper, we first define the issue as the gap between the need to balance the experimental nature of I/I policy and the need for public accountability. We then summarise several experimental I/I policy approaches comparing how they try to address this gap. Finally, we propose a governance mechanism—learning networks (LNs)—to address this issue. Our solution amalgamates two streams of the literature: (1) network governance in public policy and (2) 'action learning' (Revans 2017) in 'communities of practice' (Wenger 2010). To our knowledge, apart from Breznitz and Ornston (2018) and Kuznetsov (2016), there have been no attempts to investigate this issue. While the need for experimentation has been recently widely accepted in the I/I literature, the issue of accountability and how to reconcile it with the need for accountability has largely been ignored. Yet, the argument that underpins this paper is that unless we do not resolve this issue conceptually and organisationally, the idea of experimentation will fade away or remain as it currently is at the level of rhetoric.

We use the term I/I policy as the boundary between two policies is probably not possible anymore. I/I policies are focused on innovation and technology upgrading in an intersectoral context, where industry boundaries are not defined through products but rather 'sectors' and where 'activities' correspond to 'capabilities' (Radosevic 2017: 8). However, the issue of experimentation in I/I policy does not apply to the entire spectrum of I/I policies but is the most relevant for complex innovation, technology, and industry programmes, including large-scale social innovation programmes. These programmes are not only about innovation but also about exploitation and diffusion.

Section 2 defines the challenges of a trade-off between accountability and experimentation. Section 3 compares how different approaches try to address or avoid the trade-off between experimentation and accountability. Section 4 builds on network governance and action learning literature to propose a governance mechanism that resolves this trade-off. Section 5 concludes and outlines issues for further research.

2. Innovation governance, experimentation, and accountability

This section elaborates on the challenges of reconciliation of experimentation with accountability in the I/I policy context.

2.1 Experimentation in I/I policy

The conventional I/I policy approach assumes that the policymaker acts as an enlightened principal. However, this approach cannot accommodate experimentation. New I/I policies consider the policy itself as a 'discovery process' (Rodrik 2007). Given the uncertain outcomes that are endemic to innovation, the policy is deemed continuous search, experimentation, learning, and adaptation (Dutz et al. 2014). With the increasing importance of grand socioeconomic challenges related to climate change and industrial transformation, the need for experimentation has further increased. A shift towards experimentation and the growing use of pilots comes from the 'problem-driven' nature of grand challenges.

The basis for experimentation in I/I policy revolves around 'experimental governance' (Sabel and Zeitlin 2012). This can be considered a catch-all term or a common frame for approaches which recognise that the traditional principal–agent relationship cannot deliver in the conditions of strategic uncertainty. Sabel and Zeitlin (2010: 17) define experimental governance as 'a recursive process of provisional goal-setting and revision based on learning from the comparison of alternative approaches to advancing them in different contexts'. Experimental governance does not differentiate between policy design and implementation, and learning occurs through the application.

In I/I policy, experimental governance (in our reading of Sabel and Zeitlin 2010) rests on four principles. First, policy goals are established by the interaction with affected stakeholders. Second, stakeholders have a significant degree of autonomy to pursue different programmes or projects, ideally in the form of a portfolio of projects. Third, project performance is monitored based on 'diagnostic monitoring' (aimed at identifying potential unforeseen events and correcting them or transforming them into opportunities) rather than

ex post project-by-project evaluation. Fourth, goals, metrics, and decision-making procedures are reviewed in light of new problems and possibilities.

Currently, 'there is no (yet) single clear-cut approach, or blueprint, for the implementation of experimental governance' (Wolfe 2018: 45). In that respect, some, none, or all four of these principles are, to a very different degree, embodied in different experimental approaches. As it should be apparent from the review of different experimental approaches in Section 3, they have not developed rules about conduct or accountability, i.e. they have not been yet institutionalised. The result is a gap between policy rhetoric and reality which cannot be closed unless we address the issue of accountability in experimental governance.

2.2 Accountability in I/I policy

Accountability is critical to democratic governance (Ingram and Schneider 2006). In addition to effectiveness and efficiency, accountability is considered one of the three key features of regulatory quality (World Bank 2010). Normanton (1971) (cited in Scott 2000: 3) defines accountability as 'a liability to reveal, to explain, and to justify what one does; how one discharges responsibilities, financial or other, whose several origins may be political, constitutional, hierarchical or contractual'. Scott (2006: 175) defines accountability as 'the obligation to give an account of one's actions to someone else, often balanced by a responsibility of that other to seek an account'. Klijn and Koppenjan (2016: 223) define it as 'the extent to which actors (accounters: those rendering accounts) are held accountable for their behaviour and performance by other actors (accountees: those to whom account is rendered)'. The accountability can be 'vertical, establishing accountable behaviour to superiors higher in the hierarchy, or horizontal, establishing accountable behaviour among and towards actors in the network' (Klijn and Koppenjan 2016: 223). Vertical accountability, especially in the case of horizontal or generic innovation policies, conforms to the conventional principal–agent view of policy.

In contrast, the multi-stakeholder nature of the experimental I/I policy is more about the mutual accountability of agents in networks or horizontal accountability. Vertical and horizontal (network) accountabilities do not exclude each other. Network accountability is a system-level construct—one that is shaped by the accountability structures of the individual parts of the network (Koliba et al. 2019: 7). Members of the network must be accountable to their bosses and supervisors and collaboratively to their network partners representing other organisations (Koliba et al. 2019: 253).

Networks have the advantage that they are non-hierarchical and can handle complex problems that cannot be resolved solely based on hierarchical (vertical) accountability among individual administrative bodies (Malerba and Vonortas 2009). However, networks are also subject to accountability. As Dryzin (2009: 199) points out, 'networks themselves are not necessarily democratic, and can indeed facilitate escape from accountability to a broader public by hiding power and responsibility'. Networks lack a sovereign centre and involve a range of actors operating in various regimes. Network members may hold others to account, but the network may not be answerable to any particular entity. On the other hand, as Rhodes (2006: 439) highlights, 'conventional notions of accountability do not fit when authority for

service delivery is dispersed among several agencies', which is typical of I/I policy (Dryzin, 2009).

I/I policy is an area where accountability is especially complex for several reasons.

First, the engagement of various public and private stakeholders operating in different regulatory regimes means that a single mode of accountability will not suffice. Ministries operate based on political accountability, private firms operate based on market accountability, and agencies operate according to administrative accountability; these different accountability criteria need to be reconciled.

Second, in an era of decentralisation, devolution, and public–private partnerships, accountability issues have become particularly difficult. An agreed 'accountability regime' (Mashaw 2006) may be a composite that may not satisfy any of the stakeholders involved in policy co-creation.

Third, the long delivery chain related to I/I policy can lead to significant differences between outcomes and outputs, and the blurring of accountability in relation to different issues.

Fourth, in addition to accountability criteria, a proper implementation process requires mutual accountability between the public agencies and private actors involved, to which there seems to be no obvious solution.

Fifth, spreading New Public Management (NPM) philosophies further complicates accountability (Christensen 2006: 459). The benefits of NPM are increased efficiency of individual administrative bodies and agencies exempted from their political accountability. However, this has led to fragmentation and disintegration, which require a stronger focus on co-ordination and collaboration (Christensen 2006). In the context of innovation policy, this has further increased the potential gap between outputs and outcomes and led to the dominance of administrative accountability.

2.3 Experimentation, accountability, and network governance

The issue of accountability is especially challenging in experimental I/I policy, which requires interaction, feedback, and flexibility. These features are unlikely to be nurtured in a vertical type of relationship but require network and experimental governance (Wolfe 2018: 9–11). A close link between experimentation and network governance stems from innovation processes' interactive nature and co-ordination requirements for innovation-driven structural change.

The multi-stakeholder nature of the I/I policy raises the issue of how actors can agree on a socially optimal solution. Any policymaker, be they 'optimiser' or 'adaptive' (Teubal 2002), is part of the political process of negotiations and bargaining across the political hierarchy. Any experimentation is a risky activity, and the dangers of failure force policymakers to behave opportunistically and 'play safe'. Finally, innovation governance occurs 'within a given set of formal and informal rules that shape and are shaped by power' (World Bank 2017).

A conventional approach to this issue is to assume that there is a rational 'decision maker' who makes decisions based on professional analysis. Such a decision maker lays out goals and relies on 'professional social inquiry' to make the optimal decision. This myth of the enlightened 'decision maker' who approximates Plato's philosopher king has been dismantled by Lindblom (1990). Lindblom (1959, 1990) and Lindblom and Cohen (1979) argue that policy-making is not

always a rational and mechanistic process. A professional social inquiry is seldom conclusive, and the actual policy is made not by a policy maker but by the interaction among a plurality of partisan views. In the I/I policy context, where no agent fully understands the situation and outcomes are highly uncertain, the conventional perspective is even more misleading. Does it then mean that policy-making is never rational? Here, we follow Wildavsky (2018) and argue that converting individual preferences into collective choices and actions can be a rational and learning process. Learning and problem-solving come through ordinary knowledge, often assisted by professional social inquiry and interactive problem-solving (Lindblom 1990). Learning, in this case, comes from actual interaction experience or 'mutual partisan adjustment' and consists of altered dispositions and preferences (Lindblom 1990).

From our perspective, it is essential to recognise that accountability is about establishing responsibilities for mistakes and failures and enhancing mutual learning among the various actors involved (Klijn and Koppenjan 2016). The accountability process requires regular interactions that allow for mutual learning (Klijn and Koppenjan 2016). This learning dimension is key to policy networks, which are vital to experimentation. As Klijn and Koppenjan (2016: 225) point out, 'accountability is seen mainly as a mechanism to increase transparency and share information to enhance learning among accounters and accountees and to adapt and improve policies, services, and behaviour'. However, to prevent that accountability turns into a blame game, it is essential to establish a governance mechanism with rules about conduct or accountability. These rules should balance accountability for outcomes with a mechanism to correct mistakes as they become recognised through mutual learning.

We should not ignore that policy as a social problem-solving activity based on the interaction among interests is imbued by different motivations and is ultimately a political process. However, between 'pure politics' and 'pure planning', a broad policy area is generated through 'mutual adjustments' (Lindblom 1990; Wildavsky 2018). Each stakeholder operates based on different accountability criteria in this area and may enjoy very different degrees of autonomy. However, in practice, these different accountability criteria can be successfully aligned, provided organisational solutions exist to the trade-off between experimentation and accountability. Vertical and horizontal accountabilities can be aligned, or actors in a network can develop joint solutions and co-produce services despite the varying objectives and preferences (Klijn and Koppenjan 2016; Koliba et al. 2019).

In summary, in this section, we developed a threefold argument. First, a conventional I/I policy approach cannot accommodate experimentation. Second, there is a trade-off between the need for experimentation in I/I policy and the demand for public accountability. Third, the collective or multi-stakeholder nature of the I/I policy requires network governance as an accountability mechanism and a learning and mutual adjustment mechanism.

In continuation, we assess the existing conceptual and organisational solutions to experimentation in the I/I policy context and how they address the trade-off between experimentation and accountability.

3. Organisational solutions to experimentation from a comparative perspective

We identify several distinct approaches (and their particular strengths and weaknesses) to experimentation in I/I policy (Table 1). These approaches acknowledge the need for experimentation in both the design and implementation of policy. The following subsections provide a brief description of these approaches.

3.1 Smart specialisation

In the EU's smart specialisation or S3, probably the best-known and most comprehensively-documented I/I policy approach, experimentation is confined to the so-called Entrepreneurial Discovery Process (EDP) (Foray et al. 2012a). The EDP is a structured consultation involving a selection of policy priorities, which includes stakeholders and confines experimentation to the policy process design phase. In the subsequent stages, policy-making proceeds along conventional public funding lines. In our view, the EDP has three limitations.

First, it offers little guidance about the structuring or the 'how to' of the policy process. It may *de facto* legitimise the vested sector or individual interests. Inclusiveness and interaction within the EDP depend on its organisers, often public authorities (Cvijanović et al. 2018). In reality, a truncated multi-stakeholder approach emerges, involving only some stakeholders, with the EDP confined to the design stage. The experimental design stage is followed by implementation according to a codified plan with weak or no feedback loops. These limitations stem from inconsistencies in the S3 process, and, most crucially, implementation depends on programme-based calls rather than strategic partnerships or 'innovation platforms' involving the leading players. Although S3 claims to focus on forming local innovation systems or ecosystems, this is supported not by a portfolio of related projects but by a series of stand-alone projects.

The second significant inconsistency is the separation between the design and implementation phases which are subject to Operational Programmes (OPs) that are organisationally and administratively autonomous in relation to the overall S3 process[2] (Cvijanović et al. 2018). Also, the administrative processes and the risk that policymakers may demand repayment retroactively discourage experimentation by civil servants and entrepreneurs (Breznitz and Ornston 2017).

The third shortcoming is that the broad-based engagement of potentially numerous stakeholders often does not lead to effective adaptation since the process is dominated by public sector actors and reduced to research and development (R&D)-related issues. Thus, the EDP reflects existing power and discourse structures. Like conventional monitoring and evaluation (M&E), the dominant stakeholders define the problems and the criteria for their successful resolution (Bovens et al. 2006). In a nutshell, political processes determine the nature and success or failure of the EDP and the extent of relevant stakeholders and other audiences' involvement.

The separation between design and implementation renders S3 a case of incomplete I/I policy (Radosevic et al. 2017). Monitoring is focused on the evaluation of process

Table 1. Approaches to the issue of experimentation in innovation policy: strengths and weaknesses.

Approach	Strengths	Weaknesses
Smart specialisation EDP (Foray 2015; Foray et al. 2012a)	Stakeholder engagement through a structured consultation process.	Broad-based participation does not always lead to effective adaptation.
		Which stakeholders define the problem? Who defines the criteria for a successful solution? The EDP may reflect the existing power and discourse structure.
		Separation between design and implementation. The EDP is confined mainly to the design phase. Implementation follows a planned script. Weak feedback loops. Monitoring focused on process compliance and disbursement evaluation. Delayed feedback on outputs and outcomes.
Experimental governance (Sabel and Zeitlin 2010)	No separation between design and implementation. A policy designed as a process.	Requires SDAs (Kuznetsov and Sabel 2017). Incompatible with conventional public policy accountability rules.
PDIA (Andrews et al. 2012)	The focus is on discovering what the real local problem is. Different solutions and adaptations are outlined.	Appropriate as a solution to specific tractable problems but difficult to embed as the overall policy solution—especially in the context of ill-defined problems that occur in I/I policy.
	By definition, it requires stakeholder engagement.	'Authorizing environment' as an organisational solution ignores the accountability of 'authorizers'.
	Experiential learning effects.	
EFA (Crespi et al. 2014)	Feedback is an essential experimentation mechanism, which requires adjustments.	No limits to experimentation.
		Requires competent agencies with appropriate technical, operational, and political capabilities.
Directed improvisation (variation–selection–niche creation)	Bounded experimentation. Vague guidelines allow for policy experimentation. Selection following experimentation with a variety of approaches.	Requires a specific institutional set-up that could limit experimentation, selection of viable options, and niche creation.
TIP (Schot and Steinmueller 2018; Mazzucato 2018a,b)	Focus well beyond STI into socio-economic transformation: articulate on direction and intentionality of experimentation.	Quite inarticulate on the institutionalisation of experimentation, which is confined on SDAs; ignores accountability issues in horizontal governance.

Source: the authors.

compliance and disbursement. Since conventional M&E tends to dominate, any feedback on outputs and outcomes could be a long way off.

3.2 Experimental governance

For several reasons, conceptually, experimental governance (see Section 2.1) is the most advanced new I/I policy model (Sabel and Zeitlin 2010, 2012). First, a policy is designed as a process rather than a planned outcome (Kuznetsov 2009). Second, organisational experimentation is based on what has been described as Schumpeterian development agencies (SDAs) (Kuznetsov and Sabel 2017), which operate according to rules that are incompatible with conventional public policy accountability rules. Third, the autonomy related to SDAs needs to be reconciled with the need for control to ensure their long-term objectives are achieved. Thus, managing this trade-off is the crux of the issue.

SDAs can facilitate the development of radically new policy instruments to transform both public- and private-sector routines (Kuznetsov 2009). Breznitz et al. (2018) illustrate how they facilitate experimentation with novel technologies, new private sector partners, heterodox policy instruments, and unconventional business models. This explains the emergence of SDAs at the periphery of public- and private-sector strategies rather than as flagship initiatives (Breznitz et al. 2018).

Significant for SDA effectiveness is the capacity to 'monitor the progress of projects, use signs of difficulty to trigger an inquiry into the root cause of the problem, and convoke the actors who can help solve it – or call the attention of higher-up authorities to problems that remain unsolved' (Kuznetsov 2016: 5). *Ex post* evaluation is replaced by 'diagnostic monitoring' (Kuznetsov and Sabel 2011; Dutz et al. 2014) or 'systematic evaluation of a portfolio of projects or programmes to detect and correct errors as each project evolves (including the weeding out of inefficient ones) in light of experience and new information' (Dutz et al. 2014: 113).

The conventional public sector eschews diagnostic monitoring due to the potential for accountability breaches. The dominance of the precautionary principle works against adjustments, retractions, and changes in objectives, raising suspicion that funds are being squandered and the expected results will not be achieved. This throws light on the trade-off between experimentation and the need for accountability, which seem to be inversely related. It explains the partial success of SDAs (e.g. the Finnish National Fund for R&D and the Israeli Office of the Chief Scientist) once they become central to policy-making (Breznitz and Ornston 2018). In a rare acknowledgement of this, Breznitz and Ornston (2018: 1) point to the 'trade-off between implementation and experimentation', which they term the 'politics of partial success'.

The US Defense Advanced Research Projects Agency (DARPA) can be considered an SDA role model; its success led to the extension of the ARPA model to other technological areas in the USA and internationally. According to Azoulay et al. (2018), the core of the ARPA model is general organisational flexibility, bottom-up programme design, discretion in

project selection, and active project management. These features allow operation according to rules—different from those regulating conventional public agencies—that give high levels of autonomy to programme managers. However, ARPA-type projects are associated with 'quantifiable goals and sub-goals with trackable progress metrics' (Azoulay et al. 2018: 18), which eases the measurement of their accountability. This is probably not the sole explanation for DARPA's success, but it certainly reduces the complexities of accountability that are endemic to the experimental policies.

3.3 Problem-driven iterative adaptation

Andrews et al. (2012) proposed problem-driven iterative adaptation (PDIA) as a development assistance approach. PDIA is relevant in situations where the exact nature of the problem is unclear, or implementation is a 'voyage of discovery' that requires experimentation to find out what works. In Andrews et al. (2012) and Pritchet and Woolcock (2004), PDIA identifies the real local problem that might require various solutions and adaptations. PDIA requires the involvement of stakeholders and generates experiential learning effects. The approach is to search for institutional solutions through a series of incremental steps that address part of the problem in the manner of Lindblom's (1959) 'mudding through' approach.

The organisational solution for experimentation is 'to establish an "authorising environment" for decision-making that encourages experimentation and "positive deviance"' (Andrews et al. 2017: 135). They recognise that PDIA needs authorisation or 'guardians' who are flexible and open to sharing authorisation with other potential authorisers and patients with experiments. Also, a vertical authorisation may not be sufficient as a high-level office holder will often be unable to authorise all needs for experimentation. In that respect, they acknowledge the limits of only vertical and point to the need for multiple authorisers at a similar hierarchical level. The authorising environment is thus a solution that goes well beyond SDAs and works under the protection of the higher authority. It is a network of multiple authorisers required to engage or protect experimentation. Similar to our approach to LNs (see Section 4.5), Andrews et al. (2017) also outline multiple functional roles that would need to be present in the authorising environment.

So, in many respects, PDIA does provide many solutions to experimentation in development aid policies. It is particularly appropriate to resolve specific, workable problems where goals are clear, but the implementation is a 'voyage of discovery'. On the other side, it is difficult to embed as an overall policy solution as it requires what we would call an 'enlightened strategist' to establish an 'authorising environment'. Also, PDIA is unsuited to ill-defined issues typical of I/I policy; it sets no limits on experimentation or alternative solutions and, thus, is difficult to standardise within conventional public policy funding systems. However, from our perspective, the biggest issue is that PDIA does not address the accountability of 'authorisers', which may explain why the aim to establish the authorising environments fails too often.

3.4 Experimentation–feedback–adaptation

Crespi et al. (2014) merged experimental governance and the PDIA approach to propose an experimentation–feedback–adaptation (EFA) cycle based on the several Latin American success stories they discuss. EFA combines the experimentation approach in Sabel and Zeitlin (2012) with the adaptation approach in Pritchett et al. (2013). Crespi et al. (2014) define experimentation as a space that allows different approaches to solving a given problem and evaluating the results. The feedback that Crespi et al.'s (2014) proposed EFA cycle includes is necessary to distinguish which approaches are workable and which are not. Adaptation involves adapting the policy (and the practice) to a particular institutional context. Feedback is essential for experimentation and adaptation. Unlike 'authorizing environment' of the PDIA approach, a successful EFA mechanism requires competent agencies with appropriate technical, operational, and political capabilities. This may be too often a somewhat heroic assumption.

The downside to EFA and other approaches is that there are no limits to the scope of the experimentation part of the process. To what extent can the agency manage its portfolio as it considers appropriate within the given time and budget? As experimentation creates both variety and an infinite range of alternative solutions, the issue is, what is the legitimate field of experimentation? Are these objectives, implementation methods, the feasibility of individual projects, or a portfolio of projects and programmes? The scope for experimentation in these respects is probably much bigger in more developed compared to less developed countries and regions. However, limited scope for experimentation means that stakes are also higher and hence boundaries of experimentation are more restricted.

3.5 Directed improvisation (variation–selection–niche creation)

'Directed improvisation' describes China's approach to I/I policy (e.g.). China's massive transformation since the 1990s has been based on local experiments rather than a 'big bang' approach (Weber 2021). China's centralised government control actively encouraged localities to experiment with different development approaches, and widespread decentralisation of fiscal and administrative functions enabled this practice on a large scale (Heilmann (2008); Florini et al. 2012). Shows that behind this extraordinary Chinese growth is a 'directed improvisation' approach or a strategy of vague policy guidelines, which enabled the generation of various local solutions (experiments) followed by the selection and diffusion of successful policy models.

An important feature of China's bounded experimentation is described in Breznitz and Murphree (2011) as 'structured uncertainty'. Recall that the virtue of conventional public policy is precisely to avoid multiple interpretations and implementations of the same policy. Allowing for the multiplicity of actions but not legitimising a specific course or form of behaviour as the most appropriate is inimical to accountable public policy. Such behaviour can lead to an 'anything goes' policy with its attendant evaluation and legitimation problems. Such policies include flexible interpretations of 'high technology' when promoting new product activities or a particular type of company (Breznitz and Murphree 2011). However, this ambiguity can be constructive and essential to allow experimentation to discover what works best.

Once a workable model emerges, further experimentation becomes costly and counterproductive, and the central authority defines the desired and accepted action modes.

This requires some bureaucratisation in a Hayekian rather than a Weberian sense, an administration that actively searches for and exploits opportunities. The difference between the Chinese and other experimentation approaches is that the former is much broader and affects the whole innovation system rather than being confined to SDAs or specific programmes such as S3, PDIA, or EFA.

3.6 Transformative innovation policy

Transformative innovation policy (TIP) is recent framing of policy linked to contemporary social and environmental challenges and the transformation of the socio-technical system. Schot and Steinmueller (2018) state that the policy aims to stimulate and facilitate experimentation of a broadly-defined socio-technical system. Directionality and intentionality in supporting technological change distinguish this approach from others. A specific direction of technological transformation can be achieved 'if it is inclusive, experimental, and aimed at changing the direction of socio-technical systems in all its dimensions' (Schot and Steinmueller 2018: 1563). In its scope, this approach goes beyond the R&D and linkages in innovation systems, as socio-technical transformation cannot be achieved solely by Science, Technology, and Innovation (STI) policies.

TIP includes mission-oriented policies as its most prominent block, especially when missions aim at behavioural and structural changes related to a societal challenge (Larrue 2021; Lindner et al. 2021). Mission-oriented research and innovation initiatives are often needed to drive a 'system' or 'transformative change' (Mazzucato 2021). These initiatives are cross-disciplinary, involve several types of stakeholders, utilise a mix of policy instruments, and require horizontal policies cutting across governance levels (European Commission 2018). Clearly-defined objectives are a hallmark of a mission-oriented approach. Still, there is also recognition that the objectives must also be the subject of broad-based public debates and that they can evolve (Lindner et al. 2021).

Experimentalism is a prominent feature of TIP, especially mission-oriented (Ergas 1987; Mazzucato 2018a). To achieve mission goals, participants need the flexibility to propose a variety of solutions and to manage projects as portfolios 'to stimulate interaction, experimentation and cross-learning' (Kattel et al. 2018: 18). However, a mission-oriented approach, on its own, either is not sufficient to provide a governance solution to experimentation or assumes the existence of competent SDAs (see Table 1). For example, Kattel and Mazzucato (2018: 795) rightly highlight the need to structure public organisations to embrace 'uncertainty, exploration, and experimentation' as critical for mission-oriented approaches. However, experimentation in TIP is conducted through strategic niche management. In contrast, the issue of 'how experimentation can generate transformative change, beyond the pilot and/or the niche development which may follow from it' is not addressed (Kivimaa and Kern 2016; Schot and Steinmueller 2018: 1563). The most crucial feature of mission policies is that goals must be clear from the outset. However, in all complex issues involving numerous actors, which are mutually interdependent, the goals are usually not established initially but emerge as the result of negotiation (Klijn and Koppenjan 2014).

It is acknowledged that achieving a mission requires 'a clear and empowered governance (structure) that can

be held accountable for achieving the results' (European Commission 2018: 13). Also, experimentation requires that the state has 'an organisational culture and dynamic capabilities that welcome the possibility of failure and experimentation' (Mazzucato et al. 2020). "Agencies carrying out missions should 'have sufficient autonomy to take risks without questioning their authority" (Mazzucato 2021). On the other hand, the exact governance mechanisms are not confined to 'autonomous agencies' but may also include steering groups that operate across departments and ministries (Lindner et al. 2021). Ultimately, what matters is 'to embed experimentation into the design of the system and to inform that experimentation – and learning from differences – from real participation' (Mazzucato 2021: 183).

Like other approaches, as its most articulate and developed approach, TIP and mission-oriented policy consider policy governance primarily in terms of autonomous SDAs. Although they recognise the need for broad stakeholder involvement, they are not considering in depth the issues of horizontal and vertical accountabilities as especially challenging. The solution is autonomy, but this ignores the fact that the price of this insulation can be a loss of access to political power. This insulation may be pretty counterproductive for agencies engaging in conflictual social, regulatory, and economic issues, as demonstrated a long time ago by (Hirschman 2012).

In a nutshell, TIP is a relevant new perspective on a policy which goes well beyond the scope of standard STI and technology fixes (Sarewitz and Nelson 2008; Foray et al. 2012a). However, there seems to be a substantial unaddressed gap between the systemic nature of environmental, social, and economic challenges and the governance solutions that should underpin these policies. Two major weaknesses are (1) a lack of solutions for institutionalising experimentation that goes beyond pilots and (2) how to hold actors with shared responsibilities accountable. The critical challenge of TIP is ensuring that experimentation, local knowledge, and flexibility that characterise network governance are coupled with high-level co-ordination.

3.7 A common challenge: governance to balance experimentation with accountability

A brief overview of current experimentation policies reveals how they address the issue of innovation governance and, in particular, the trade-off between experimentation and accountability. Experimental governance assumes that a specific organisation operates according to a system of rules that are different from conventional public policy. SDAs manage portfolios of projects and, ultimately, are responsible for assembling the portfolios with the best outcomes and synergies. The 'directed improvisation' approach assumes a governance regime, which allows competition among regional administrations and requires strong central power to select based on those experimental models that have proven successful. TIP is silent on how to operationalise governance and does not address the issue of accountability (Arnold et al. 2018). PDIA also ignores the accountability challenges of 'multiple authorisers'.

EFA does not address the underlying governance explicitly. It implicitly assumes that there are public agencies with technical, operational, and political capabilities and the level of autonomy required for experimental policies. Such agencies

should be able to engage in an experimentation/implementation cycle. However, positive examples of SDAs show that they are successful if they emerge at the periphery of public policy. The main problems arise with the shift to the centre (mainstream) of public policy, where their actions need to conform to accountability rules. The EU's S3 approach only provides detailed information on experimentation in the design stage and assumes that implementation will mimic conventional public-funded programmes, fully applying standard administrative accountability criteria.

The main challenge, especially in the case of complex multilevel governance programmes, is reconciling an experimentation approach with accountability. An SDA approach can be challenging to implement even at the periphery of public policy. Successful SDAs tend to be victims of their success. As they move from the periphery to the mainstream, the successful SDA raises political attention as they become subject to increased scrutiny and lose their initial autonomy (Breznitz and Ornston 2013).

'Directed improvisation' is incompatible with the general administrative rules of programmes funded within the conventional I/I policy. Also, it would be unrealistic to assume that all countries or regions have competent public agencies that can engage in a complete experimentation/implementation cycle within their regulatory frameworks. Therefore, our conclusion is that *in conditions of conventional public administration, we do not (yet) have an organisational solution to experimental governance to facilitate the development of new public policies.*

Organisational solutions are confined to either (1) individual 'pockets of excellence' (autonomous SDA), which could result in individual 'pockets of disaster', or (2) a specific institutional set-up (see Chinese policy able to combine experimentation with centralised selection, followed by diffusion of newly-identified practices). In all other cases, the problem is assumed to be non-existent or is ignored.

Section 4 discusses requirements that organisational solutions to experimental governance would have to satisfy in conditions of conventional public administration. We propose LNs as the governance (organisational) solution to reconcile the trade-off between experimentation and accountability in I/I policy.

4. Resolving the trade-off between experimentation and accountability

Experimentation in I/I policy is about learning 'what works' and 'what does not work'. A recognition of this has led to the notion of 'reflexive governance', which theorises on governance that can 'experiment, learn and change course appropriately during intervention' (Arnold et al. 2018; Feindt Peter and Weiland 2018). Weber and Rohracher (2012) have developed the notion of reflexivity failure or 'insufficient ability of

the system to monitor, anticipate and involve actors in self-governance processes'. However, learning alone is insufficient to justify or change intervention as it does not provide evidence to policymakers about achieved outcomes. Learning by itself does not address the need for accountability in I/I policy. Also, learning by itself does not explain who are beneficiaries of learning and what learning results are used for. Are they used by programme managers (internal stakeholders) or the broader public for social accountability? In a nutshell, experimentation in I/I policy rests on learning, but learning alone can be justified only if the process and its outcomes are accountable.

In that respect, we differentiate between 'deliberation' (process) accountability and substantive (outcome) accountability (see also Shefali et al. 2014). 'Deliberative' (process) accountability is *how* a particular decision is delivered. 'Substantive' (outcome) accountability is about the outcomes of decisions, i.e. whether they have led to the goals sought initially. So, the key to resolving the trade-off between experimentation and accountability is to encourage learning by balancing deliberation and substantive accountabilities. The ultimate aim is to generate learning outcomes (substantive change) rather than just ensure good deliberation processes without achieving the desired results (Fig. 1). As expected in experimental policy, the outcome may not always be reached (Ornston 2018). However, the learning outcome must be achieved, i.e. understanding what did not work, why, and what can be improved.

We should remember that in I/I policies, whether traditional or experimental, there is a significant lag between project/programmes' outputs and outcomes. At the same time, the impact is usually discernible with an even longer lag. For example, the number of supported firms (output) may be quite different from the number of new technology-based products/services generated by supported firms (outcome), which in turn can be quite different from the economic impact of these products/services (impact). However, the advantage of the experimental approach is that introducing deliberative (process) accountability ensures a higher probability of outcomes and impacts.

4.1 Are LNs a solution?

In Section 3, we concluded that apart from SDAs and Chinese 'directed improvisation', which are incompatible with conventional public policy, there are no governance solutions that facilitate and capture the learning of stakeholders in the design and implementation process.

This section argues for LNs as the organisational solution to overcome the trade-off between experimentation and accountability. Theoretically, our answer to the challenge originates from two unrelated streams of literature. The first is the literature on learning in its social dimensions in 'communities of practice' (Wenger 2010). The second is the literature
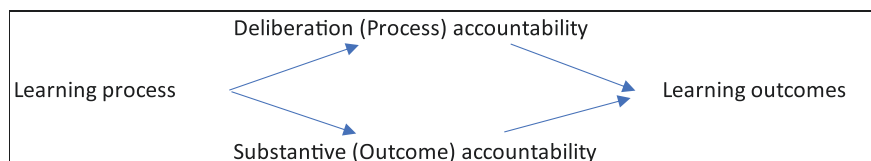

Figure 1. Learning and accountability interaction.

on *network governance* in the public sector, which addresses accountability in tasks involving diverse stakeholders who are equal to each other in hierarchical terms, i.e. those facing the challenge of horizontal accountabilities. The LN literature demonstrates that to be effective, experimental I/I policy should be linked to action (experimental) learning, ensuring immediate feedback about what (does not) works and why. The literature on network governance addresses the issues of horizontal accountability. In multi-stakeholder I/I programmes, this is a crucial issue to ensure deliberative (process) and substantive (outcome) accountability.

4.2 What are LNs?

The motivation for LNs originates in the idea that significant knowledge benefits arise from the facilitation of 'communities of practice' involving different stakeholders with different objectives in different contexts. LNs have been used to support organisational transformation in a wide range of contexts.

They address the issue of 'mutual adjustment', which, as pointed out by Lindblom (1990: 247), has been neglected in social sciences but not in organisation theory, where this issue is well recognised. This explains why LNs and 'action learning' have come from organisational theory, where 'communities of practice' have been studied extensively and implemented in various contexts (Amin and Roberts 2008). The underlying idea is to extend this approach to the I/I policy. For example, the EU's S3 uses the mechanism of EDP to establish new 'communities of practice' consisting of stakeholders from different organisations and sectors.

Conventional thinking about the I/I policy implicitly assumes that new policies or changes to existing approaches tend to originate from the ministry, that is, the principal, so the learning is reduced to the training of implementation agencies. Also, there is learning that comes *post festum* after M&E reports. As a result, the implementers are not sources of new knowledge for adaptations and redesign of policies. This is highly unsatisfactory as 'communities of practice' in I/I policy and LNs as their organisational expression can be established to generate experiential learning (Kolb and Fry 1975). The basic argument is that LNs could become the mechanism to resolve quickly issues that arise during implementation and will provide feedback into the design process[3] (Bessant and Tsekouras 2001; Bessant et al. 2012).

4.3 Learning in LNs

The LN method relies on the principles of 'action learning' (Revans 2017). Action learning is defined as '… a continuous process of learning and reflection, supported by colleagues, to get things done. Through action learning, individuals learn with and from each other by working on real problems and reflecting on their own experiences' (McGill and Beaty (2001): 11). Action learning is a form of social learning in 'communities of practice', which Wenger et al. (2011: 8) define as 'a learning partnership among people who find it helpful to learn from and with each other about a particular domain'.

The core 'action learning' process requires participants to report the experience of 'doing things' and discuss this experience within groups to propose concrete actions (Kolb 1984; McGill and Beaty 2001). In turn, group participants report on the proposed actions' success (or not), which becomes the focus of further group deliberation (Revans 2017). The focus

is on complex or ill-defined problems. The absence of a single problem-solving definition and procedure makes 'action learning' a 'highly situational' practice (Gifford 2005: 2) and relevant to experimental I/I policy.

Lindblom (1990) and Lindblom and Cohen (1979) contrast interactive problem-solving, which characterises LNs to professional social inquiry (PSI), i.e. consultants and experts. The interaction among various stakeholders involved in the policy cycle is a problem-solving method that is essential to LNs. However, the PSI can also support LNs, including evaluation reports, as they should rely on various knowledge sources.[4]

The key to LNs is well defined by Lindblom (1990: 34) as 'the common situation in which an outcome will emerge from interaction among decision-makers, each of whom is in pursuit of solutions to his own problems'. As a result of interactions, LN members acquire a different perspective on their problems and find new solutions through mutual adjustment. The critical outcome of this process is their evolving thinking and actions regarding their objectives and the range of possible solutions discussed and offered.

LNs are not networks that facilitate learning as a product of the policy process. This learning is the domain of conventional M&E activities, public sector innovation initiatives (Tonurist et al. 2017), or policy learning exercises. They:

(1) include all stakeholders in the I/I policy process, including small and medium enterprises (SMEs), contributing as designers, implementers, and beneficiaries;
(2) are formal arrangements with clear and well-defined thresholds for participation;
(3) have an explicit operational structure that includes regular processes and actions;
(4) have a primary target—specific learning/new knowledge about the experiential I/I policy implementation process enabled by the network, e.g. examining each other viewpoints and sharing expertise; and
(5) assess learning outcomes that provide feedback on network operation (Tsekouras and Kanellou 2018).

LNs are suited to improving and adapting previously-agreed processes and procedures to emerging new problems which demand new solutions. They are a *de facto* practical solution to the 'diagnostic monitoring' mechanism (Kuznetsov and Sabel 2011; Dutz et al. 2014).

4.4 LNs as a governance mechanism

The governance challenge of experimental approaches is how to organise stakeholders and how their mutual accountabilities can be reconciled with vertical accountabilities typical for the public sector. Unless we do not address the issue of accountabilities, the existing power structure will be transposed into the policy process. This can result in an experimental policy being instrumentalised to maintain the authority of one or more stakeholders rather than being an open and inclusive multi-stakeholder process (McGovern 2009). In a condition of insufficient institutional implementation capacity, this problem becomes magnified, leading to pervasive 'isomorphic mimicry' (Cvijanović et al. 2018).

For LNs to be effective in I/I policy and not just window dressing, they need both autonomy and accountability. Experimental I/I policy requires independence, but there is a need,

also, for accountability to justify to different constituencies why something is being done in a specific way (Rhodes 2006). A literature that can help us illuminate the governance issues typical for LNs is the literature on governance networks in public policy, which we introduced in Section 2.3 (for excellent overviews, see Koliba et al. 2019; Klijn and Koppenjan 2016). Network governance is well suited to deal with wicked or complex problems due to differences among stakeholders in perceptions, preferences, and values rather than only due to a lack of knowledge. From a governance network perspective, accountability as a mechanism has a dual role. If things go wrong, it is a mechanism of control or allocation of responsibilities in the 'blame game'. On the other hand, they are also mechanisms of increasing transparency, sharing information, and enhancing learning among members who are mutually accountable to each other (de Bruijn et al. 2010; Klijn and Koppenjan 2016). While the potential of LNs to generate learning may seem more evident, this still leaves the issue of whom LNs are accountable and what their form of accountability is, which we address in the next section.

4.5 LNs, power, and hybrid accountability

LNs in I/I policy will inevitably need to combine vertical or hierarchical accountabilities with the horizontal accountabilities of mutually interdependent parties typical of large I/I programmes. So, in a democratic system, they are accountable to themselves (horizontal accountability), although we recognise that they may be accountable also to a higher democratic body (vertical accountability). Each of these accountabilities has two faces. They are both mechanisms of control (governance) and learning what works.

The accountability of LNs is horizontal, mutual, negotiated, and often implicit and informal. However, as Wenger (2010) argues, this does not mean that LN accountabilities are less effective than vertical or hierarchical accountabilities. Horizontal LN accountabilities are associated with 'engagement in joint activities, negotiation of mutual relevance, standards of practice, peer recognition, identity and reputation, and commitment to collective learning' (Wenger 2010: 195). This facilitates the establishment of trust relations and LN members' performance and creates feedback loops.

Deliberation accountability of LNs is about checking whether the interaction process among LN members has been appropriately conducted based on the agreed principles and rules of the operation of the LN. On the one hand, this is about the issue of mutual control or adherence to the LN guidelines. Still, on the other hand, accountability is essential also to generate learning about the programme's challenges. By eliciting differences in perceptions, values, and challenges, LNs should develop joint solutions to wicked problems. Substantive accountability is about the degree of mutual adjustments or changes within individual organisations or joint activities undertaken to achieve expected results or outcomes. This is about allocating responsibilities if things go wrong and achieving agreed outcomes through collaborative problem-solving. Substantive accountability builds on deliberation accountability and consists of the actual

design and implementation changes discussed within the LN and for which specific actions have been agreed. Learning and deliberation accountability is necessary but not sufficient without substantive or outcome accountability (Fig. 1).

Deliberative accountability may seem easier to achieve as parties may find it easier to agree on deliberation procedures. However, there is a danger that deliberation accountability can too quickly degenerate into administrative rituals without enhancing joint learning (Shefali et al. 2014). It may seem much more demanding to achieve substantive or outcome accountability as forms of this accountability will usually differ among various stakeholders. A business sector may be driven by responsibility towards shareholders, or external stakeholders may be focused on consumers/users or broader social accountability towards citizens. Members from the public sector may be focused on administrative or legal accountability, while ministries may be concerned with political accountability or responsibility towards elected politicians. As suggested by Koliba et al. (2019) and Klijn and Koppenjan (2016: 239), it is essential to make existing accountability mechanisms and standards 'explicit and subject to deliberation and negotiation'. These issues may be particularly challenging in sustainability-focused I/I programmes where trade-offs between economic, environmental, and social sustainability criteria would have to be negotiated. The LN may be tested to its limits when different standards initially seem incompatible.

Whatever the specific form of substantive accountability will emerge from this process, it will most likely be the hybrid accountability that will reflect the negotiated outcome of different preferences of network members. This new 'accountability regime' (Mashaw 2006) will balance the need to ensure the control dimension of vertical accountabilities with mutual adjustments and joint results through horizontal accountabilities of members.

However, network governance is not bullet-proof against misuse of power. As pointed out by Papadopoulos (2014: 2), especially in a multilevel governance setting, 'a risk of the exercise of political power being divorced from democratic accountability and that accountable multi-level governance should not be equated with democratic government'. The danger is that LNs could be accountable only to programme managers and internal stakeholders directly interested in programmes and not the broader public (Arnold et al. 2018).

LN autonomy will increase with demonstrated capacity for experimentation, reputation among stakeholders, and perception that the network is independent of dominant interest groups (Carpenter 2001). The strength of LNs is that they do not depend on a single group but rather act as brokers among the various agents and interests involved in I/I policy. In this respect, LNs should *de facto* enhance the participatory energies of their stakeholders and re-engage the state with non-state stakeholders through democratic participation. Therefore, LNs are an organisational solution to democratic politics but do not apply to either autonomous SDAs or China-type centrally-co-ordinated experimentation.

4.6 Institutionalisation of LNs as a mechanism of network governance and learning

Governance networks in public policy have developed without widely-accepted rules about conduct or accountability (Klijn and Koppenjan 2014: 10). On the other hand, 'good' network behaviour requires clarity about unaccountable behaviour (Klijn and Kopenjan 2016: 228). Rules of conduct cannot be imposed from outside but would have to be negotiated within the LN. In this section, we address the issues of institutionalisation of LNs. First, we argue that LNs should be embedded in all policy cycle stages as continuous learning and accountability mechanisms. As Klijn and Kopenjan (2016: 238) point out, 'giving account and holding other to account is an ongoing process, requiring regular interactions, guided by a set of agreements that are not static, or unilaterally determined, allowing for mutual learning'. Second, the schedule of LNs would have to be negotiated rather than imposed from above. Third, as a formalised mechanism, LNs should contain essential functional roles, and their members should operate based on a standard set of rules. Fourth, we discuss how the activity of LNs should be evaluated.

(1) The proposed LNs differ significantly from traditional M&E mechanisms focused on compliance to a linear design process followed by policy implementation, with lessons emerging only at the end of the project. The experimental approaches aim to build 'reflection points' throughout all phases and levels of the programme cycle (Dexis 2020). Figure 2 shows the role of LNs in each of the four stages of the dynamic policy cycle (DPC) Tsekouras et al. (2017). Unlike in a static policy cycle where learning emerges at the end of the policy process in the DPC, the LNs can be established and re-established in each of the four policy process stages. They are governance mechanisms that aim to improve mutual adjustments of actors' activities and joint processes in both directions, from input to output pillars and vice versa (Fig. 2).

(2) Organisationally LNs can range from being organised within a single agency that runs a portfolio of projects to platforms or partnerships which manage a portfolio of programmes. The potential of LNs lies in the facilitated (and, therefore, managed) interaction among a diversity of stakeholders and participants. Some participants provide power, others provide problem awareness, some provide ideas or resources, and others act

as connectors or bridgers (Andrews et al. 2012). Similar to Fung (2001) and Fung and Olin Wright (2001), we consider that guidelines should prescribe the form of LN deliberations but not the content. Deliberation accountability should ensure a necessary degree of autonomy for LNs to detect and correct errors and use new opportunities.

(3) The LN group should be composed of participants with executive power in an area relevant to (or affected by) the focal I/I policy. They should be senior- or middle-level administrators 'sufficiently elevated to observe differences across offices but low enough to know the necessary details about programs' (Carpenter 2001: 22). Participants representing firms should be senior managers or partners (owners).

As a formalised structure, LNs should include the following actors Bessant and Tsekouras (2001):

(a) *a network moderator*: to manage and co-ordinate activities, people, and time, match learning needs to knowledge resources, and monitor relationships among members;

(b) *group facilitators:* to enable structured reflection among groups of practitioners and balance and convergence of the interests of all group members;

(c) *network members* with executive power who represent the organisations (stakeholders) involved in the design and/or implementation of the policy; and

(d) *experts* are not members of the network but are invited to participate for a specific reason (such as a presentation of a particular topic on technology, resources, or application) for a defined period.

Among different roles, the LN facilitator is essential in ensuring the well-functioning of the network. They are ultimately the principal accountable for their functioning, but it is not synonymous with traditional forms of leadership (Koliba et al. 2019: 270). Within the LN, the facilitator is responsible to the LN and to a higher democratic body (vertical accountability). A facilitator is also responsible for conflict resolution within the network. As the new form of policy-making, it would be indispensable that all members of the LN undertake training along the lines of training programmes already developed in the private-sector LN.
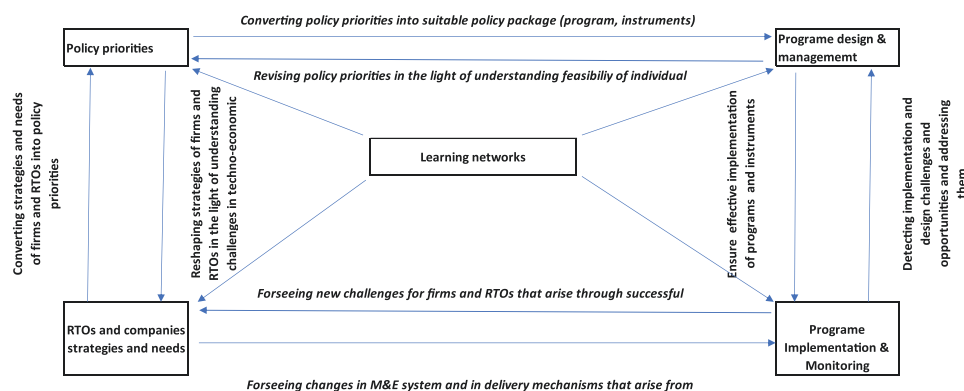

Figure 2. Learning Networks in Dynamic Policy Cycle.

(4) How should LNs be evaluated? The multiple stakeholders with various objectives and diverse perceptions usually lead to the initial absence of consensus. Hence, LNs cannot be assessed based on *ex ante* goals. Their success or failure will depend on how stakeholders display mutual learning and develop capacities to co-produce integrated, enriched, and innovative policies and solutions that any of them individually could not have realised (Klijn and Koppenjan 2016: 294). Specifically, the reference for evaluation is the extent to which LNs have improved in three respects. The first is the extent to which stakeholders have agreed on mutual objectives and achieved better mutual understanding and how their objectives can be aligned (cognitive learning). The second is how they have resolved implementation difficulties (strategic learning). The third is the extent to which they have contributed to the institutionalisation of networks and making them durable (institutional learning) (Klijn and Koppenjan 2016). Their substantive accountability criteria are the extent to which LNs have improved outcomes compared to the initial situation. Also, LNs should be evaluated based on 'deliberative accountability'. In that respect, 'deliberative accountability' is about the quality of the processes by which decisions are delivered.

5. Conclusions

The motivation for this paper was the 'disconnect between the rhetoric which calls for a more experimental public sector, and the reality of a public sector compliance culture that is intolerant of mistakes and failure' (Morgan 2017: 580). We have argued that this gap is due to the conflict between experimentation and the demand for public accountability.

Existing work on this issue does not provide a satisfactory organisational solution, as seen from the literature review in this paper. The literature examines various experimental I/I policy approaches and identifies key challenges.

How to resolve the clash between the need for new approaches, learning from and correcting mistakes throughout a DPC while engaging stakeholders, and using their knowledge while also making actors accountable to the public is an unresolved I/I policy issue. We propose LNs as an organisational solution to the governance of new I/I policies, which renders experimentation compatible with public policy accountability.

The benefits of LNs are that bringing together different stakeholders allows structured critical reflection from various perspectives. These different perspectives, in turn, enable the identification of solutions to joint problems. This could transform the stakeholders in the experimentation process from passive to active participants in a new approach to improving policy design and implementation. Alternatives to LNs and mutual adjustment entail centralised decision-making (including Chinese style 'directed improvisation') or 'enlightened policy maker'. If we aim for democracy politics solution, these alternatives seem much more problematic (Lindblom 1990).

In a nutshell, LNs are proposed as the solution that has the potential to (1) overcome the fragmentation of the policy cycle by integrating policy design with implementation and M&E, especially in sustainability-driven programmes; (2) identify mistakes and misalignments, correct them, and adjust and reconcile different perceptions and expectations of various stakeholders; and (3) operate based on transparent rules of conduct and accountability.

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Data sharing is not applicable to this article.

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Notes

1. For a review and comparative analysis of these approaches, see Radosevic et al. (2017).
2. OPs are detailed plans in which the Member States define how European structural and investment funds will be spent during the programme period. These OPs can refer to specific regions or may be country-wide thematic goals (e.g. environment).
3. LNs differ from public sector innovation (PUBSI) initiatives (Tonurist et al. 2017), which focus on the front end of policy, but lack the 'capabilities and authority' required to influence the scaling-up and implementation of solutions. The lack of strong ties to stakeholders inhibits PUBSI lab designers from addressing the politics involved in the policy process and thus issues of accountability, which is the main focus of LNs (Lewis et al. 2019: 15).
4. In the EU context, several directorates of the European Commission use the Results-Oriented Monitoring, which are external and impartial assessments aimed at enhancing the internal control, accountability, and management capacity with a strong focus on results. We consider this to be a form of the PUBSI, which can facilitate the activity of LNs.

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