

EMERGING INTERMEDIATION ROLE CONFIGURATIONS IN INNOVATION ECOSYSTEMS

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Abstract. *Purpose* – Innovation ecosystems rely on intermediaries, yet intermediation is often conceptualised as a static role tied to fixed entities. This paper develops an *adaptive intermediation* concept, explaining how a designated governance unit reconfigures its connecting, facilitating, and integrating functions as ecosystem maturity and urgency evolve.

Research methodology – We adopt a *dynamic capabilities* perspective to develop a theoretical framework for this research based on literature analysis and conduct an empirical single-case study of Latvia's smart-city ecosystem, to complement our theoretical findings by the analysis of empirical phenomena, and to design our theoretical propositions.

Findings – The governance unit's effectiveness in the innovation ecosystems relies on its capability to reconfigure intermediation functions. We identify three evolving configurations of governance: (1) connecting, (2) facilitation, and (3) directive integration under high urgency, and explain their reconfiguration in the innovation ecosystems.

Research limitations – Empirical evidence for this research comes from a pilot exploratory study of a single civic-innovation ecosystem; therefore, the applicability and transferability of the research findings should be further tested through comparative multi-case and mixed-method longitudinal studies.

Practical implications – The findings of this research provide a diagnostic lens for ecosystem managers and policymakers to anticipate when to prioritise coordination, facilitation, and brokerage, or an integration approach, and how to project the intermediary role within the ecosystem.

Originality/Value – This study shifts intermediary theory from type-based categorisation towards a processual, capability-based approach of the intermediary role reconfiguration aligned with ecosystem evolution.

Keywords: ecosystem governance, innovation ecosystems, intermediaries, open innovation, sustainability.

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1. Introduction

Innovation Ecosystems (IE) have emerged as the increasingly common organizational architecture for addressing complex societal and technological challenges, ranging from industry – focused clusters to smart city transitions, and digital healthcare systems (Adner, 2017; Jacobides et al., 2018). By loosely coupling heterogeneous actors – such as municipal governments, deep-tech startups, and academic institutions – these IEs enable co-creation of value that no single organization could achieve in isolation (Granstrand & Holgersson, 2020). While the potential for generative innovation is high, the structural volatility of these

systems presents a profound governance challenge. Holgersson et al. (2022) explain such volatility as the outcome of shifting balances between centripetal forces (benefits of tighter coordination/integration) and centrifugal forces (benefits of autonomy/market coordination), which can expand, contract, or reconfigure IEs over time. This force-balance view rationalizes why intermediation in IEs cannot be treated as static, but must be approached as adaptive, responding to changing complementarities and coordination demands. As IEs evolve, they are frequently destabilized by the very heterogeneity that drives them, leading to fragmentation, misalignment of incentives, and the *death valley* of failed pilot projects (Dedehayir et al., 2018; Adner & Euchner, 2022; Kohtamäki et al., 2022).

To mitigate these risks, the innovation management literature has extensively documented the importance of governance and intermediation (Hoffmann et al., 2022). Scholars have traditionally produced rich taxonomies of intermediaries categorized by organizational type – classifying actors as incubators, Technology Transfer Offices (TTOs), living labs, or accelerators (Howells, 2006; Klerkx & Leeuwis, 2009). More recently, however, leading scholarship has begun to challenge this institution-centric view, arguing for a classification based on role and function rather than organizational label. Notably, Tedesco and Serrano (2019) from the MIT D-Lab argue that IE analysis requires shifting focus from “actor types” to specific roles and value contributions, while Banga and Gaile-Sarkane (2024) introduce the *bridge maker* (BM) role as a distinct functional role necessary for overcoming fragmentation. This study represents a follow-up and empirical validation of that conceptual framework. While the 2024 research provided the definition of the BM role, it left a gap regarding the mechanisms of adaptation. We still lack a micro-level explanation of how (and by whom) connector – facilitator – integrator functions are reconfigured across the IE lifecycle as IE member maturity, agendas, and urgency shift, especially under resource constraints. Lifecycle accounts describe how IE needs evolve over time, but they typically do not specify the mechanisms of “mode switching” that reallocate governance work in practice (Santos et al., 2022).

At the same time, innovation intermediaries and IE-supporting actors are increasingly expected to build capabilities, accelerate collaboration, and reduce frictions among participants, especially for resource-constrained organizations, thereby shaping IE value creation through their governance contributions (Hafeez et al., 2025). Achieving this is difficult because research on open innovation obstacles repeatedly highlights that organizational limits such as capabilities, time, managerial attention, routines, and governance capacity shape whether collaboration can be executed effectively (Diener et al., 2024; Vanhaverbeke et al., 2024). Consequently, a governance structure that succeeds in early stages may become a bottleneck later if the intermediary cannot adapt its core functions to these constraints. This risk intensifies because an IE’s needs shift radically over time, from trust-building and legitimacy in the genesis phase to standardization and scaling in the maturity phase (Spindler et al., 2025).

This study addresses this gap by developing the concept of *adaptive intermediation* (AdI). We argue that sustainable IE governance requires not merely a fixed intermediary actor, but a fluid, dynamic managerial capability (Adner & Helfat, 2003; Teece, 2018; Raizada & Sinha, 2025; Foss et al., 2023) that can reconfigure governance mechanisms in response to external shocks and internal maturity shifts. Similarly, Oliver and Rittblat (2023) underscore that facilitating innovation for complex societal challenges in sustainability contexts hinges

on building flexible innovation communities and partnerships, reinforcing the need for an adaptive intermediary role (Toth & Hary, 2024). This adaptive role is conceptualized from the emerging *bridge maker* concept (Banga & Gaile-Sarkane, 2024). The BM role is not proposed as the only intermediary model; rather, it exemplifies an emerging role configuration that becomes especially relevant when IEs are heterogeneous, time-pressured, and resource-limited. Building on intermediation reviews (Feser, 2023; Noviaristanti et al., 2023) and governance syntheses (Hoffmann et al., 2022; Rodrigues et al., 2025), we conceptualize the bridge-making as an adaptive configuration that enables governance to shift in response to changing ecosystem conditions – internal and external. In this study, we treat the BM not only as an actor or capability in itself, but as a role configuration enacted by a designated governance unit within the ecosystem. Its dynamic managerial capability refers to its ability to purposefully reconfigure governance functions over time. The BM denotes the specific bundle and weighting of intermediation functions (connecting, facilitating, integrating) through which this capability becomes observable in practice. This anonymised smart city ecosystem case study from Lavtia does not generalize that BM is always the main IE governance unit, as there might be different configurations, and they also might dynamically change.

To guide this inquiry, this paper addresses the following research question (RQ):

How do intermediation functional roles reconfigure as IE develops and members' maturity, agendas, and urgency evolve?

In addressing this RQ, the study constructs its research framework based on the following conceptual parameters:

- The *Bridge Maker*, which is defined as an emergent governance configuration within the IE. The 'BM role' refers here to the configuration of intermediation functions (what is enacted), rather than to a specific organization (who enacts it).
- The dynamic process of *Adaptive Intermediation*, specifically, the functional shifting between connector, facilitator, and integrator modes under varying degrees of IE urgency and actor maturity.

2. Literature review

2.1. The governance of innovation ecosystems: orchestration dilemma

Recent research has firmly established the IE as a distinct organizational form, defined by the multilateral set of partners that need to interact for a focal value proposition to materialize (Burt & Oppen, 2026; Adner, 2017). Unlike traditional supply chains governed by linear contracts, IEs are characterized by non-generic complementarities and the interdependence of autonomous actors (Breslin et al., 2021; Granstrand & Holgersson, 2020). Holgersson et al. (2022) also argue that IEs persist when coordination benefits and autonomy benefits coexist; when the balance shifts, the IE's governance needs shift as well. In this sense, the orchestration dilemma is not only structural, but dynamic: evolving complementarities (e.g., through modularization or standardization) continuously reshape where coordination must be centralized versus left to distributed interaction (Autio, 2022). This structural fluidity creates a fundamental *orchestration dilemma*: how to align the goals of heterogeneous actors – startups, corporates, universities, and cities – without the hierarchical authority to command them (Dhanaraj & Parkhe, 2006; Reypens et al., 2021). The literature identifies two dominant modes

of resolving this dilemma, yet neither fully explains the dynamics of emerging civic-innovation contexts. Hub-firm orchestration: it is specific for platform-based IEs, where a “keystone” actor (e.g., Apple, Airbus) enforces governance through technological architecture and resource dominance (Costabile, 2024). Governance here is centralized, structural, and often coercive regarding value capture (Piantoni et al., 2023). When addressing social or civic IEs, the governance is often described as a shared, consensus-based process among equals (Pel et al., 2020; Olk & West, 2023). Governance here is decentralized and relational, relying on shared norms rather than formal power (Kerstens & Langley, 2025).

Recent empirical evidence suggests that many IEs – particularly those addressing *grand challenges*, such as smart cities – operate in a “hybrid” middle ground (Provan & Kenis, 2008). Comparable hybridity is visible in intermediary policy instruments: Latvia’s regional incubators are explicitly discussed through alternative governance arrangements – state, municipal, university-based, and privately managed – rather than as a single fixed organizational form (Markus et al., 2025). IE lacks a dominant hub firm with sufficient power to dictate terms, yet they require more direction than loose consensus can provide (Attarpour et al., 2024). This gap has led scholars to call for a better understanding of IE-supporting actors (Hafeez et al., 2025) or specialised governance entities that exert influence through their contribution and social capital rather than authority.

2.2. From static intermediaries to functional role configurations

Historically, the literature has categorized these supporting actors by organizational type, producing rich taxonomies of science parks, incubators, accelerators, industry, and TTOs (Howells, 2006; Briede & Gaile-Sarkane, 2023; Shen et al., 2024; Siegel et al., 2007). While useful for classification, this *type-based* view is increasingly criticized as static and insufficient for explaining IE dynamics (Feser, 2023). It assumes that an actor’s institutional label determines its function (e.g., an incubator facilitates).

Contemporary research is shifting toward a functional role-based perspective. Notably, Tedesco and Serrano (2019) argue that IE analysis must focus on the specific roles actors perform (e.g., connecting, promoting) rather than their institutional form. Building on recent reviews (Noviaristanti et al., 2023; Banga & Gaile-Sarkane, 2024), we distinguish three critical governance functions often conflated in the literature:

- *Connector* (Structural aspect): Focuses on bridging “structural holes” and reducing search costs. The goal is to link disconnected actors (e.g., matching a deep-tech startup with a municipal pilot site) to enable resource access;
- *Facilitator* (Relational aspect): Focuses on reducing cognitive and relational friction. This aligns with “boundary spanning” literature (Carlile, 2004), where the intermediary translates different institutional logics (e.g., bureaucratic vs. entrepreneurial) to build trust and to re-facilitate stakeholders as the situation and context change;
- *Integrator* (Systemic aspect): Focuses on alignment and execution. Here, the intermediary actively manages interdependencies, sets standards, or synchronizes activities to ensure the IE delivers a coherent value proposition (Adner, 2017).

As summarized in Table 1, this paper reframes intermediation from a static, organisation-centred lens to an adaptive, function-centred configuration of roles.

Table 1. Theoretical shift: From static intermediaries to adaptive role configurations (source: authors' analysis)

Dimension	Traditional intermediary view	Adaptive role configuration view (proposed)
Unit of analysis	The organization (e.g., Incubator, TTO)	The function (connecting, facilitating, integrating)
Governance mode	Fixed: the organization performs a set service portfolio	Fluid: the function shifts based on IE needs
Legitimacy source	Institutional mandate ("We are the official hub")	Performance & social capital ("We solve the bottleneck")
Response to crisis	Persistence: continuing standard services	Reconfiguration: adapting to high-urgency integration
Key literature	Howells (2006), Siegel et al., (2007)	Tedesco and Serrano (2019), Banga and Gaile-Sarkane (2024).

2.3. The missing link

Despite the emerging theoretical shift toward functional and role-based definitions of intermediation, mainstream research on innovation IE governance still under-specifies the functional mechanics through which intermediation is enacted, reallocated, and reconfigured over time. In particular, existing research acknowledges that IE coordination demands evolve yet offers a limited explanation of how specific governance functions (connecting, facilitating, integrating) are reconfigured in practice as IEs move across lifecycle stages and face changing conditions of maturity and urgency.

Orchestration literature research has provided important insights into how alignment is achieved among heterogeneous actors and how IEs resolve coordination without hierarchy (Dhanaraj & Parkhe, 2006; Shen et al., 2024; Olk & West, 2023). However, much of this work tends to conceptualize orchestration as a comparatively stable governance stance or a focal actor's ongoing set of practices. This leaves a theoretical gap regarding mode switching: how governance shifts between connecting, facilitating, and integrating configurations when urgency escalates, member readiness is uneven, and intermediaries must operate under resource constraints. In this sense, our focus is not orchestration as a practice but as an integration-dominant configuration within a broader portfolio of capabilities, where the central mechanism is functional reallocation across conditions. Boundary spanning research Carlile (2004) explains how intermediaries translate across institutional logics and knowledge domains to reduce cognitive and relational friction, which closely aligns with what we define as the facilitator function. Yet boundary spanning alone does not provide a theoretical reasoning for how intermediaries reconfigure governance when IEs transit from Coordination-through-Translation to Coordination-through-Execution. Specifically, it does not fully account for shifts that involve reallocating decision rights, establishing standards, synchronizing interdependencies, or temporarily centralizing governance to maintain delivery under time pressure.

To validate the nature of the research gap, we conducted a targeted bibliometric probe of the Scopus database to verify the theoretical tension between "static types" and "dynamic roles." Using the Scopus database (2000–2025), we executed a structured query to map the

intersection of innovation ecosystem governance and explicitly named intermediation functions. Consistent with the guidelines on search-strategy transparency in management review research (Szarucki et al., 2025), we report the query logic, temporal boundary, and selection rationale in order to make the problematization procedure transparent and open to conceptual replication. At the outset, the search was limited to English-language publications and to document types most likely to contain substantive conceptual and empirical contributions relevant to applied business and management, social sciences inquiry (LIMIT-TO (SUBJAREA, "BUSI") OR LIMIT-TO (UBJAREA, "SOCI")), namely journal articles, conference papers, books, and book chapters. The broad search string was defined as: TITLE-ABS-KEY (("innovation ecosystem*" OR "innovation eco-system*") AND (governance OR orchestrat* OR coordinat*)) AND PUBYEAR > 2000 AND PUBYEAR 2025, which resulted in 1810 documents. To identify the narrower body of studies addressing intermediation as a functional governance mechanism and specifically the roles of intermediaries, we then refined the query by adding role-specific terms: AND (intermediar* OR broker* OR facilitat* OR integrat* OR orchestrator* OR bridge maker). This two-stage search design allowed us to contrast the broader governance corpus with the much smaller subset explicitly concerned with functional intermediation roles. This refinement resulted in a substantial drop to 35 documents (approximately 2% of the corpus), with 27 in the last decade, 2020–2025.

This steep reduction of the existing research body supports the problem we identify: the field possesses a macro-theory of governance but lacks a micro-theory of functional adaptation. IEs require governance, but we lack rigorous models explaining how intermediation functions are modulated when IEs transition from a relationship-formation and experimentation phase to a high-commitment implementation and scaling phase (Spindler et al., 2025). The search was conducted in Scopus and limited to documents in English. The bibliometric search confirms that while "governance" is widely discussed, the specific micro-foundations of "who does what" (connecting vs. integrating) remain under-theorized and present the research gap we address.

3. Conceptual framework

3.1. Adaptive intermediation as a dynamic capability

To explain how and why the intermediation functions shift over time, this study adopts the *Dynamic Capability* (DC) lens (Teece, 2018; Foss et al., 2023). Because ecosystem governance is enacted by an organizational actor rather than the ecosystem as an entity, we operationalize this lens at the level of the designated governance unit: its dynamic managerial capability is the capacity to purposefully create, extend, or modify the ecosystem's resource base and governance arrangements (Sannikova et al., 2025). We posit that the BM is not merely a static role, but a manifestation of the IE's dynamic managerial capabilities. Effective intermediation requires the ability to cycle through Teece's three micro-foundations:

- *Sensing*: monitoring the IE for shifts in member maturity or external urgency (e.g., identifying a "legitimacy deficit" in the genesis phase);
- *Seizing*: mobilizing the network to capture opportunities (e.g., activating the *Connector* function to form a consortium for a new funding call);

- *Transforming*: reconfiguring the governance structure itself (e.g., shifting from a loose Facilitator mode to a directive Integrator mode during a crisis).

In the context of our research, we integrate the lifecycle theories here, which suggest that IE needs to evolve predictably – from trust-building in genesis to standardization in maturity (Spindler et al., 2025). A Connector function is vital in the ecosystem genesis phase to reduce search costs and build critical mass. However, as the IE enters the expansion phase, the primary constraint shifts from finding partners to making them work together. Here, the governance function must pivot to the integration function.

Current literature often fails to capture this pivot, treating the intermediary as a constant variable. By synthesizing these streams, we define the BM as an emerging role configuration that dynamically bundles connector, facilitator, and integrator functions. This concept addresses the reality of modern, resource-limited open innovation systems (Robertson & Lapina, 2023), where organizational limits – capabilities, time, and managerial attention – often prevent the deployment of separate, specialized intermediaries (Alam et al., 2022; Vanhaverbeke et al., 2024; Hafeez et al., 2025). Exploring the emerging role configuration and possible context-dependent role shift, we continue our search in the direction, similar to what is indicated by Santos et al. (2022), who developed the framework of *Actors' Coordination in the Life Cycle of Innovation Ecosystems*, pointing at IE coordination as evolving across lifecycle stages.

3.2. The functional roles of an Intermediation

Building on the orchestration dilemma and the dynamic capabilities view outlined in the literature review, this section develops the conceptual framework Adl. We posit that in modern IE – characterized by heterogeneity and resource constraints – governance cannot be treated as a static structural attribute. Instead, IE survival depends on a dynamic managerial capability (Adner & Helfat, 2003; Teece, 2018) that enables reconfiguring governance functions in response to shifting IE conditions.

The governance unit exhibits dynamic managerial capability by reconfiguring the BM role and functions over time. While ordinary capabilities allow the IE to operate in a steady state, DCs are required to purposefully modify the IE's resource base when faced with external shocks or internal bottlenecks (Enkel et al., 2020; Teece, 2018). In this framework, the BM operationalizes Teece's (2018) micro-foundations of DC. First, the role involves *sensing*, a continuous monitoring function where the intermediary scans for IE "health" indicators, such as identifying structural holes between disconnected actors or detecting friction in knowledge flows. Second, it involves *seizing*, the ability to mobilize the network to capture value, often by reducing search and transaction costs to enable rapid consortium formation (Clauss & Ritala, 2023). Most critically, it involves *transforming* – the capacity to reconfigure the governance structure itself. This transformational capability allows the BM to shift from a loose, consensus-based facilitator to a directive system integrator when the IE's survival is threatened by urgency or fragmentation.

To explain how this capability manifests in practice, we distinguish three specific governance modes that the BM toggles between; these modes represent distinct mechanisms of value creation. The first functional role is the *Connector*, which provides structural governance.

Here, the primary mechanism is brokerage (Burt, 2005). The BM addresses “structural holes” by linking disconnected actors – for example, matching a deep-tech startup with a municipal department (Stahl et al., 2024). This mode is dominant when the primary barrier to value creation is high search costs. The second mode is the *Facilitator*, which provides relational governance through translation. In this mode, the BM addresses cognitive distance (Nooteboom et al., 2007) by harmonizing the disparate institutional logics of partners, such as aligning the bureaucratic timelines of a city with the agile sprints of a startup. This is essential when the barrier is relational friction or lack of trust. The third mode is the *Integrator*, which provides systemic governance through alignment. Unlike the *Connector* or *Facilitator*, the *Integrator* actively manages interdependencies, establishes technical standards, and synchronizes activities to ensure the IE delivers a coherent value proposition (Adner, 2017).

A BM acting as a directive *Integrator* in a low-trust, early-stage IE risks being rejected as authoritarian, while a *Connector* who merely introduces people during a high-stakes crisis may be viewed as ineffective. We propose that the optimal governance configuration is moderated by two critical variables: IE’s Member maturity (the readiness of actors to collaborate) and IE Urgency (temporal pressure from internal and external shocks or scaling targets). In this study, IE Urgency has been empirically realized through observable temporal and consequence cues, such as compressed deadlines, externally imposed delivery windows (e.g., deployment or crisis-response timetables), and decision-making episodes characterized by reduced tolerance for iteration. Member maturity has been recognized through actors’ demonstrated ability to self-organise and execute interdependent tasks, including reduced need for translation/support, proactive coordination behaviors, and consistent delivery of agreed outputs without intermediary substitution. These dimensions can be synthesized into the AdI Matrix, illustrating how the BM must reconfigure its role to maintain alignment (Table 2.).

Based on the presented framework, we propose the following guiding research questions for a further exploratory case study:

Guiding Research Question 1: Whether and how the intermediary’s functional role changes with the lifecycle of the Innovation ecosystem?

Guiding Research Question 2: How does the intermediary’s functional role align with the maturity and urgency of the actors in the Innovation ecosystem?

Table 2. The adaptive intermediation matrix: governance configurations (author’s elaboration based on Teece, 2018; Banga & Gaile-Sarkane, 2024).

	Low IE urgency	High IE urgency
Low member maturity (novice actors)	Function: facilitator Mechanism: trust building & education. Goal: The BM creates a “safe space” to raise absorptive capacity.	Function: connector + integrator Mechanism: substitution. Goal: The BM centralizes decisions to compensate for member incapacity during high-pressure events.
High member maturity (capable actors)	Function: connector Mechanism: Brokerage. Goal: members are self-sufficient; the BM links them to new external value opportunities.	Function: integrator Mechanism: orchestration. Goal: The BM enforces strict alignment to execute complex projects rapidly.

4. Case study design and research methodology

Our research was designed as a sequential trajectory: (1) a targeted bibliometric probe was conducted to establish the under-theorization of functional intermediation roles within the broader governance literature; (2) the conceptual theoretical framework was developed based on the literature analysis; 3) an exploratory single-case study was conducted to compliment theoretical findings by empirical insights, while examining whether and how BM functions reconfigure under shifting IE conditions.

To investigate the dynamic reconfiguration of intermediation roles, this study adopts a qualitative abductive research design (Dubois & Gadde, 2002). Rather than relying on pure induction (theory generated from data alone) or deduction (hypothesis testing), we applied systematic combining (Dubois & Gadde, 2002) iterating between the theoretical domains of IE governance and the empirical realities of the focal IE to allow emergent role configurations to be progressively refined.

4.1. Case study: smart-city open IE

Given the contextual character of the AdI, we employed a single-case study design (Yin, 2018) and exploratory research logic using a mixed-method approach (Creswell & Plano Clark, 2018, Gierus et al. 2025). By choosing the single case study, we align our position with Dubois & Gadde (2002), who argue that choosing to go deeper into one case instead of increasing the number of cases is the most natural „when the problem is directed towards analysis of a number of interdependent variables in complex structures“(Dubois & Gadde, 2002).

The unit of analysis here is a smart-city open IE established in 2019 in a post-industrial urban district in a Baltic capital city, positioned as a testbed for urban mobility and broader digital innovation initiatives. The empirical boundary of the case is the IE's institutionalized governance body (the BM team) and its governance actions integrating different IE actors across diverse initiatives conducted under the IE umbrella between 2019 and 2024. The IE structure reflects a Helix configuration involving a municipal authority, technology incumbents and startups, a technical research university and the citizens. This construct is highly relevant in civic and smart-city contexts (Paskaleva et al., 2021) because it explains how public coordination, entrepreneurial experimentation, and knowledge production are combined to enable collective innovation and ecosystem development.

The case is analytically useful because intermediation is institutionalized: a dedicated IE management unit was mandated to coordinate across heterogeneous participants and manage collaboration frictions in the absence of hierarchical authority, enabling direct observation of BM work in the situation. The 2024 period also spans distinct coordination conditions – an initial genesis phase focused on trust-building and partner alignment, a pandemic-related urgency shock that compressed timelines and heightened delivery pressure, and a later phase of infrastructure-enabled experimentation and mobility pilots in which interdependencies increased and more integrative alignment work (e.g., implementation protocols, stakeholder synchronization, and engagement with relevant public authorities) became more salient (Tönurist & Orlik, 2025). The case was selected as a critical case because it meets three key circumstances to set the most relevant context for the case analysis (Yin, 2008), and therefore determine

the relevance of the contribution to theoretical findings aligned with the study's framework: (1) structural heterogeneity, in that institutional diversity generates persistent coordination frictions that make bridging work observable; (2) high variance in urgency, enabling examination of how governance role shifts under time pressure; and (3) explicit institutionalization of the phenomena explored (intermediation through a dedicated management team, allowing systematic observation of bridging functions as enacted practices rather than inferred roles).

4.2. Data collection and analysis

Data collection followed a triangulation strategy (Carter et al., 2014) to strengthen construct validity, by further empirical exploration. Following Creswell and Plano Clark (2018) we applied a mixed-method approach, using a simultaneous triangulation of qualitative and quantitative methods: the semi-structured interviews used for a case study consisted of open and rating-based questions. Stakeholder interview questionnaire is provided in Appendix. Our primary interpretative data consists of 8 in-depth semi-structured interviews ($n = 8$) with core governing stakeholders conducted in 2024, these findings were corroborated against a five-year archive of secondary data. The interview sample was intentionally bounded to the ecosystem's core governance population: semi-structured interviews were conducted with governance-relevant stakeholders across the focal ecosystem, covering government, industry, academia, and ecosystem management. The eight respondents represent the principal board-level and decision-making stakeholders responsible for strategic direction, coordination, and resource alignment within the focal ecosystem. Accordingly, the sample should be understood not as a limited subset of a larger respondent pool, but as near-complete coverage of the actors most directly relevant to the unit of analysis, namely ecosystem-level governance and the enactment of intermediation functions.

First part of the interview was composed of open questions to investigate the roles and importance of different IE players for ecosystem governance, asking to explain their position by providing contextual, real-life episodes. Following a mixed method technique, the second part of the interview comprised the rating questions (i.e., qualitative to quantitative research shift (Cresswell & Plano Clark, 2018; Gierus et al., 2025), to explore the perceived level of IE urgency. In addition, each interview included a short-structured elicitation task in which respondents allocated percentages summing to 100 across the three BM functions – *Facilitator*, *Connector*, and *Integrator* – to indicate their perceived relative importance; these allocations were aggregated to generate the pie-chart proportions presented in Figure 2. Given that the interviews were originally designed to focus on governance efficiency - specifically addressing the (re)distribution of governance roles and power within a real, operational ecosystem, and were therefore perceived by informants as involving sensitive information, the interviews were not audio-recorded as per the request of respondents. Instead, each interview was documented through a detailed contemporaneous memo prepared on the same day, and the answers to the ranking questions were manually marked by the researcher during the interview. The interviews lasted 40–60 minutes. The interview protocol and sample are reported as an audit trail in Appendix, Table A1. To triangulate retrospective accounts, we also analysed a corpus of provided internal and public documents in order to establish a chronological baseline of the ecosystem's trajectory, governance commitments, initiative milestones, and periods

of heightened urgency. In Appendix Table A2, is provided longitudinal data inventory of the IE for this case study. This dataset, collected prior to the interview, allowed researchers to increase a pool of common knowledge with informants, enabling to formulate clarifying questions during the interview and return to data analysis in a post-interview stage to refine the findings or verify interview data if necessary.

5. Searching for new intermediation role configurations in innovation ecosystems

Our case study of the smart city IE example reveals that “intermediation” is not a singular activity but a composite capability that shifts in response to environmental conditions. This section maps the IE’s landscape in terms of urgency and readiness and demonstrates how the BM reconfigured its functional mix to match these shifting realities.

5.1. Mapping ecosystem: urgency-Readiness landscape

To understand the triggers for role reconfiguration, we first mapped eight key case study stakeholders (coded S1–S8) against the two critical dimensions identified in our theoretical framework: IE Urgency (x-axis) and Stakeholders Innovation Readiness (y-axis). This mapping was derived from the triangulation of quantitative interview data and the case study project’s public documentation.

As illustrated in Figure 1, the Stakeholders did not distribute randomly. Instead, they clustered into distinct “pressure zones”:

- The Incubation zone (low Urgency, mixed Readiness): S3, representing an early-stage participant, sits in a zone where time pressure is moderate, allowing for exploration;
- The Scaling zone (medium Urgency, high Readiness): A cluster of stakeholders (S2, S4, S5, S8) represents the IE’s steady state, where stakeholders are capable, and timelines are aggressive but manageable;
- The Crisis/Deployment zone (high Urgency, high Readiness): The cluster in the top right (S1, S6, S7) represents high-stakes initiatives (e.g., 5G military testbed) where failure is not an option, and timelines are compressed.

Entity Mapping: Location & Clustering

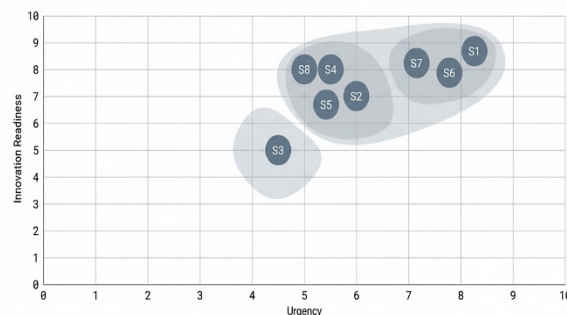


Figure 1. Case study IE landscape: mapping urgency vs. Stakeholder innovation readiness based on case study participants’ rating results (source: authors’ analysis)

This mapping provides empirical justification for our central argument: a static intermediary role (e.g., a pure *Connector*) would fail to address the disparate needs of Stakeholder S3 (which needs *hand-holding* support) versus Stakeholder S1 (which needs rapid execution).

5.2. BM response: reconfiguring the role mix

Our analysis of the interview data on the BM's daily activities revealed a dynamic toggling between three functional roles: connecting, facilitating, and integrating. Unlike traditional definitions that silo these roles, our case demonstrates that the BM performs a weighted mix of all three simultaneously, but the ratio changes dramatically based on the zone. Figure 2 depicts this functional mix in the IE activity landscape. Pie chart proportions reflect stakeholders' interview-based percentage allocations of how the BM should distribute effort across its three functions (*Facilitator*, *Connector*, *Integrator*). Respondents were asked to allocate percentages summing to 100%; segment sizes represent the aggregated distribution. These values capture the perceived functional importance of the BM role for the interviewed survey participants, not direct BM time-tracking observations.

The Coordinates of Intervention: Urgency vs. Innovation Readiness

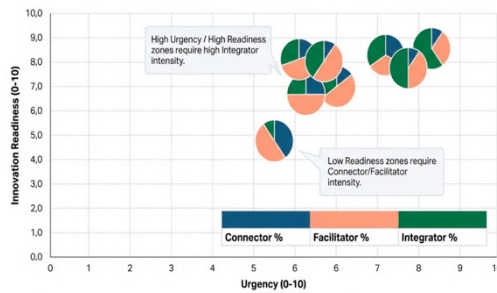


Figure 2. Role configuration analysis. The pie charts illustrate the changing functional mix (Connector/Facilitator/Integrator) based on IE case study results (source: authors' analysis)

For initiatives in the lower-urgency zones (e.g., S3), the visualisation reveals a dominance of Facilitating and Connecting functions. For example, during the early mobility hackathons, the BM team spent the majority of its effort translating “municipal language” for startups (Facilitation) and only a fraction on directive integration. As one interviewee noted, “At that stage, they weren’t telling us what to do; they were just teaching us how to speak to the city.”

Figure 2 reveals a shift in the functional composition of the BM role as ecosystem conditions move toward the high-urgency, high-readiness cluster (S1, S6, S7). In this zone, the Integrator component becomes more pronounced than in lower-urgency settings. In the case material, this pattern was visible in the 5G deployment projects, where the BM reduced time spent on consensus-oriented coordination and assumed a more directive role in aligning tasks, sequencing actions, and maintaining delivery momentum. Across the case, the findings indicate that the BM rebalanced its portfolio of connecting, facilitating, and integrating activities in line with changing urgency and stakeholder readiness conditions.

Our research results confirm that BM does not simply “do more” as the IE grows; they “do differently,” rebalancing their portfolio of Connecting, Facilitating, and Integrating functions to suit the specific coordinates of Urgency and Readiness, being adaptive to the IE life cycle stage.

6. Discussion

Prior literature has predominantly categorized intermediaries by their institutional labels – distinguishing between science parks, accelerators, and living labs as distinct types (Feser, 2023; Howells, 2006). While useful for taxonomy, this view creates a “static trap,” assuming that an incubator always “incubates” and a connector always “connects.” Our findings from the case suggest that effective governance is not a static property of a specific organization (e.g., an incubator or TTO) but a designated governance unit with dynamic managerial capability (Adner & Helfat, 2003; Teece, 2018) that toggles between connecting, facilitating, and integrating modes. Following Ulaga et al. (2021) methodology, we transform our research results into four propositions for further testing:

Proposition 1 (The Lifecycle shift). The effectiveness of IE governance is positively moderated by alignment between the intermediary’s functional mode and the IE’s lifecycle stage. More specifically, we argue that the *Connector* functions (often complemented by *Facilitator* work for trust-building and alignment) are most critical in the IE genesis phase for building legitimacy. The Integrator functions are most critical in the expansion phase (efficiency and execution). Mechanism: alignment improves governance outcomes by lowering search and legitimacy barriers in early stages (brokerage and relationship activation) and by reducing interdependency failure in later stages (standard-setting, synchronization, and enforcement).

Proposition 2 (The Maturity substitution). In an IE characterized by low member maturity, the BM is more likely to substitute for missing actor capabilities by fusing facilitation and integration functions; as member maturity increases, these functions are more likely to decouple to avoid the BM becoming a coordination bottleneck. This suggests a clear underlying mechanism: under low maturity, bundling facilitation and integration supplies a “prosthetic” coordination capacity (templates, translation, clarification of decision rights and responsibilities), whereas progressive decoupling as maturity rises reduces coordination overload and limits intermediary-centered bottlenecks.

Proposition 3 (The Urgency centralization). High IE urgency acts as a catalyst for governance centralization: regardless of lifecycle stage, urgency spikes are associated with a temporary shift from distributed (*Facilitator*-dominant) coordination toward more centralized (*Integrator*-dominant) governance to reduce coordination latency. Mechanism: centralization lowers latency by concentrating decision rights, accelerating sequencing of interdependent tasks, and introducing time-bounded standards/rules that reduce iteration costs under delivery pressure.

Proposition 4 (The Dynamic reconfiguration). IE resilience is expected to depend on the BM’s functional expression of a dynamic capability to sense shifts in Urgency and Maturity and rapidly reconfigure governance modes (e.g., moving from configuration A to configuration D) without eroding member trust. Mechanism: resilience is enabled when the BM can sense changing urgency/readiness cues, seize by mobilizing actors and resources, and

transform by reallocating decision rights and coordination routines – while maintaining legitimacy through transparent, explicitly time-bounded centralization.

Our analysis disrupts this view by validating the dynamic role configuration of the BMs. The case study results demonstrate that the same organizational entity performed radically different functions depending on the IE's Maturity and Urgency. In the genesis phase, the BM acted primarily as a *Facilitator* towards building legitimacy in the IE: prioritising relational trust, interaction smoothing and reduction of social friction, to bring disparate actors to the same table. As the IE matured, the BM role changed to *Coordinator*, performing a brokerage function as the prime responsibility. The growing commitments of the mature IE and the faced external shocks, triggered pivoting of the same actor to a directive *Integrator* role. This finding supports Proposition 1, extending the work of Tedesco and Serrano (2019) by adding a temporal dimension to role-based analysis. It suggests that the BM is a composite role configuration – an observable manifestation of dynamic managerial capability. The governance unit adapts its intermediation mix across conditions through that.

The standard open innovation concept often posits that complex problems require decentralized, distributed problem-solving to maximize creativity (Olk & West, 2023). The pattern observed in the high-urgency cluster supports Proposition 3 by indicating that urgency can trigger a temporary shift toward more centralized, integration-heavy governance. Rather than remaining in a facilitation-dominant mode, the governance unit reallocated effort toward alignment, sequencing, and tighter coordination, consistent with the theorized mechanism of urgency-driven centralization. Comparable dynamics are reported in sustainability-oriented IE, where facilitation is explicitly framed around SDG 17 partnership formation and must evolve as complex societal conditions shift (Sáez et al., 2025). Oliver and Rittblat (2023) show that IE facilitators may need to move beyond convening into more directive alignment of encounters, external resources, and system reconfiguration when urgency escalates. This study supported this proposition by empirical evidence of substituting for the lack of member readiness by enforcing strict integration protocols under high-urgency scenarios.

Our case analysis validates Proposition 2 (The Maturity Substitution): in the absence of mature IE members who can self-organize, the BM must serve as a “prosthetic capability,” supplying the coordination capacity that the members lack. As members mature (e.g., as startups become more adept at navigating municipal regulations), the BM must decouple, reverting to a facilitator role to avoid becoming a bottleneck (Bally et al., 2025). This dynamic change – tightening control during urgency and loosening it during stability – resolves the Orchestration dilemma (Dhanaraj & Parkhe, 2006) by showing that control and autonomy are not binary choices, but sequential states.

7. Conclusions

This study challenges static, type-based conceptions of intermediation in IE by examining how intermediation functions are reconfigured over the IE lifecycle. Drawing on a critical case of the smart-city IE example from Latvia, we show that intermediaries should not be treated as stable, one-size-fits-all entities; rather, effective intermediation is best understood as a dynamic role configuration in which connecting, facilitating, and integrating functions are bundled

and unbundled as coordination demands evolve. In addressing the research question *How do intermediation functional roles reconfigure as IE develops and members' maturity, agendas, and urgency evolve?* we conceptualize IE governance not as a fixed structural arrangement but as a dynamic capability that shifts in conjunction with IE members' urgency and maturity.

The case demonstrates that the BM role did not remain functionally stable across the ecosystem trajectory, but was reconfigured in response to changing urgency and stakeholder readiness conditions. In lower-urgency and earlier-stage settings, facilitating and connecting functions were more prominent, whereas under high-urgency deployment conditions, the role shifted toward stronger integrative alignment and more centralized coordination. This pattern supports the framework's core claim that effective ecosystem governance depends not on a fixed intermediary type, but on the adaptive reconfiguration of intermediation functions over time. More specifically, under conditions of heightened urgency and uneven readiness, governance tends to centralize, requiring a fused BM configuration in which coordination and facilitation are compressed into more directive integration. At the same time, the low-member-maturity substitution logic is only partially visible in this case and should therefore be treated as a preliminary pattern requiring further comparative validation; as the ecosystem stabilizes, these functions may diffuse across established actors, although integrative capacity appears to remain a latent, on-call capability that can be reactivated when urgency intensifies again.

The study contributes to existing research body by (i) reframing intermediation from static intermediary types to a portfolio of functions that is reallocated over time, (ii) operationalizing this logic via the Adaptive Intermediation Matrix as a diagnostic tool to identify which functional mode is likely to be effective, and (iii) mapping how specific intermediary functions rise and recede across IE lifecycle, thereby contributing to research on intermediation as a resilience mechanism in IEs. As a single-case study situated in a particular civic-innovation context, these insights invite comparative and longitudinal research to test boundary conditions across IEs with different institutional logics, power asymmetries, and shock profiles.

8. Limitations and future research agenda

While this study advances a processual lens on IE governance, its findings are limited by the empirical scope of a single-case design situated in a specific institutional context. Future research should therefore test the portability of the proposed logic through comparative and longitudinal designs that examine how different BM arrangements operate in centralized (with a single focal intermediary), distributed (bridging functions shared across actors), and rotating configurations (Davis & Eisenhardt, 2011). Such comparisons could clarify key trade-offs between buy-in and coordination efficiency. Moreover, longitudinal studies are also needed to trace how BM configurations emerge, stabilize, and potentially recede, transform, or reappear as IEs mature and face new shocks. Methodologically, participatory and intervention-oriented approaches could provide additional leverage. We advocate for Participatory Action Research, which would allow researchers to collaborate with IE members to deliberately pilot alternative intermediation setups (e.g., time-bounded rotating facilitation committees or temporary integration taskforces) and observe the coordination dynamics and implementation effects in real time.

Author contributions

Kristaps Banga contributed by designing the research idea, conducting literature review and empirical data collection and analysis, interpretation of the results. The data analysed were collected by him for Kristaps doctoral thesis. Asta Radzevičienė contributed to study design, theoretical framework and interpretation of results, manuscript editing. Elina Gaile-Sarkane contributed by study design, manuscript editing.

Disclosure statement

We confirm that this work is original and has not been published elsewhere nor it is currently under consideration for publication elsewhere. We confirm that there are no known conflicts of interest associated with this publication. There has been no financial support or project funding received for this work that could have influenced its outcome. We confirm that there are no intellectual property impediments to the publication of this research. We acknowledge that the corresponding author is the sole contact for the editorial process and communications with the editorial team.

AI Declaration

During the preparation and revision of this manuscript, we used Grammarly Free and ChatGPT 5.5 Thinking as language-support and formatting tools. Since English is not our native language, these tools helped us check grammar and spelling, improve sentence clarity and readability, make minor sentence-level edits, support formatting, and review the consistency of in-text citation formatting. These tools were not used to develop the theoretical argument, conceptual framework, empirical data, data analysis, findings, propositions, or conclusions. All substantive scholarly content, literature interpretation, methodological choices, empirical analysis, and final revisions were developed, checked, and approved by the authors.

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APPENDIX

Table A1. Interview sample (stakeholders' names anonymized). The permission to share data was not given (source: authors' analysis)

ID	Stakeholder's type	Interview date mm/yyyy	Duration (min)	Interview focus / key governance expectation (audit trail based)
S1	Government	10/2024	55	Emphasized the value of agenda stewardship and continuity; highlighted the need for an accountable coordinator to maintain momentum across municipal units and sustain commitment.
S2	Industry	10/2024	45	Positioning as a high-readiness partner, expected more proactive activation of stakeholders and faster progression from coordination to implementation during pilots and deployments.
S3	Industry/Startup	09/2024	40	Valued access to high-impact stakeholders and clearer pathways to pilots; stressed the importance of brokerage into municipal and corporate interfaces to reduce search and access barriers.
S4	Academia	09/2024	45	Highlighted visible progress and the value of tailored engagement; emphasized translation across institutional logics to sustain collaboration, knowledge flow.
S5	Industry	10/2024	55	Recognized the benefit of structured engagement and agenda discipline; requested clearer prioritization and faster conversion of initiatives into tangible deliverables.
S6	Academia	10/2024	45	Emphasized tailored partner matching and alignment of research contributions with ecosystem roadmaps and implementation timelines to ensure applicability.
S7	Industry	10/2024	60	Valued disciplined connection processes and active agenda maintenance; called for clearer outcomes and accelerated decision cycles to improve execution pace.
S8	Industry	10/2024	55	Stressed speed and outcome orientation; expected a stronger coordinating and standard-setting posture when timelines tighten and delivery pressure increases.

Table A2. Longitudinal data inventory of the IE (accessed for a background analysis for a case study) (2019–2024)

Data type	2019–2020 (Genesis)	2021–2022 (Expansion/)	2023–2024 (Deployment)	Total items
Documents	Strategy Papers (12)	Project Reports, Roadmaps (18)	Pilot Evaluations, KPIs (15)	45

Stakeholder interview questionnaire [will be shared on demand basis for readers]

Stakeholder interview questionnaire.

Your name

Type of your organization* (e.g., Municipality, University, Ministry, Industry, NGO, Research Center, Consulting & Experts, Venture capital, etc.)

No.	Question	Response type	Scale
OQ	To what extent the following players are important to ensure an efficient governance in your ecosystem? Describe their role in specific situations where possible? Provide your comment for each: Municipality, University, Ministry/ Government agency, Industry (established companies), Startups, Research center, Consulting & Experts, NGO, Investors, Creative agencies). Municipality Startups University Ministry NGO Industry Investors Research Centers Creative Agencies Consulting & Experts	Open/Text	Qualitative survey data
01	In what industry does your company operate?	Short answer	Example: Finances, Retail, IT
02	In which country does your company operate?	Short answer	Example: UK, France, US, India
1	How critical are the challenges your organization is currently facing?	Rating	1 = not critical; 10 = extremely critical
2	To what extent do existing solutions adequately address the challenges your organization faces?	Rating	1 = fully addressed by current solutions; 10 = current solutions are insufficient
3	How much pressure is your organization under to innovate to remain competitive or address pressing issues?	Rating	1 = low pressure; 10 = high pressure
4	How quickly does your organization need to respond to these challenges?	Rating	1 = no urgency; 10 = immediate urgency
5	How open is your organization to adopting new and unconventional solutions?	Rating	1 = no openness; 10 = fully open to new ideas
6	To what extent does your organization collaborate with external partners (e.g., other companies, startups, academia) on innovation projects?	Rating	1 = no collaboration; 10 = frequent collaboration with external partners

No.	Question	Response type	Scale
7	How focused is your organization on creating breakthrough innovations, as opposed to incremental improvements?	Rating	1 = no innovations at all; 3 = no focus on breakthroughs, just some incremental; 10 = major focus on breakthroughs
8	How often does your organization experiment with novel technologies or ideas outside of its core business?	Rating	1 = never; 10 = constant experimentation with novel business ideas
9	How open is your organization to take risks?	Rating	1 = never; 10 = highly open to take risks
10	Indicate how you believe an intermediary should allocate its resources and time across its three core functions (Facilitator, Connector, Integrator). <i>Use percentages [%] to reflect the importance of each function to your organization (e.g., Facilitator 30%, Connector 50%, Integrator 20%).</i>	Short answer	Percentage allocation across 3 functions
	Facilitator. %	Definition	Helps coordinate and streamline communication between stakeholders; ensures processes run smoothly, conflicts are addressed, and goals are aligned for collaborative success
	Connector. %	Definition	Focuses on building relationships between stakeholders; brings together diverse organizations, sectors, or industries, fostering partnerships and innovation
	Integrator. %	Definition	Unites diverse components such as ideas, technologies, and processes; aligns resources, teams, and stakeholders toward shared innovation goals; coordinates and leads projects
11	How much do you believe your organization would be leveraging intermediary's services working with Innovation Ecosystem?	Rating	1 = never; 5 = definitely