

The integration void: knowledge-integrated governance in digital place innovation

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Abstract

Purpose – This paper aims to examine how governance structures and actor dynamics shape knowledge integration in digital place innovation. Collaborative governance research emphasizes coordination and consensus-building, but less is known about how municipalities and private firms integrate heterogeneous knowledge systems when co-creating digital solutions for urban centers. Conceptualizing digital place innovation as an epistemic process of translation, this study introduces the concept of knowledge-integrated governance and asks: how do governance structures and actor dynamics, both between and within organizations, shape knowledge integration in digital place innovation?

Design/methodology/approach – This study uses a three-year embedded research design within a Swedish municipal organization, in which the author participated actively in digital innovation processes while maintaining sustained reflexive practice. Data collection includes in-depth interviews spanning municipal administration, elected officials and commercial and civic actors, alongside dialogic workshops. Episodes were selected through theoretical sampling, focusing on moments where collaboration became unsettled or ambiguous. Two condensed cases were constructed as analytically focused reconstructions. Analysis followed an abductive logic with Work-Integrated Learning (WIL) as the integrative lens, complemented by collaborative governance, institutional logics and institutional work.

Findings – Three interconnected patterns are identified: unclear mandates and dispersed responsibility, divergent understandings of digital place innovation both between and within organizations and fragmented translation work dependent on individual initiative. Together, these constitute an integration void, defined as the structural absence of mechanisms for bridging epistemic differences. Collaboration rarely collapses through conflict but through gradual drift, as promising initiatives fail to consolidate and learning remains unanchored. This study further identifies WIL as an infrastructural governance capability that can stabilize epistemic work beyond individual actors and temporary project cycles.

Originality/value – This paper contributes to place management research by reframing collaboration problems as epistemic rather than solely structural challenges, and by showing that governance failure manifests not primarily through conflict but through gradual drift when knowledge integration lacks institutional anchoring. It introduces the concept of knowledge-integrated governance as an analytical framework for place-based digital innovation. By repositioning WIL from an educational concept to an infrastructural governance capability, this study offers new theoretical tools for understanding and designing arrangements that support sustained epistemic negotiation across organizational boundaries.

Keywords Knowledge integration, Collaborative governance, Digital place innovation, Epistemic boundaries, Municipal-private collaboration

Paper type Research paper

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1. Introduction

Questions of how urban places are governed and developed have become central to place management research across many regions. Public–private governance arrangements have long coordinated investment and decision-making in urban centers (Parker *et al.*, 2017), and digitalization has substantially broadened the arenas in which such coordination unfolds. Municipalities and private actors now jointly develop digital infrastructures, platforms and services that shape everyday experiences of place (Eneqvist, 2024). These initiatives require sustained collaboration across institutional and professional boundaries, and their success hinges on whether heterogeneous knowledge systems can be aligned and legitimized in practice (Caprotti *et al.*, 2022; Barns, 2020).

Such digital place innovation differs from traditional forms of place development in important ways. While urban design or event-based place branding leave visible traces in streetscapes and public spaces (Eronen, 2024), digital innovations are driven by continually evolving data, platforms and interfaces that demand ongoing cross-sector coordination. This creates distinct governance challenges: actors must not only coordinate tasks but integrate divergent understandings of what the problem is and how it should be solved. Epistemic tensions between public and private logics, over evidence, legitimate process and meaningful outcome, are well documented (Gong and Yang, 2025; Laihonon and Kokko, 2023), yet how such tensions play out within municipal organizations, not only between sectors, has received considerably less attention.

Research on collaborative governance has deepened our understanding of how cross-sector partnerships can be structured (Ansell and Gash, 2008; Emerson *et al.*, 2012; Klijn and Koppenjan, 2016), but how knowledge is integrated when municipalities and private firms co-create digital solutions for urban centers remains underexplored (Kwon *et al.*, 2024; Maione *et al.*, 2024). In practice, many promising digital place initiatives stall not because of technical failure, but because the epistemic foundations of collaboration remain fragile and institutionally unsupported. To address the gap, this study examines how governance structures and actor dynamics shape knowledge integration in digital place innovation, drawing on an embedded research design within a Swedish municipal organization over three years. Conceptualizing digital collaboration as an epistemic process of translation, in which disparate ways of knowing must be aligned to enable collective action, the study introduces the concept of knowledge-integrated governance and extends Work-Integrated Learning (WIL) theory from educational contexts to cross-sector urban governance. The central research question is: How do governance structures and actor dynamics, both between and within municipal and private organizations, shape the integration of knowledge in digital place innovation?

The paper proceeds as follows. Section 2 develops the theoretical framework. Section 3 outlines the methodology. Section 4 presents the empirical findings across three cross-cutting patterns. Section 5 discusses implications for theory, governance and practice and Section 6 addresses limitations and future research directions.

2. Theoretical framework

Cross-sector digital innovation initiatives represent inherently complex collaborative arrangements that transcend organizational boundaries, bringing together actors from public, private and third-sector domains (Klijn and Koppenjan, 2016). Yet understanding such collaborations in city-center development requires more than mapping their formal architecture; it demands attention to the knowledge processes through which collaboration becomes possible. A WIL perspective therefore serves as the integrative analytic lens for this study, extended here beyond its traditional focus on higher education and workplace learning

(Sunnemark *et al.*, 2024) to encompass knowledge processes across organizational and professional boundaries in urban governance. Dominant models of collaborative governance typically emphasize coordination, consensus-building or network design (Vignieri, 2019; Errichiello and Micera, 2021; Zhao *et al.*, 2024). A WIL perspective reframes the issue by foregrounding the epistemic conditions under which collaboration becomes possible in the first place. Knowledge integration emerges as the central challenge in digital innovation governance, operating not only between municipalities and private firms but also within municipal organizations where employees bring diverse professional backgrounds and orientations toward collaboration. Through this lens, existing theories of collaborative governance, institutional logics and institutional work can be revisited and synthesized. The following subsections develop each of these theoretical strands in turn.

2.1 WIL as an epistemic lens

WIL has emerged as a field of inquiry concerned with how knowledge is developed, shared and transformed across different practice contexts. Originally conceived within vocational and higher education to address the integration of academic and workplace learning (Billett, 2009), WIL scholarship now recognizes that knowledge creation occurs through participation in diverse social practices, not solely within formal educational settings (Tynjälä, 2008). At its core, WIL theory challenges the conventional separation between “theoretical” and “practical” knowledge, treating these instead as mutually constitutive dimensions of knowing that develop through engagement in authentic activity contexts (Billett and Choy, 2013). Knowledge appears not as a discrete entity to be transferred between contexts but as something that emerges through participation in situated practices and is continuously reconstructed as actors move across different domains (Akkerman and Bakker, 2011).

For this study, WIL is articulated along three dimensions. First, as a philosophy, it recognizes that advanced knowledge is generated across society, not only within academia. Second, as a pedagogical approach, it emphasizes that theoretical and practical knowledge are equally important and mutually dependent, thereby challenging hierarchies that privilege certain forms of knowing over others (Sunnemark *et al.*, 2024). Third, as a research field, WIL examines learning processes that traverse organizational boundaries, exploring how different communities of practice negotiate meaning and integrate heterogeneous knowledge systems (Billett, 2014; Choy and Sappa, 2016). Together, these dimensions provide the conceptual foundation for analyzing how knowledge is mobilized and contested in cross-sector collaboration.

Central to WIL theory is the recognition that different practice settings generate distinct forms of knowledge. Billett (2020) distinguishes between procedural knowledge (knowing how), conceptual knowledge (knowing that) and dispositional knowledge (knowing when and why to act). These knowledge forms are deeply embedded in the material, social and cultural conditions of specific work contexts. What counts as valid knowledge, how it is demonstrated and who is authorized to contribute to its development vary significantly across organizational and professional settings, variations that become particularly consequential in cross-sector collaboration.

Consider the epistemic cultures at play. Public-sector organizations typically develop knowledge through regulatory frameworks, democratic deliberation and place-based consultation processes. Private firms generate knowledge through market feedback, iterative experimentation and competitive positioning. Third-sector actors cultivate knowledge through community engagement, advocacy work and lived experience (Akkerman and Bakker, 2011). Each sector thus operates within distinct epistemic cultures: shared ways of

knowing, validating claims and defining problems. When these cultures encounter one another in collaborative settings, the resulting tensions are not merely organizational but fundamentally epistemic.

The integration of such heterogeneous knowledge systems poses what [Carlile \(2004\)](#) terms a “knowledge boundary problem.” At syntactic boundaries, knowledge integration requires establishing common lexicons and information-sharing protocols. At semantic boundaries, actors must negotiate different interpretations and meanings attached to shared concepts. At pragmatic boundaries, knowledge integration demands the transformation of existing practices and the creation of new joint understandings. Critically, crossing these boundaries is not simply a matter of communication; it requires deliberate boundary work, the creation of boundary objects, translation practices and negotiation spaces that enable actors to compare, connect and potentially transform their respective knowledge. In this way, Carlile’s framework specifies the mechanisms through which epistemic integration either succeeds or fails.

While WIL scholarship has traditionally focused on individual learning trajectories between educational institutions and workplaces, recent work has begun to explore how WIL principles apply to organizational learning and interorganizational knowledge processes ([Billett and Choy, 2013](#); [Harteis and Billett, 2013](#)). Organizations themselves function as learning environments where employees from different professional backgrounds must integrate their knowledge to accomplish collective goals ([Tynjälä, 2013](#)). Knowledge integration challenges do not only occur between organizations; they also unfold within them. As [Fuller and Unwin \(2004\)](#) demonstrate, workplaces can be characterized as either “expansive” or “restrictive” learning environments depending on how they afford access to diverse forms of knowledge and support boundary-crossing activities. Municipal organizations, with their multiple departments, professional jurisdictions and competing mandates, exemplify contexts where internal knowledge boundaries can be as significant as external ones.

Internal heterogeneity becomes particularly salient in digital innovation initiatives. Technical specialists, urban planners, economic development officers and democratic representatives must collaborate across professional boundaries within the same municipal organization. Each professional group brings distinct epistemic orientations: different understandings of what digital place innovation should achieve, how success should be measured and what evidence counts as valid ([Nicolini et al., 2012](#)). These differences can manifest as conflicts over project priorities, resource allocation and implementation strategies, conflicts that are not solely interorganizational but fundamentally epistemic. Likewise, research on serious leisure demonstrates how long-term, self-directed engagement in demanding activities generates distinctive learning trajectories and identity work that often cut across formal institutional boundaries ([Lind et al., 2025](#)), further underscoring the multiplicity of knowledge sources that actors bring to collaborative settings.

[Piper et al. \(2023\)](#) argued that effective knowledge integration in WIL contexts requires addressing “theory-practice gaps” across four interrelated dimensions. The spatial dimension concerns the physical and geographical separation between sites of knowledge production; in municipal-private collaboration, spatial gaps include not only distances between organizational offices but also the positioning of digital technologies in relation to everyday place-based practices. The institutional dimension refers to the formal rules, authority structures and regulatory frameworks that govern knowledge validation and decision-making authority. The epistemological dimension addresses fundamental differences in what counts as legitimate knowledge and how claims are justified across professional and organizational cultures. The pedagogical dimension concerns the practices, tools and relationships through which knowledge is made accessible, shared and integrated. Taken together, these dimensions reveal that knowledge integration failures often stem from multiple, compounding gaps rather than any single source of friction.

Addressing these gaps requires more than structural coordination or consensus-building. It demands the creation of what [Billett \(2002\)](#) called “workplace pedagogies”: intentional arrangements that guide participation, provide access to diverse knowledge sources and support the development of integrative capacities. In cross-sector digital innovation, such pedagogies might include co-design workshops, shared experimentation spaces, cross-organizational working groups and reflexive evaluation practices that make different knowledge systems visible and create opportunities for their comparison and negotiation. These arrangements constitute the practical infrastructure through which epistemic integration becomes possible.

The extension of WIL theory from educational contexts to cross-sector urban governance is justified by the conceptual parallels between these domains. Just as students must learn to integrate academic knowledge with workplace practices, actors in municipal–private collaboration must learn to integrate sectoral knowledge systems to accomplish joint goals. Just as educational institutions must create pedagogical arrangements that support such integration, governance structures must establish institutional conditions that enable epistemic negotiation across organizational boundaries. And just as failures in educational integration often stem from inadequate bridging mechanisms rather than deficiencies in individual knowledge, failures in collaborative governance often reflect the absence of structures that support ongoing knowledge work across boundaries ([Akkerman and Bakker, 2011](#)).

In all, a WIL perspective redirects analytical attention from collaboration as a problem of coordination or consensus to collaboration as an ongoing process of knowledge integration. The questions that emerge concern how different knowledge systems are made visible in collaborative settings, how actors negotiate meaning across epistemic boundaries and how governance arrangements either enable or constrain the translation work necessary for joint action. What remains to be explored is how these dynamics operate when multiple sectors engage in digital place innovation and what implications arise for governance design.

2.2 Knowledge integration in cross-sector collaboration

The actors involved in cross-sector collaboration bring fundamentally different knowledge systems to the table. Public actors contribute insights into democratic processes, regulatory frameworks and place-based needs, reflecting their statutory responsibilities within devolved, place-based governance ([Wade and Galpin, 2025](#)). Private actors offer technical expertise, market knowledge and implementation capacity, reflecting their central role in operational delivery and investment within place management partnerships ([Coca-Stefaniak et al., 2009](#)). Third-sector organizations add community-based insights and advocacy experience, bringing locally embedded knowledge and participatory perspectives that strengthen place legitimacy and inclusion ([Ntounis and Kavaratzis, 2017](#)). Each contribution is shaped by sector-specific epistemic traditions that govern what counts as valid evidence and appropriate action.

Challenges of knowledge integration do not emerge solely between sectors; they also arise within them. Municipal organizations embody multiple professional cultures and administrative jurisdictions that interpret collaboration and innovation through divergent cognitive frames. As [Klijn and Koppenjan \(2016\)](#) argued, such internal fragmentation often produces governance deficits where coordination mechanisms fail to link knowledge across departmental or professional boundaries. In the context of digital place innovation, competing interpretations emerge of what innovation should achieve, whether efficiency, participation, or symbolic coherence and how it should proceed. Many familiar governance challenges can therefore be reframed as failures of knowledge integration: structural deficits manifest as inadequate knowledge-sharing arrangements; logic conflicts emerge as epistemological

clashes; coordination breakdowns signal the absence of translation mechanisms. Successful cross-sector digital governance accordingly requires what might be termed knowledge-integrated governance: arrangements that explicitly address the integration of diverse sectoral knowledge systems.

Collaborative governance theory gains new analytical depth when interpreted through a WIL perspective. [Ansell and Gash's \(2008\)](#) emphasis on formal, consensus-oriented and deliberative processes can be understood not only as mechanisms for joint decision-making but as structured opportunities for integrating heterogeneous knowledge. Likewise, the institutional arrangements highlighted by [Emerson et al. \(2012\)](#) (legal frameworks, funding models and coordination structures) can be seen as conditions that either enable or constrain the translation and alignment of sector-specific knowledge systems. In this manner, existing governance theory is not displaced but enriched by attending to its epistemic dimensions.

Network governance theory ([Provan and Kenis, 2008](#)) offers additional insight. Its three models, lead organization, network administrative organization and shared governance, can be interpreted as representing different modes of knowledge integration: centralized knowledge management, specialized knowledge brokering, or distributed knowledge sharing across actors. When viewed through a WIL lens, the well-documented “governance deficits” in cross-sector collaborations ([Klijn and Koppenjan, 2016](#)) appear not merely as institutional voids but as absences of mechanisms that support the translation, negotiation and fusion of knowledge across organizational and professional boundaries.

The effectiveness of collaborative governance thus depends not solely on structural coordination or stakeholder alignment but on the capacity of governance arrangements to create, sustain and adapt spaces of knowledge interaction, spaces where differing epistemologies can be made visible, negotiated and potentially integrated. In digital place innovation contexts, these spaces are especially consequential because the technologies involved are not merely technical tools but sociotechnical artifacts that reshape everyday practices, responsibilities and power relations ([Voorwinden, 2021](#)). How such artifacts are designed, implemented and governed is therefore inseparable from questions of whose knowledge counts.

Institutional logics provide actors with historically rooted patterns of reasoning that define what counts as valid knowledge, legitimate decision-making and desirable outcomes ([Thornton and Ocasio, 1999](#); [Thornton et al., 2012](#)). In municipal–private digital innovation, these logics take the form of sector-specific knowledge systems. Tensions are therefore not only conflicts of interest but epistemological disagreements: disputes over what counts as persuasive evidence, legitimate process or meaningful outcome. Research on hybrid organizations shows that actors can sometimes hold such incompatible logics in productive tension rather than resolving them prematurely ([Gümüşay et al., 2020](#)). The analysis reveals knowledge multiplicity both between organizations and within the municipality itself, where professional groups orient differently toward collaboration and innovation.

Collaboration challenges in digital place innovation are accordingly best understood not as failures of coordination but as breakdowns in epistemological translation: the capacity to make heterogeneous knowledge systems intelligible to one another in ways that allow actors to act jointly. Managing collaboration requires not harmonizing differences but constructing institutional arrangements that support the ongoing negotiation of meaning across boundaries. How such epistemic negotiations are performed in practice, and how they become stabilized within collaborative arrangements, is the focus of the following section.

2.3 Towards a concept of knowledge-integrated governance

The framework developed here conceptualizes cross-sector digital place innovation as fundamentally a problem of knowledge integration. In such collaborations, actors are not

only required to coordinate organizational resources and align strategic objectives; they must also negotiate, translate and sometimes reconfigure the different knowledge systems through which they understand problems and define appropriate action. The term “knowledge-integrated governance” emphasizes that governance in digital place innovation is not solely administrative or structural but epistemic. Collaboration depends on the capacity to create institutional conditions that enable heterogeneous knowledge to be shared, compared and potentially fused into workable joint understandings.

Knowledge-integrated governance rests on three interwoven dimensions. The first concerns the structural conditions under which collaboration unfolds. Formal arrangements, authority relations, funding structures and coordination mechanisms shape whose knowledge is recognized as legitimate, how decisions are justified and what forms of disagreement are considered acceptable. These structures operate not only at the interorganizational level but also within municipal organizations, where administrative hierarchies, mandates and professional jurisdictions influence how different forms of knowledge are mobilized and defended (cf. [Klijn and Koppenjan, 2016](#)).

The second dimension involves the epistemological dynamics that arise when sector-specific knowledge systems encounter one another. Conflicts emerge not primarily over goals but over method: how certainty is established, whose voices validate a claim and what timescales render evidence meaningful (cf. [Thornton et al., 2012](#)). These tensions are rooted in institutional histories that have produced divergent ways of reasoning about place, technology and collective action. Such differences also appear within municipal organizations themselves, where professionals from planning, IT, culture and economic development may draw on divergent interpretive repertoires, resulting in internal variation in how digital place innovation is understood and enacted.

The third dimension concerns the practical and relational work required to integrate knowledge across these boundaries. Such work involves establishing shared vocabularies, mediating disagreements over evidence or problem framing, stabilizing collaborative relationships and building trust that allows actors to remain engaged when conflicts arise. This labor aligns closely with what institutional work scholars describe as the ongoing effort of creating and maintaining shared institutional orders ([Lawrence and Suddaby, 2006](#); [Zietsma and Lawrence, 2010](#)). Failures of institutional maintenance often signal the erosion of these integration processes rather than deficiencies in formal arrangements ([Lawrence et al., 2013](#)). Without such work, formal governance arrangements remain fragile, producing collaboration in name but not in practice.

These three dimensions are mutually dependent. Structural arrangements that lack epistemic translation practices risk becoming empty procedural shells. Epistemic negotiation without structural support lacks durability and institutional anchoring. Integration work without legitimacy remains peripheral and easily undone when tensions escalate. Failures in digital place innovation can therefore be understood as breakdowns in the institutional conditions required for knowledge integration to occur (cf. [Klijn and Koppenjan, 2016](#)). This interdependence underscores why isolated interventions, whether structural reforms, dialogue initiatives or relationship-building efforts, rarely suffice on their own.

In framing municipal–private digital innovation as a question of knowledge-integrated governance, this study contributes a conceptual perspective that foregrounds knowledge integration as the core generative process in collaborative place management. The empirical investigation that follows examines how these dynamics unfold in practice within a Swedish municipal context.

3. Methodology

The study formed part of a three-year embedded research program established to promote sustained collaboration between researchers and other organizations in the private, public and nonprofit sectors. Within this framework, the author was formally employed part-time in a municipal organization in western Sweden. Such an institutional arrangement created conditions of embeddedness, in the sense described by [Vindrola-Padros et al. \(2017\)](#), where the researcher is situated within the host institution and engaged in its ongoing practices rather than observing them from a distance.

In this study, embeddedness did not primarily manifest as passive observation, but as active participation in collaborative digital innovation work. During the project period, the author contributed to the initiation and development of several digital innovation initiatives involving municipal departments, local businesses and civil society actors. The author took part in steering discussions, design workshops and implementation processes, and in some cases acted as a facilitator or project initiator. Following [Vindrola-Padros et al. \(2017\)](#), continuous reflexive practices were incorporated to acknowledge and interrogate this dual role, allowing participation and critical and distance to be held in productive tension.

The author's embedded position was therefore not an incidental contextual detail, but a central epistemic feature of the research design. Proximity to organizational processes afforded access to informal conversations, internal documents and ongoing decision-making that had not been available to an external researcher, yet this same proximity inevitably shaped which episodes became visible and analytically salient, and how participants positioned themselves in relation to the researcher. Actors who knew the author in an operational capacity may have been more candid in some respects, and more guarded in others. These conditions were managed through sustained reflexive practice, including field notes and analytical memos that interrogated the author's own assumptions and interpretive moves, but they cannot be fully neutralized and should be recognized as shaping the knowledge claims advanced in this paper.

3.1 Data collection

The organizational arrangement for this study enabled extended and sustained presence within the municipal environment, facilitating access to everyday practices, organizational documents, informal conversations and ongoing project work. The empirical data consist of in-depth interviews and dialogic workshops conducted between 2023 and 2025, generating a rich and heterogeneous body of qualitative material, including transcripts, field notes and reflexive memos.

In line with recent developments in qualitative research methodology that emphasize interpretive integration across data sources and the crafting of analytically saturated narratives ([Lim, 2025](#)), the analysis employed a condensed case strategy. This approach entails distilling complex empirical material into contextually rich yet focused narrative representations that capture the epistemic tensions and interactional dynamics observed across the broader data set. Rather than functioning as isolated cases, these condensed cases operate as interpretive devices that illuminate recurring patterns of meaning-making, boundary negotiation and institutional translation within municipal digital innovation processes. The condensed cases thus serve both as illustrative vignettes and as analytic syntheses, linking individual experiences and organizational events to the theoretical framework of knowledge-integrated governance.

Methodologically, the study can also be understood as an embedded case design ([Yin, 2014](#)), in which the broader case of municipal digital place innovation constitutes the primary unit of analysis, while the condensed cases function as analytically constructed, nested units within this case. This framing clarifies how the analysis moves between detailed

examination of specific episodes and interpretation of broader governance processes, without treating the episodes as independent cases.

Data collection targeted actors occupying different positions within and around the municipal organization, spanning municipal administration, elected officials and commercial and civic domains, as well as dialogic workshops bringing together employees, municipal heads, entrepreneurs, contracted suppliers and elected officials. The workshops complemented the interviews by revealing how meanings and priorities were negotiated collectively rather than individually articulated. To protect participant anonymity, organizational roles and titles have been generalized throughout the analysis. Given the small organizational scale of the case, direct positional labels have been replaced with broader functional descriptions. An overview of data sources is presented in [Table 1](#).

3.2 Data analysis

The analytical process combined inductive pattern identification with theoretically informed interpretation, following an abductive research logic ([Timmermans and Tavory, 2012](#)) in which empirical engagement and conceptual development were iteratively brought into dialogue. This nested structure informed the abductive analysis by allowing movement between episode-level interpretation and broader theoretical abstraction. The empirical material was first read iteratively and comparatively to identify recurring tensions, practices and moments in which collaborative arrangements appeared unsettled or ambiguous. This initial stage yielded a set of empirical categories grounded in the actors' own accounts of digital place innovation and their experiences of working across organizational and professional boundaries. To address the research question, how governance structures and actor dynamics shape the integration of knowledge in digital place innovation, the analysis drew selectively from a broader corpus of empirical material generated across the multiactor collaboration initiative. While the wider data set contains a range of activities, interactions and organizational documents, the episodes examined in this article were chosen through theoretical sampling. Specifically, the analysis focused on situations in which collaboration became unsettled or where the organization of joint work was questioned, negotiated, or appeared ambiguous. Such episodes proved analytically productive because they rendered practices of knowledge negotiation visible. Rather than representing exceptions, these moments functioned as empirical intensifications. Instances where underlying assumptions, professional orientations and institutional arrangements surfaced with clarity. The selection was therefore based not on statistical representativeness but on interpretive relevance for understanding the conditions under which knowledge integration is attempted in digital place innovation. A small set of follow-up interviews conducted in late autumn 2025 served to elaborate and refine preliminary interpretations that emerged during the initial stages of analysis.

WIL served as the central interpretive lens and oriented the analysis toward how different forms of knowledge were produced, negotiated and integrated across interorganizational and intra-organizational settings. Concepts from collaborative governance, institutional logics and institutional work informed the interpretation by directing attention to the structural arrangements, epistemic orientations and relational practices that shaped how collaboration unfolded. In this manner, the theoretical framework provided both analytical focus and conceptual vocabulary for interpreting the empirical patterns, while remaining attentive to the study's dual concern with interorganizational tensions and intra-organizational variation. The analysis proceeded abductively, moving back and forth between empirical material and theoretical refinement. This iterative movement ensured that the theoretical framework was not imposed on the data but developed in dialogue with it allowing the study to capture both

Table 1. Data sources

Id	Role/position	Method
A A2023-12-05 A2023-12-19 AA2023-12-05	Municipal business development office; BDO (two employees), and a municipal development officer, (one employee)	Group interviews
B B2024-08-26 B2025-09-09	Municipal manager in economic development (role change during research period)	Interviews
C C2025-10-23 C2025-11-10 C2024-08-27 C2024-08-27	Municipal development officer, role change during research period	Interviews, mail correspondence
D D2023-10-10 D2025-09-09	Municipal project managers (two employees) and a municipal GIS-engineer, (one employee)	Interviews Observations
E E2025-05-13 EM2023-11-07 E2024-12-13	Municipal BDO officer (two employees)	Interviews Observations Mail correspondence
F F2025-05-08	Department head (municipal administration)	Interview
G G2025-03-20 G2024-10-29	Senior municipal communications officer	Interviews
H H2025-09-02	Office manager	Interview
I I2024-03-26	Senior municipal leader	Interview
J J J2025-09-24	Senior municipal managers across planning, geospatial services, streets and parking, environmental services, building permits and operational support (six employees)	Workshop dialogues
K K2025-06-17	Entrepreneur (digital innovation collaboration), (one consultant)	Interview Collaboration in a digital project with researchers
L L2023-12-19	Entrepreneur (digital innovation collaboration), (1 consultant)	Interview Collaboration in a digital project with researchers
M M2024-09-18	Business development manager (one consultant)	Interview Collaboration in a digital project with researchers
N N2025-08-19 – N2025-11-25 NJ2024-10-30 NP2024-10-30	Municipal digital developer (one employee), GIS engineer (one employee), Elected officials (two politicians)	Interviews (case study) workshop collaboration Mail correspondence

(continued)

Table 1. Continued

Id	Role/position	Method
O O2025-09-09 O2025-03-20	Senior manager, external place management organization (one consultant)	Interviews Mail correspondence
P P2025-09-11	External consultant (municipal advisory experience) (one consultant)	Workshop dialogue
Q Q2025-11-06 QA2025-11-06 Q2025-10-12	Municipal digital developer (one employee); BDO (one employee)	Workshop dialogue
R R:2025-11-06	Event coordinator private actor (one consultant), BDO (one employee)	Meeting regarding virtual reality films and popular culture Mail correspondence Meeting external supplier
S S:2024-04-10	Municipal development officer (one employee); business developer and technology provider (one consultant)	Meeting external supplier
T T2023-10-10 T2024-01-24 T2024-02-08 T2024-11-03	Employee from the place management organization (one consultant); BDO (two employees); municipal development officer (one employee); experts involved in the design and maintenance of city center performance index (two consultants); elected officials (one politician)	<i>Condensed case</i> Several sessions/meetings Field notes A
U U2023-11-24 U2024-02-13 U2024-04-023D U2024-09-10S U2024-11-04V U2025-02-25 UJB2024-10-18	Sessions: 1. A presentation of 2023 year's composite city center performance index, open invitation. 2. Index sessions. 3. Cross-unit translation sessions. 4. Governance/mandate negotiation sessions Attendees session 1: Participants from the local business community, including property owners, shop owners, restaurant owners and other commercial actors Attendees sessions 2–4: Municipal senior managers, Department of Culture and Leisure (two employees); Municipal manager from the leisure office (one employee); Communications officer at the municipal department (one employee); Manager from the Place Management Organization (one employee); BDO (three employees); Municipal GIS engineer (one employee); senior municipal communications officer (one employee); municipal digital officer (three employees); senior municipal leader (one employee); elected officials (two politicians)	<i>Condensed case</i> Several sessions/meetings Interviews Observations Mail correspondences Field notes B
V V2023-12-19 V2024-04-02 V2024-09-03 V2025-04-16	Municipal BDO officers, (four employees); senior manager, place management organization (one consultant); municipal development officer (one employee); consultants for visitor counting (two consultants); a municipal project leader (one employee); senior manager of the DMO (one consultant); entrepreneurs (digital innovation collaboration) (two consultants); business development manager (one consultant)	<i>Condensed case</i> Several sessions/meetings Interviews Observations Mail correspondences Field notes C

the situated character of collaboration practices and the broader institutional conditions under which knowledge integration is attempted and enacted.

3.3 *Ethical considerations*

The embedded design of this study raises ethical considerations that warrant acknowledgment. The author's dual position as researcher and part-time employee within the studied organization created conditions in which participants may have experienced implicit pressure to contribute. To mitigate this, participation in interviews and workshops was voluntary, and participants were informed that the research was conducted independently of operational responsibilities. The study was conducted within a formally constituted externally funded research collaboration, a structure that ensured the host organization entered the partnership with full awareness of its dual character as both a site of development work and a subject of academic inquiry.

4. Knowledge integration in practice: mandates, logics and translation

The empirical material comprises interviews, case episodes and internal project documentation from municipal-private collaborations in Trollhättan. Episodes were selected because they concentrated decision points, coordination frictions and disagreements over value and purpose in digital place innovation. Analysis proceeded abductively, iterating between theory-informed codes and the data to surface three cross-cutting patterns:

- (1) unclear mandates and dispersed responsibility;
- (2) divergent understandings of what digital place innovation should accomplish (between and within organizations); and
- (3) fragmented, ad hoc translation and integration work.

What follows reports these patterns with dated quotations preserved.

4.1 *Unclear mandates and dispersed responsibility*

Across the collaboration, a recurring theme is the absence of clearly defined mandates, both between organizations and within the municipality itself. Although the city publicly articulates ambitions for digital innovation, responsibility for initiating, leading and maintaining such efforts remains diffuse. As an external consultant (P:2025-09-11) articulated, "the city, property owners, and the business community should jointly own an organization [...] with a clear mandate; otherwise, development risks becoming unanchored, without mandate, without governance, and without accountability." The problem is therefore not a lack of willingness to collaborate, but a governance void in which no party is structurally authorized to carry the work forward and in which no shared understanding exists of what forms of knowledge should guide that work.

Internally, this void is compounded by fragmented working cultures and legacy organizational behavior. A municipal manager in economic development (E:2024-12-13) describes a longstanding "culture where all employees have made their own plans and worked in separate tracks," which persists even under new policy agendas calling for cross-sector coordination. This fragmentation means that collaboration depends less on institutionalized processes and more on interpersonal negotiation. It is not only a procedural fragmentation but an epistemic one, where units rely on different professional logics, value different kinds of evidence and interpret problems through different knowledge traditions. As a municipal development officer (B:2025-09-09) puts it, progress requires "to build relationships and find ways forward, even when it is unclear who actually has the authority to say yes or no."

This ambiguity is visible in routine operational work regarding digital data. In discussion around the municipality's 3D data infrastructure, the municipal digital developer (Q:2025-11-06) emphasized that the municipality already "sits on so much data that could support shared problem-solving to other sections, but that capacity is not visible across units." The issue is not technical capacity but the absence of a mandate to activate it. Different units also hold different views on what counts as relevant, legitimate or actionable data, which further inhibits shared decision-making. The municipal development staff within economic development similarly noted that although spatial and visitor-related inquiries repeatedly reached her unit, "we can't answer, because no one has ownership of the data and how this should work" (Q:2025-11-06). In practice, knowledge remains suspended between units, waiting for someone to claim the right to act.

The mandate vacuum extends beyond questions of authority to encompass the very infrastructure through which digital place initiatives are developed. Observations from the research period revealed a recurring pattern in which digital services were procured from external suppliers without securing municipal ownership of the underlying data. In one case, a gamified visitor application deployed in a central public space was entirely dependent on an external consultant for both operation and data access. The municipality marketed the service as part of its place offering, yet possessed no control over user analytics, engagement patterns or content. As one municipal officer observed during an internal discussion, "the day we stop paying the consultant, everything disappears." The remark captures a deeper governance problem: digital place innovations are launched as municipal initiatives but remain structurally external, generating no durable organizational knowledge and leaving the municipality unable to learn from or build upon its own investments (Field notes, C). A similar fragmentation appeared in other initiatives where narrative content was stored with one organization while usage data was held by another, neither of which had a formal mandate to integrate or act upon the information (Field notes, C).

Condensed case: visitor data and the mandate problem

A prolonged struggle over how to count visitors in the city center illustrates the mandate problem clearly. For several years, actors across the local ecosystem have requested reliable visitor data: the regional destination management organization for reporting event outcomes and tourism flows, the place management company for retail and place marketing work and several municipal departments for evaluating cultural events and public space interventions. Yet no unit assumed responsibility for procuring or maintaining such a system. An earlier sensor-based counter was eventually abandoned, and from 2023 to 2025 the issue moved between departments without becoming anchored.

Inside the municipality, both technical interest and experimental capacity existed. A project leader in community planning (D:2023-10-10) described ongoing sensor experiments for traffic flows and cycling routes, emphasizing the need for more "measurements and measuring points." These projects demonstrated feasibility but remained disconnected from any mandate for visitor analytics. When a meeting in April 2024 brought together a municipal neighborhood developer and a technology provider offering mobile network-based visitor counting, the discussion ended with plans for internal coordination, but no action followed. The neighborhood developer lacked procurement authority, and no unit coordinated a shared decision.

A resolution emerged only later, when a person in a municipal development role later moved to lead the place management organization and procured a solution through the place management organization's budget. A widely recognized need was therefore addressed outside the municipal hierarchy. Despite available technology and cross-sector interest, the

absence of a clear mandate meant that work remained fragmented and dependent on individual initiative rather than institutionalized governance.

This pattern recurred at points of transition and handover. A gaming-based digital heritage project developed through collaboration between master's students, municipal departments and local businesses generated shared enthusiasm, yet the question of long-term ownership remained unresolved. A municipal department manager (F:2025-05-08) reflected: "if we had intended this to also become something long-term, then we would have needed to have the organizational discussions from the start." Her observation illustrates how mandate ambiguity prevents the stabilization of knowledge over time, making promising initiatives dependent on temporary constellations of actors rather than institutionalized support.

From the perspective of WIL, these patterns reflect not just coordination difficulties but a failure of knowledge anchoring. Knowledge produced in collaborative experimentation remains contextually fragile because it is not institutionally claimed or structurally embedded. Instead of functioning as a shared governance arena, the collaboration surface becomes a transient knowledge corridor, where learning circulates informally and dissipates when individuals move or priorities shift. Seen through the framework of knowledge-integrated governance, the mandate problem is therefore epistemic as well as organizational: collaboration fails not because actors disagree, but because no structure exists that makes their knowledge mutually accountable, durable and actionable.

4.2 Divergent understandings of digital place innovation

The collaboration is characterized not only by organizational fragmentation but also by competing knowledge logics regarding what counts as progress, value and legitimate decision-making. These tensions are visible both between sectors and within the municipality, suggesting that disagreement is not merely strategic but epistemological.

On the private sector side, actors tend to emphasize technical feasibility, modular system design and operational speed. As the digital developer with a hybrid background (N:2025-08-19) explains, "My focus is to build a stable technical foundation" grounded in efficiency, maintainability and long-term scalability. His emphasis on modularity reflects an engineering rationality in which systems must be structured coherently before strategic ambitions can be delivered. Yet, he observes, "others prefer to talk about strategy and vision. Then we are not operating on the same level." This mismatch signals a temporal and epistemic disconnect. While the technical logic demands incremental build-up, the strategic logic demands conceptual projection into the future.

A contrasting stance emerges within the municipality itself, where a senior municipal IT/digital officer (V:2024-04-09) describes a position shaped by organizational capability and everyday constraints. Many municipal departments, he notes, lack internal capacity for project management, change leadership, or service design, making them ill-equipped to support the cultural and procedural transformation that digital innovation requires. Their way of knowing is grounded in lived organizational limits: before systems can be developed or visions pursued, the internal ability to absorb and operationalize change must be secured.

A further layer becomes visible in perspectives articulated by municipal leadership, where a public-value logic guides the evaluation of digital initiatives. As a senior municipal leader (I:2024-03-26) explains, "the municipality often wants to think in terms of broad benefits for the entire city," expressing a place-based orientation in which innovation is assessed through its contribution to collective benefit, equity of access and long-term urban development. This reflects democratic accountability, where decisions must be defensible across diverse constituencies and where symbolic coherence, legitimacy and distributive fairness carry as much weight as technical optimization.

From the perspective of a municipal department manager, digital place development is interpreted very differently by local businesses. As she observes, many firms approach the municipality as “a bag of money” rather than as a partner in a broader place-development mission (F:2025-05-08). Companies engage with digital place initiatives primarily as commercial opportunities, where the goal is to sell a product or service rather than coproduce public value. This reflects a deeper epistemic divergence: for the municipality, digital place development is a governance challenge involving coordination, accountability and collective outcomes; for businesses, it becomes a transactional arena tied to project-based returns.

Importantly, these divergent understandings also collide internally within the municipality. A municipal project manager (D:2025-09-09) describes how her unit sought internal codevelopment support: “we want your technical expertise,” while the IT/innovation unit responded with monitoring and constraining oversight, effectively acting as a gatekeeping function. Here, the conflict is not between public and private but between a doing-oriented implementation logic and a rule-anchored safeguarding logic. One seeks progress through iterative experimentation; the other seeks to prevent lock-in, liability, or deviation from standards. These divergent logics create the conditions under which translation work becomes both indispensable and structurally unsupported.

4.3 Fragmented and ad hoc translation work

If mandates define responsibility and knowledge logics define how actors reason, then the practice of collaboration depends on the relational work that makes these knowledge systems mutually intelligible. Across the empirical material, collaboration progresses only when individuals actively perform translation between logics, practices and expectations. This translation is not procedural but embodied in ongoing interactions. As one business development officer with an entrepreneurial background (EM:2024-10-15) explains, “in the private sector you cannot wait for the perfect process; you move, test, and adjust. When I work with the municipality, I often have to translate that pace and mindset so that things don’t get stuck before they even begin.” This comment illustrates how translation is enacted as real-time mediation between divergent temporalities, expectations and problem framings. Rather than resolving tension, individuals hold it productively in place, enabling action to continue despite incompatible knowledge logics.

Translation work is slow, often invisible and precariously dependent on individuals. A municipal development officer (C:2024-08-27) describes repeatedly trying “to stick together” across departmental divides, only to find that progress collapses when individuals leave or priorities shift. The absence of formalized integration roles means that translation occurs informally, relying on personal networks, tacit understanding and emotional labor. This aligns with research on institutional work, where stabilization of shared understandings depends on continuous microlevel negotiation. Even when coordination forums, steering groups or project frameworks exist, they do not guarantee shared understanding. As several respondents expressed, actors attend the same meetings but do not experience the same collaboration.

The absence of institutionalized translation mechanisms means that knowledge systems often remain invisible to one another until individuals actively create encounters across unit boundaries. During the research period, the author facilitated a meeting between staff from a unit responsible for digital infrastructure development and staff from a unit working on business development and visitor services. Both had been engaged in place-related digital work, yet neither had been aware of the other’s projects, data resources or operational priorities. When confronted with each other’s activities, participants responded with visible surprise: “So that’s how it works?” The moment illustrated how units had been operating

within parallel epistemic frameworks, each assuming that their own way of organizing digital place development was either unique or universally shared. The encounter made these differences momentarily visible and created an opening for potential collaboration. Yet it also underscored the fragility of such translation: the meeting occurred not because governance structures required it, but because an individual broker identified the gap and convened the actors. Without such intervention, the two units would have continued to work in isolation, “getting in each other’s way” as one participant put it during a subsequent internal discussion (Field notes A and B)

Condensed case: city center index sessions and city place branding

The city center index sessions, convened by the Business Development Office (BDO) in 2023 and 2024, brought together representatives from Culture, Planning, Economic Development, Communications, City Trollhättan and the official DMO. Because such city center indexes capture external perceptions among respondents with limited prior familiarity with Trollhättan, the indicators speak directly to the city’s broader place brand. In effect, the meetings gathered the actors who shape the city’s narrative infrastructure and regularly work with digital place-based innovation (U:2024-02-13). The fact that the BDO convened the session is analytically significant. Formally, responsibility for visitor communication lies with the DMO, not with the municipality’s business development unit. Yet the BDO had already begun to occupy this space *de facto* by launching its own mobile application, maintained through staff commitment but without formal mandate. This unilateral initiative reflects a particular knowledge logic: that existing actors are failing to provide effective messaging about the city. An employee from the BDO explicitly stated: “We’re not going to attract anyone [to the city center] if we market the place like a damn municipal square (A:2023-12-05). From this standpoint, intervening in the place brand is not overreach but necessary corrective. This logic clashes directly with another municipal unit’s view that the BDO routinely oversteps its remit, creates parallel communication channels and disregards established municipal strategies (G:2025-03-20; G:2024-10-29). The two units thus entered the meeting with incompatible epistemic premises about what place branding is, who controls it and how legitimacy is earned.

Within the sessions, these tensions became visible as translation challenges. Market research categories such as awareness and recommendation had to be connected to spatial planning tools, operational data flows and local development agendas. The conveners attempted to bridge vocabularies across municipal GIS, market analytics and place management, creating a temporary interpretive space. Yet the municipal communications director remained silent throughout, a silence interpreted as signaling both the narrative sensitivity of the place brand and the absence of an authorized lead for cross-unit knowledge integration. Several concrete suggestions emerged: joint workshops with landlords and retailers, triangulation with transaction data and integrating brand indicators into the municipal 3D map. But no unit was mandated to steward the data set, set rules for integration or resource follow-up analysis. As a result, a composite city center performance index functioned less as a governance instrument and more as a temporary conversational device. Once the meetings ended, actors reverted to their home logics, organizational boundaries and separate communication channels, leaving the interpretive work without institutional anchoring.

The episode illustrates the core argument of this section: effective place-based digital innovation depends on durable relational infrastructures for knowledge translation. In their absence, translation is performed *ad hoc* by individual brokers, and even well-intentioned cross-unit efforts remain fragile, contested and unable to stabilize shared meaning over time.

Seen through a WIL-informed lens, the episodes with the city center performance index demonstrate that relational knowledge translation is not an accessory to collaboration but its core infrastructure. It is in these cross-unit encounters that different knowledge systems become visible to one another. Not because actors seek consensus, but because their divergent assumptions, vocabularies and priorities are forced into contact. Translation in this sense is the work of making difference intelligible enough to coordinate action without erasing its epistemic origins. Because such work is neither formalized nor institutionally recognized, its durability depends almost entirely on individuals willing and able to bridge incompatible logics. When those individuals withdraw, when conflicts over mandate intensify or when organizational pressures increase, the translation space collapses. This is exactly what happened after the sessions: once the temporary interpretive arena dissolved, participants returned to separate reporting lines and competing versions of what the place brand is and should be.

The ongoing development of the municipality's 3D map provides an instructive counterexample. When the project began, the map was conceived as an internal efficiency tool for the planning and building department, oriented toward streamlining permit processes. Its epistemic frame was technical-bureaucratic: a system built for administrative use, not with or for external actors.

Over the course of the research project, the map became the focal point of a broader exploration of how digital place-based tools might create value beyond municipal workflows. Through workshops involving entrepreneurs, event organizers, consultants and property owners, the map was reframed as a potential multi-purpose infrastructure, from a planning instrument to a platform that could visualize visitor flows, support event logistics and provide public-facing information.

A pivotal moment occurred when the BDO was brought into direct dialogue with the team responsible for the 3D map (Q:2025-11-06). Given their previous unilateral initiatives, there were concerns that this meeting would reproduce earlier coordination problems. Instead, it became a rare instance where epistemic differences were productively held rather than overridden. During the discussion, the BDO realized that the 3D map's data could substantially enhance their own visitor-facing tools, including a locally developed mobile application, and recognized its potential value for the DMO and for municipal staff working on business establishment. At the same time, the map's developers gained insight into how their technical infrastructure could support broader place-based objectives. Rather than attempting to align logics, actors worked to "hold the difference" while identifying shared ground: the map could remain a technical system and simultaneously function as a public-facing interface for multiple user groups.

The reframing that took place, shifting the map's identity from "a technical platform" to "a shared resource for multiple publics," did not emerge from formal governance structures but from the interaction itself. It was a relational achievement: a moment in which divergent knowledge systems were made mutually intelligible long enough to imagine a joint future trajectory. In contrast to the city performance index-case, this meeting generated a durable reorientation. Not because consensus was reached, but because participants succeeded in negotiating meaning in real time.

5. Discussion and conclusions

The research question guiding this study concerned how knowledge processes shape collaboration in digital place innovation. The findings indicate that the main constraints arise from how actors construct, prioritize and legitimize knowledge within the innovation process. Governance is shaped by epistemological tensions between distinct knowledge

systems, and these tensions manifest both across sectors and within the municipal organization. Different departments mobilize divergent professional logics, evaluative criteria and epistemic orientations that shape how they interpret problems and legitimate action (Nicolini *et al.*, 2012). Consequently, the challenge is not only to negotiate interests or responsibilities, but to translate between different ways of knowing and valuing place.

5.1 *The integration void as a governance condition*

These conditions create what can be conceptualized as an integration void, defined as the structural absence of mechanisms capable of bridging epistemic differences in a stable and institutionally supported manner. The integration void cannot be reduced to weak coordination structures or misaligned incentives. Rather, it reflects a governance condition in which no organizational unit or actor is positioned, mandated or equipped to hold together the plurality of knowledge systems required for digital place innovation. This produces fragile implementation trajectories where progress depends heavily on individual initiative rather than institutionalized practice. This observation aligns with institutional work scholarship, which highlights that maintaining shared institutional orders requires continuous labor that is vulnerable when carried by individuals alone (Lawrence and Suddaby, 2006; Lawrence *et al.*, 2013).

Positioning these findings within existing place management research suggests an epistemological extension to dominant narratives. Much of the literature assumes that collaboration problems arise primarily from conflicting interests or resource asymmetries. The present study shows that these explanations overlook deeper tensions related to what actors regard as valuable knowledge, legitimate decision-making and meaningful outcomes. The challenge is therefore not only to negotiate goals, but to negotiate the knowledge systems that make those goals conceivable and actionable. The issue is not merely that actors have different kinds of knowledge, but that they operate with different assumptions about what qualifies as knowledge in the first place. This perspective contributes to research that understands place development as an ongoing negotiation of meaning, value and legitimacy (Ntounis and Kavaratzis, 2017). When such negotiation lacks institutional support, collaboration rarely collapses through conflict, but instead through gradual drift where promising initiatives fail to consolidate and where learning remains unanchored.

5.2 *Knowledge-integrated governance and the role of WIL*

The analysis therefore conceptualizes digital place innovation as a process of knowledge-integrated governance. Governance arrangements need to support the articulation and translation of diverse knowledge systems, and to hold these in productive tension rather than prematurely harmonizing them. Such an understanding shifts analytical attention away from alignment and towards the cultivation of organizational capacities for working constructively with epistemic plurality. Digital place innovation is, in this respect, not only a matter of technology, strategy or coordination but a matter of learning how to think together across institutional and professional boundaries.

Within this frame, the study highlights the role of WIL as a potential means of addressing the integration void. WIL practices create structured arenas where epistemic differences can be surfaced, discussed and integrated (Akkerman and Bakker, 2011). The empirical material also shows that several actors engage in digital place innovation beyond formal job descriptions, motivated by commitment to the city and its development. This resonates with research on serious leisure, which describes long-term, voluntary engagement in demanding activities that generate learning and identity formation (Lind *et al.*, 2025). Such engagement

brings both resilience and vulnerability: it provides energy and initiative but also risks discontinuity when individuals exit.

By viewing WIL as an infrastructural capability, the study identifies a governance mechanism that can stabilize collaborative processes beyond individual actors or temporary project cycles. Through this lens, WIL becomes a means of supporting the epistemic work required for digital place innovation. The findings therefore demonstrate that the key to advancing digital place innovation lies in strengthening the epistemic capacities of governance arrangements, creating institutional conditions where multiple knowledge systems can be integrated over time.

6. Implications

6.1 *Implications for research*

The analysis presented in this study offers several implications for scholarship on place-based development and digital place innovation. The findings indicate that existing frameworks for public–private collaboration can be complemented by a stronger emphasis on the epistemic dimensions of coordination. Much of the current place management literature explains collaboration problems through conflicting interests, resource asymmetries or structural fragmentation. The present study suggests that these explanations are only partial. These findings point to several implications for future research on place-based governance.

Future research should conceptualize governance as an epistemic process involving the production, circulation and integration of situated knowledge across organizational, sectoral and professional boundaries. This entails examining how different knowledge systems are articulated in collaborative arenas, how actors legitimize their claims and how institutional arrangements either support or constrain epistemic negotiation. Further research is also needed to explore how knowledge-integrated governance unfolds across different institutional contexts, including variation in governance traditions, market–state relations and administrative cultures. Comparative studies would help clarify whether the patterns identified in this study are context specific or more structurally recurrent. There is also value in adopting longitudinal designs to examine how mechanisms of knowledge integration stabilize or erode over time, and how shifts in organizational structures, political leadership or local economic conditions reshape collaborative infrastructures. Finally, more detailed empirical work is needed to understand the role of boundary-spanning professionals, intermediaries and translation-oriented facilitation practices in cross-sector innovation. Such research would deepen our understanding of how knowledge circulates across organizational interfaces and how integrative practices can be supported without becoming rigid or bureaucratic.

6.2 *Implications for governance and policy*

A second implication concerns the design of institutional infrastructures that support knowledge integration over time. Approaches to place development and smart city experimentation are often project based, producing short-term innovation without establishing mechanisms for institutional learning. The findings presented here indicate that successful governance requires more than additional steering documents, strategies or coordination forums. Instead, policy initiatives should prioritize the creation of shared learning arenas where epistemic differences can be surfaced, examined and translated into actionable understanding.

This may include creating cross-departmental facilitation roles with explicit responsibility for connecting technical, planning and place management functions, so that knowledge produced in one part of the organization does not remain isolated. It may also involve

formalizing routines for collaborative interpretation of data, for example, by integrating visitor analytics, spatial mapping and operational insights into recurring review sessions that bring together municipal officials, business representatives and place managers. Joint analytical environments can be developed in the form of shared digital platforms or colocated working sessions where different expertise is mobilized to examine the same material from multiple perspectives. Such arrangements would allow municipalities to move beyond *ad hoc* coordination and instead cultivate the organizational capacity to work relationally with diverse forms of knowledge as part of everyday governance.

6.3 Implications for practice

For practitioners engaged in digital place innovation and cross-sector collaboration, the findings underscore that coordination cannot be achieved solely through structural or procedural adjustments. Collaboration requires continuous epistemic work. Practitioners should therefore approach innovation not as a search for consensus, but as the cultivation of ongoing dialogue in which differences in expertise, professional orientation and institutional identity can be recognized and mobilized as productive resources.

Such practices may involve establishing recurring cross-sector workshops where municipal planners, business representatives and technical specialists analyze ongoing initiatives together, using the same data and visualizations to develop shared interpretations. They may also include the use of facilitation methods that make professional assumptions explicit, for example, by working with scenario mapping (Molinero-Parejo *et al.*, 2021), role-switching exercises or structured walk-alongs in the city center where different actors describe how they read and evaluate the urban environment (Salter *et al.*, 2009). Another practical approach is to integrate reflective checkpoints into project routines, allowing teams to revisit decisions, surface uncertainties and jointly interpret how new information should guide subsequent action. These kinds of arrangements enable practitioners to develop a more durable capacity for negotiating diverse knowledge claims and to maintain collaborative momentum even when organizational conditions shift.

Taken together, these implications point toward a necessary reorientation of place governance, away from the expectation of alignment and toward the deliberate cultivation of capacities for managing knowledge plurality. Digital place innovation is therefore not only a question of technological development or organizational arrangement, but a question of building the collective ability to think together across institutional and professional boundaries.

7. Limitations

While the depth of the empirical material generates insight into the relational and epistemic dynamics of cross-sector collaboration, the contextual specificity limits generalizability to other urban settings. The aim has been to use the case to develop analytical understanding that can inform future comparative work rather than to claim representativeness. The analysis also focuses primarily on formal organizational actors, including municipal officials, business representatives and intermediaries, leaving the perspectives of residents, community groups and informal networks outside the scope of investigation.

A more substantive limitation concerns the selection logic underlying the condensed cases. Episodes were chosen because they concentrated moments of friction, mandate ambiguity and epistemic conflict, conditions that rendered knowledge integration practices visible and analytically tractable. This selection principle likely amplifies the emphasis on barriers and breakdowns in the findings and may undervalue the mechanisms through which knowledge integration was, at least partially, achieved. The empirical material does include

an episode of productive knowledge negotiation, the reframing of the municipality's 3D mapping project from a technical-bureaucratic instrument to a shared multi-purpose infrastructure, which is discussed as a counterexample in Section 4. However, this and similar episodes of incremental progress were not afforded the same analytical weight as the conflict-laden cases. Future research would benefit from deliberately including episodes of successful epistemic negotiation alongside episodes of breakdown, allowing for a more symmetrical analysis of what enables and what constrains knowledge integration in digital place innovation.

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