

Ecosystem approach in public management: insights from the city of Espoo

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Abstract

Purpose – This article investigates the practical implementation of the ecosystem approach in different branches of public management within an urban context. It explores how ecosystem thinking is introduced, disseminated and applied in a local government organization.

Design/methodology/approach – We utilize a qualitative case study methodology, relying on official documents and expert interviews. Our study focuses on the city of Espoo, Finland, which has actively embraced ecosystem thinking as a fundamental framework for its organizational development for almost a decade.

Findings – The case of Espoo highlights elements that have not been commonly attributed to the ecosystem approach in the public sector. These elements include (1) the significance of complementary services, (2) the existence of both collaborative and competitive relationships among actors in public service ecosystems and (3) the utilization of digital platforms for resource orchestration. Our study also emphasizes the need for an incremental adoption of ecosystem thinking in organizational contexts to enable its successful implementation.

Originality/value – The study provides valuable insights into the introduction and dissemination of ecosystem thinking in public management. It also further develops previously developed hypotheses regarding public service ecosystems.

Keywords Public management, Ecosystem, Public service ecosystem, Platform, City government, Local government

Paper type Case study

Introduction

In recent decades, the field of public management has undergone a significant transformation, shifting its focus from internal to external relationships. One of the most influential developments spurring this change was the emergence of new public management (NPM) in the 1980s. NPM introduced features such as marketization, contracting out, corporatization and customer choice to public management. This represented a clear departure from the hierarchical thinking associated with traditional public administration (Rhodes, 2016; Krogh and Torfing, 2020). NPM was later challenged by such relationally and contextually oriented approaches as collaborative governance, network governance and public value management (Osborne *et al.*, 2022). They gave rise to a family of approaches sometimes referred as post-NPM or grouped under the umbrella of new public governance (NPG). The most notable feature of NPG is its emphasis on networks as a mode of governance, stakeholder collaboration and citizen participation (Rhodes, 2016).

The most recent trends adding to this continuum between business and community-oriented approaches in public management stem from contextual changes related to digitalization and technological development that have changed both organizations' internal



processes and relationships with their environment. This development first revolutionized business life, as seen in the emergence of business ecosystems and platform economy. Later, new technologies, platformization and ecosystem thinking started to penetrate into public sector as well. Examples of this include smart city governance (Ylipulli and Luusua, 2020), governance platforms (Ansell and Miura, 2020) and innovation ecosystems in the public sector (Carneiro *et al.*, 2023). It has been argued that the ecosystem approach better captures the complexities of public service delivery than NPM and conventional network governance associated with NPG, especially in terms of understanding value co-creation (Kinder *et al.*, 2022, 2021; Osborne *et al.*, 2022).

Despite efforts to integrate the ecosystem concept into public administration and management theory (Osborne *et al.*, 2022), discussions about the ecosystem approach have remained rather abstract. Its challenges to leadership (Kinder *et al.*, 2021) and multi-layered managerial issues (Osborne *et al.*, 2021) have been occasionally addressed, but its nature as a managerial approach is not well understood.

In this article, we discuss the practical implementation of ecosystem thinking in local public management. To delve deeper into the managerial processes, we rely on the case study methodology. Our focus is on local government in the tech-savvy Nordic welfare society, as it is an illustrative institution responsible for the provision of wide range of services.

Our research questions are as follows:

- RQ1. How has ecosystem thinking been introduced and disseminated in local government organization?
- RQ2. How is ecosystem thinking applied in different externally oriented branches of local public-sector management?

Next, we will discuss the theoretical foundations of ecosystem thinking, followed by the explanation of methodological underpinnings. After this, we will explore and discuss ecosystem thinking in the case of the city of Espoo. Lastly, we will summarize our findings and highlight their significance to the public management theory.

Ecosystem thinking

Roots in business, innovation and service ecosystems

The ecosystem concept was first adapted from biology to the business context by James Moore in the early 1990s. According to Moore (1993), companies form parts of co-evolving interconnected business ecosystems in which they work both cooperatively and competitively to satisfy customer needs and innovate. Initially, “ecosystem” was used simply as a metaphor to understand business networks, and these terms were often used interchangeably (e.g. Iansiti and Levien, 2004). Later, these concepts diverged. While business networks are seen as a group of firms that collaborate to capture value in a given industry, business ecosystems are commonly understood as larger systems comprised of networks (Aarikka-Steenroos and Ritala, 2017). The latter is a broader concept, including not only the producers, but also users and a variety of other actors such as complementors and competitors. It also includes institutions, policymakers, regulators, technologies, platforms and the overall cultural context within which the relevant actors operate (Aarikka-Steenroos and Ritala, 2017; Rinkinen and Harmaakorpi, 2019).

Moreover, while the concept of business networks emphasizes collaboration, the driving forces in ecosystems are both collaborative and competitive relationships (Gomes *et al.*, 2018; Möller *et al.*, 2020). Synergy gains achieved from producing complementary goods and services represent the collaborative nature of such ecosystems. They are, however, simultaneously marked by constant competition for overall leadership and niche dominance (West, 2014). Ecosystems, as a rule, have a focal company around which the relevant actors

center (Iansiti and Levien, 2004; Möller *et al.*, 2020). This focal company usually orchestrates resources, provides coordination mechanisms and sets standards in the ecosystem (Yablonsky, 2020).

A major turn in the business ecosystems discourse was the shift from value capture to value creation, which put innovation at the center of ecosystem thinking (Gomes *et al.*, 2018). One of the landmarks in this discussion was Adner's (2006) conceptualization of innovation ecosystem, which emphasizes intercompany collaboration in combining individual offerings into a customer-facing solution. While some scholars equate business and innovation ecosystems, the collaborative value creation process is often understood as the *differentia specifica* of innovation ecosystem. In a strategic sense, this process precedes the profit-oriented value capture associated with business ecosystems (Ritala *et al.*, 2013).

The central idea of innovation ecosystems is radical openness to collaboration and sharing, highlighting the importance of co-creation. This connects the innovation ecosystem concept with open innovation (Adner, 2006; Rinkinen and Harmaakorpi, 2019). Digital platforms often facilitate actors' collaborative actions in an attempt to utilize the capabilities and resources available within a given innovation ecosystem (e.g. Tiwana, 2014). Similarly to business ecosystems, innovation ecosystem may be led by a focal actor, which often is also the platform provider (Gomes *et al.*, 2018; Rinkinen and Harmaakorpi, 2019).

Another turn in this discourse took place in the 2010s when ecosystem thinking was introduced in the service science that centers around service-dominant (S-D) logic. It is based on the premise that economic actors co-create value through institutionally embedded resource integration, which implies that value creation is conditioned and enabled by its context (Vargo *et al.*, 2008). The idea of service ecosystem became understood as an institutionally embedded interactions between resource-integrating actors that co-create value through service exchanges (Akaka *et al.*, 2013). Following a widely held view of service ecosystem, it can be defined as "*relatively self-contained, self-adjusting system of resource-integrating actors connected by shared institutional arrangements and mutual value creation through service exchange*" (Vargo and Lusch, 2016, p. 161). The contribution of this perspective to ecosystem thinking is in its understanding of (1) value co-creation in multi-actor exchange systems, (2) the role of institutional arrangements – reflecting various rules, roles, norms and beliefs – that guide resource integration and service exchange and (3) its insights into how actors can influence and develop such complex service ecosystems (Vargo and Lusch, 2016).

In short, business ecosystems are typically seen as systems comprised of networks of diverse actors that capture value through both collaboration and competition and are often led by focal companies. The innovation ecosystem and service ecosystem concepts have extended and enriched this idea, redirecting the focus toward innovation and value co-creation (Adner, 2006; Ritala *et al.*, 2013; Gomes *et al.*, 2018) and institutionally embedded resource integration and service exchange (Vargo *et al.*, 2008; Akaka *et al.*, 2013). At a higher level of abstraction, concepts of ecosystem, open innovation and platform reflect a shift toward an external focus, highlighting greater openness, enabling interactions, and interaction-centric metrics in interorganizational relations (Altman and Tushman, 2017).

Ecosystem thinking in public management

Ecosystem thinking in the public sector is rooted in the idea of a business, innovation and service ecosystems, with a focus on collaborative value creation and resource integration within institutional environment. Given the inherent complexity of public policy, governance and services, the ecosystem concept has become particularly resonant in the public-sector context. It takes a processual and systemic approach to "*value creation where various participative and inter-organisational relationships are at play*" and "*value is shaped by the*

interplay between all of these dimensions and not least by the wider societal context and the values that underpin it” (Strokosch and Osborne, 2020, p. 436).

An ecosystem-based innovation policy diverges from traditional approaches by prioritizing the facilitative role of government over direct steering, and valuing cooperation with the civil society over simple triple-helix models (Perikangas *et al.*, 2023; Rinkinen and Harmaakorpi, 2019). According to Carneiro *et al.* (2023), ecosystem thinking offers public organizations a holistic way to understand system dynamics that mobilize actors and resources for the collaborative creation and implementation of public, social and service innovations generating public value. This requires support from the public sector actors, including tools, methods and initiatives of co-production (Perikangas *et al.*, 2023). This can include, for example, shared digital platforms that allow the scalability and continuity of the collaboration beyond individual projects (Perikangas *et al.*, 2023; Rinkinen and Harmaakorpi, 2019).

Public service ecosystems (PSEs) have become a widely researched application of ecosystem thinking in the public sector. The PSE concept is built on the idea of service ecosystems (Trischler *et al.*, 2023). It aims to provide a panoptic view of all the individuals and their experiences, network actors and their interchanging and multiple roles, technologies and institutional and societal rules and norms involved in the public value creation (Petrescu, 2019). Trischler *et al.* (2023) have argued that PSE provides a valuable analytical framework for understanding value co-creation at multiple analytical levels of aggregation – micro, meso and macro – in the context of public services. That said, others have noted that if the ecosystem concept is seen as all-encompassing, it may be too vague to bring added value to public management (Oh *et al.*, 2016).

Kinder *et al.* (2022, 2021) argue that the ecosystem approach captures the complexity of local services better than network governance. According to them, networks are top-down structures, whereas ecosystems are not under central control, but characterized by trust, mutual learning and the creation of collective consciousness (Kinder *et al.*, 2021). Carida *et al.* (2022) recognize that city governments can act as resource orchestrators in service ecosystems but also argue that this does not imply a leading role *per se*. This is in contrast with the notion of focal companies pursuing leading position in business and innovation ecosystem literature (Gomes, 2018).

Given that ecosystems have been proposed as a replacement for networks in the theoretical framework of public service management (Kinder *et al.*, 2022), it is worth noting that many of the features presented as defining characteristics of PSEs share notable similarities with the theorizations of governance networks. For instance, Krogh and Torfing (2020) argue that governance networks can be self-organized bottom-up structures. Moreover, the central role of trust (Rhodes, 2016), and the ability to foster individual and collective learning (Newig *et al.*, 2010), have been commonly associated with networks. The idea that various actors co-create public value has also been widely recognized in the literature on governance networks (Krogh and Torfing, 2020).

Considering these similarities, it is easy to see why ecosystem concept may come across as a buzzword with little novelty (Aarikka-Stenroos and Ritala, 2017). That said, others have argued that this is a virtue rather than a vice of the ecosystem concept. According to Osborne *et al.* (2022), the ecosystem concept creates an integrating framework that combines various post-NPM theories, such as collaborative governance and public service logic, that manifest differently at each ecosystem level. This idea, however, has also faced criticism. According to Trischler *et al.* (2023), it is not expedient to assign specific phenomena or theories to different PSE levels. They argue that PSEs and different levels of aggregation should be seen as strictly analytical, rather than empirical, frameworks.

To conclude, ecosystem thinking in the public sector draws from the literature on innovation ecosystems, service sciences and various theoretical approaches related to public governance. While the essence of ecosystem thinking – the idea of multi-level and multi-sectoral public value

co-creation – is the same in all such approaches, significant disagreements remain, especially in the case of PSEs. Although the ecosystem concept exhibits obvious weaknesses in terms of conceptual clarity, empirical grounding and practical needs of public sector management, it has nevertheless become an important research agenda, which provides interesting analogies and interdisciplinary frameworks for investigating new public management trends.

As the academic discussion about on the ecosystem approach in public sector management often remains abstract and conceptually vague, our study seeks to enhance the conceptual clarity, empirical foundation and practical relevance of ecosystem thinking as a managerial approach. By doing so, we enrich the theoretical dialogue surrounding the integration of the ecosystem approach within the broader context of contemporary trends in public management. Specifically, by employing a case study methodology, we offer practical insights into how ecosystem thinking is implemented within local government organizations and applied across different branches of local public-sector management.

Research methodology and data sources

Research design and approach

This research employs a single-case study design, which is particularly suitable for creating an understanding of a novel phenomenon, as it enables a deep exploration into the practical manifestation of an abstract concept (Mariotto *et al.*, 2014). We chose Finland as the national context for this research, given its suitable institutional context for this study. For example, Kinder *et al.* (2022) have argued that Finnish local public services are migrating from network organizations to ecosystems. We focus specifically on Finland's second-largest city, Espoo, which is generally viewed as a city of business, technology and innovation. It has systematically developed ecosystem thinking for years (Anttiroiko and Sahamies, 2022; Markkula and Kune, 2015; Ylipulli and Luusua, 2020).

Since triangulation is important for enhancing the validity of single-case studies (Mariotto *et al.*, 2014), we utilize different methods of data analysis and utilize exploratory expert interviews and the reviews of city strategies and other official documents. First, for the expert interviews and city strategies we utilized *reflexive thematic analysis*. The reflexive thematic analysis method involves open and organic data coding, and subsequent development of summative themes. It offers a flexible starting point for inquiry, sensitive to case-specific nuances (Braun and Clarke, 2021), thus making it suitable method for exploring the dissemination of ecosystem thinking in the city of Espoo.

Second, regarding the other official documents, we employ a *summative content analysis*. This approach begins with quantitative conceptual analysis based on keywords identified in the literature. It is followed by a qualitative content analysis for interpreting the context in which the keywords appear and recognizing themes and patterns associated with those keywords (Hsieh and Shannon, 2005). This strategy allows researchers to identify how a phenomenon of interest manifests across different contexts. It is, therefore, well-suited for investigating our second research question focusing on the implementation of ecosystem thinking in different externally oriented branches of management.

In both summative and thematic analyses, we base the coding of relevant data on an interplay between reflexive data interpretation and existing theoretical understandings, which is a typical approach in an abductive process (Braun and Clarke, 2021; Thompson, 2022). Abductive reasoning allows us to examine how the empirical data differs from current theoretical understanding (Thompson, 2022). The research design is summarized in Table 1.

Data selection and description

Exploratory expert interviews constitute a suitable method for gaining tacit knowledge, especially in conceptually fuzzy fields such as the one discussed in this article

Research methodology	Main research question	Analysis approach	Method of data analysis	Data	Reasoning
Single case study (Mariotto et al., 2014)	1. How has ecosystem thinking been introduced and spread in local government organizations? 2. How is ecosystem thinking applied in different externally oriented areas of local public-sector management?	Conventional content analysis (Hsieh and Shannon, 2005) Summative content analysis of documents (Hsieh and Shannon, 2005)	Qualitative content analysis (reflexive thematic) Braun and Clarke (2021) Quantitative content analysis Qualitative content analysis (contextual)	E1–E6: Expert interviews (Bogner and Menz, 2009), D1–D2: City strategies D1–D12: Handbooks, frameworks and city strategies D3–D8; Handbooks and frameworks	Abductive (Thompson, 2022)

Table 1.
Research design

Source(s): Authors' own creation/work

([Bogner and Menz, 2009](#)). We conducted six such interviews between April 2020 and November 2022, including five City of Espoo employees and one local councilor. Three of the interviewees were involved in developing and coordinating an innovation platform launched in Espoo. Their job titles were Project Coordinator, Coordinator and Project Manager. The platform formed a part of the Six City Strategy spreadsheet project called “Open Innovation Platforms.” We refer to these expert interviewees as E1, E2 and E3. Two other experts worked in the Service Development Unit and had a key role in introducing ecosystem thinking to city government. Their job titles at the time of the interviews were Services Development Director and Senior Innovation Ecosystem Manager. We refer to them as E4 and E5. Lastly, the local councilor referred as E6 acted as the chairperson of the city board at the time when the ecosystem thinking was introduced to the city of Espoo.

To delve into the role of political legitimation and strategic management in introducing and spreading ecosystem thinking in a city government, we reviewed city strategies for 2017–2021 (D1) and 2021–2025 (D2) (see [Appendix](#) for detail). To identify other relevant data sources for our document analysis, we scanned a pool of documents called the #MakeWithEspoo product family, consisting of theoretical frameworks, handbooks, and implementation examples ([City of Espoo, n.d.](#)). These documents were particularly suitable for our purposes due to the strong focus on collaboration and external relations in public management. The city of Espoo co-produced these documents with various knowledge institutions during a strategic cooperation project between Finland’s six largest cities. This project, known as the Six City Strategy (*6Aika* in Finnish), took place between 2014 and 2020, and was committed to the ecosystem approach and the creation and utilization of innovation platforms ([Markkula and Kune, 2015](#)).

Within the #MakeWithEspoo product family, we focused on frameworks and handbooks falling under the title “City-as-a-Service.” The City-as-a-Service concept, to be discussed later in this article, has been central to Espoo’s approach to ecosystem thinking. These documents are referred to as D3–D12.

Following the summative content analysis approach ([Hsieh and Shannon, 2005](#)), we employed quantitative conceptual analysis as a first step of examining the documents. We scanned documents D1–D12 for the keyword “ecosystem” and the related keywords “network” and “platform” derived from a theoretical framework. We excluded homonyms, words appearing in the table of contents, references and repetitions in the

footer. We included the inflected Finnish forms of the keywords, relevant derivatives (e.g. “networking” [*verkostoituminen*]) and compounding words (e.g. “innovation ecosystem” [*innovaatioekosysteemi*]). The results are presented in Table 2.

Based on the keyword frequency, we selected documents D3–D8 for the qualitative phase of our summative content analysis. In this phase, we read the documents in full. The focus of coding was on what elements, such as the roles of the ecosystem actors, managerial functions, and mechanisms for public value creation, were discussed in relation to the keywords. To articulate the differences between different branches within public management, we refer to D3–D8 in terms of their primary subjects: *Innovation management* (D3), *Customer relationship management* (CRM) (D4–D6), and *Value co-creation management* (D7–D8) (see Table 2). These subjects are explicitly articulated in the documents and also reflected in their titles. We did not include D9–D12 in our qualitative content analysis because of their limited keyword appearances (see Table 2) nor city strategies D1–D2 as they were subject to the thematic analysis described above (see Table 1).

The following sections present the results of our data analysis. We begin by exploring the introduction and spreading of ecosystem thinking in the local government organization based on the expert interviews (E1–E6) and the city strategies (D1, D2). Subsequently, drawing from the summative content analysis of the handbooks and frameworks (D3–D8), we examine how ecosystem thinking is applied to innovation management, CRM and value co-creation management in Espoo.

	Document	Ecosystem (ekosysteemi*)	Network (verkosto*)	Platform (alust*)
City strategies	D1. The Espoo Story, city strategy for 2017–2021 (pp. 1–12)	–	7	5
	D2. The Espoo Story, city strategy for 2021–2025 (pp. 1–8)	5	10	3
Innovation management	D3. The Framework of the Innovation Management of Ecosystems (pp. 1–44)	216	28	21
Customer relationship 174 management	D4. The Framework for Customer-based Knowledge Management (pp. 1–36)	1	3	–
	D5. The Handbook of the Production and Utilization of Customer Knowledge (pp. 1–76)	5	1	2
	D6. The Handbook of Multi-channel Customer Service (pp. 1–76)	26	17	9
Value co-creation management	D7. The Handbook of Open Participation (pp. 1–80)	16	67	70
	D8. The Handbook of Co-creation (pp. 1–76)	30	21	28
Others	D9. Reference Architecture of Management (pp. 1–56)	–	2	1
	D10. The Handbook of Capability Management (pp. 1–34)	2	8	–
	D11. Municipality Canvas (pp. 1–8)	–	–	–
	D12. The Handbook of Customer Support in Electronic Customer Service (pp. 1–8)	–	2	1

Source(s): Authors’ own creation/work

Table 2. Conceptual content analysis of selected documents

Introduction and dissemination of ecosystem thinking in the city of Espoo

Espoo's road to ecosystem thinking

There were two major milestones in Espoo's adoption of ecosystem thinking: the emergence of a regional innovation ecosystem around the technical university in Otaniemi, which later became Aalto University (E6), and the beginning of the Six City Strategy collaboration (E5, E6). The Senior Innovation Ecosystem Manager pointed out that creating a range of policy documents and guidelines in the Six City Strategy gave impetus to the adoption of the platform model and ecosystem thinking in the city (E5). These documents include the ones analyzed in this article (D3–D12).

While the Service Development Unit eagerly promoted ecosystem thinking, its application and development in city organization have been rather slow. This is for two reasons. First, ecosystem thinking is a part of the development of public management from internal focus towards external relations, which implies a shift from a conventional public service ethos and civil servants' duties toward horizontal, collaborative and creative thinking. In this respect, ecosystem thinking deviates from a narrowly defined NPM approach, for the city government is not perceiving its primary role as a purchaser or a contractor but as an enabler, partner and learner, as the Senior Innovation Ecosystem Manager encapsulated it (E5). Adapting to the new enabling role of public officials requires a major change of mindset.

It is however, or somehow it has appeared, that the very mindset of co-creation, it can still be quite alien to both companies and to these learning environments. There is still quite strongly a very top-down like and very expert-oriented approach. (Project Coordinator, E1.)

Second, spreading the ecosystem ideology has not been a top-down process managed by the city's top managers and politicians, but a rather incremental process, which aimed at an evolutionary development based on the readiness of city government units and departments. As the units and departments vary in many respects, so do their readiness to apply ecosystem thinking. According to the Senior Innovation Ecosystem Manager, ecosystem thinking has not been fully integrated into the everyday operations of the administrative machinery even though its importance is largely recognized. Instead, employees sometimes perceive it as an additional task alongside their everyday administrative duties (E5).

However, interviewees also noted that successfully adopting ecosystem thinking into a local government organization is not simply a horizontal process between different units. It requires political leadership and action by strategic level management and political leadership.

We need this service development, and we need that culture of cooperation across borders. Doing things together was a sort of cornerstone. A systemic change will only occur when there are people from different organizations or different departments, and representatives and politicians, together with these officials, committing themselves to a particular change and how it will be done. (Local councillor, E6.)

Gradually, ecosystem thinking was also applied to city governments' strategic management. While in the strategy for 2017–2021 (D1) ecosystems were not mentioned, in the strategy for 2021–2025 (D2) the concept appears five times. According to the Coordinator, the pioneering mentality of promoting innovation and entrepreneurship has facilitated the adaptation of ecosystem and platform thinking in the strategic management of Espoo (E2).

Ecosystem thinking and co-evolving concepts

Espoo's ecosystem thinking combines elements of service and innovation ecosystems. The city strategy for 2021–2025 (D2) states that the city of Espoo aims at being "a national and European pioneer in the development of people-oriented service and innovation ecosystems and in the utilisation of digitalization." Moreover, Espoo's ecosystem thinking has co-evolved with concepts related to both service provision and innovation.

The City as a Service model utilises existing resources in a networked manner, enabled by digitalisation. According to the model, services will be provided by the entire city community, not just the city organisation. Companies and organisations will be an important part of our urban ecosystem and service provision. (D2)

According to the Services Development Director, City-as-a-Service is an umbrella term that describes the city as a meta-level framework encompassing various ecosystems (E4). The local councilor describes it as follows.

It [the City-as-a-Service model] makes it possible for the city to be more like a platform for providing services, where there are plenty of producers. More and more, this is very clearly where we are heading to. (Local councilor, E6.)

This embodies the notion of resource integration, which is considered a central element in the service ecosystem dynamic (Carida *et al.*, 2022).

Espoo's ecosystem thinking is also intertwined with the concepts of open innovation and co-creation platforms. A good example of this is the KYKY open innovation platform (Finnish acronym for "Accelerated Co-Creation by Schools and Businesses"), which was developed from a testing environment towards a mutually beneficial tool for value co-creation (E1–E3). The KYKY platform is also an illustrative case of the incremental and asynchronous implementation of ecosystem thinking in and between different departments of the city organization. Interviewees described how the platform was extended to other Education and Cultural Services functions (e.g. kindergartens and libraries) after its success in the Basic Education Unit was recognized. It was subsequently renamed the Make With Espoo innovation platform and is expected to expand into new areas in the future (E1–E4).

Ecosystem thinking in different branches of public management in the city of Espoo

Innovation management

The Framework for the Innovation Management of Ecosystems (D3) depicts city government as an innovative and experimental facilitator that aims to fully utilize local innovation potential. This reflects an ideological shift from welfarism toward managerialism (Anttiroiko and Sahamies, 2022). This document addresses the question of what the ecosystem in the given context is about, and how local government could promote and utilize innovation ecosystems.

The identification of city government's various roles plays an important role in the D3 framework. Accordingly, local government organization is expected to cope with a broader ecosystem, empowering other players to contribute to public value creation. In addition, Espoo city government assumes the position of a *primus inter pares* in the field of local public governance, built on its connections with relevant local actors, such as inhabitants, companies, associations and the broader society.

The document anticipates that a larger proportion of local public services will be produced by networks operating on platforms. It states that local government must participate in service activities that are "*adjusted to the realities of urban life, platform economy, and service logic*" (D3, p.29). Even if such technological, systemic and socio-technical aspects of development are only at the background in this document, they are presented as conditioning factors that will shape the future of public service. This is an important contextual factor motivating the adoption of ecosystem thinking.

The document defines the ecosystem approach as a systemic and self-organizing way of working that emerges in networks. The primary focus is on learning and ecosystems, which brings forth the "management of learning" as an additional element to innovation management that has traditionally focused on product development. Moreover, D3 emphasizes the connections between learning individuals, learning institutions, and

learning innovation ecosystems. Applying this framework is expected to benefit the city by creating new markets for those who produce products, technologies and platforms within ecosystems. It is expected to create new businesses, employment opportunities and better services, which in turn further stimulate application and development of the ecosystem framework.

Customer relationship management

The Framework for Customer-Based Knowledge Management (D4), The Handbook of the Production and Utilization of Customer Knowledge (D5) and The Handbook of Multi-Channel Customer Service (D6) focus on CRM. Their premise is that CRM requires data about service use, information about customer experiences, and a systematic construction of customer understanding. This, in turn, requires mapping service needs based on customers' expectations, identifying what customers perceive as valuable, and appreciating how service needs relate to customers' life situations.

Elements of ecosystem thinking in D4–D6 highlight two themes: (1) customer information management and (2) multi-producer model of service provision. Regarding the first theme, systematic collection, analysis and sharing of customer data within ecosystems is essential. According to D4–D6, the city government plays a central role in customer information management in service ecosystems, supporting other actors of the ecosystem (e.g. companies, communities or research institutions) to operate without direct public funding (D4). It can, for example, provide an integrative data platform that collects, shares and provides as much customer and service-related data as possible (D5). In addition to data, city governments can offer service providers and developers other resources, such as systems required for analytics and services that support centralized client interface operations (D4).

The enabling role of city government also supports the multi-producer model of service provision and aligns with the City-as-a-Service concept. This model is based on the idea that collaboration is beneficial if customer satisfaction aligns with city government's goals. This is the case even if elements of service production within a service ecosystem fall outside the city government's actual duties. It also applies to services provided by businesses and third-sector organizations that complement municipal services. City government must share customer needs-related information with the producers of these complementary services and direct customers to them. Another important part of multi-producer service provision involves steering customers towards cost-effective services, for example, by promoting preventative or digital services within the service ecosystem (D6).

The Handbook of Multi-Channel Customer Service (D6) states that whereas in the *organization-centric perspective* the driving forces behind the decision-making are the prices of services, cash flow and value within the organization's internal value chains, in the *ecosystem perspective* the key is the best fulfilment of the customer promise, future business potential and value in system-level value chains. Ecosystem thinking emphasizes the relationships between organizations and is therefore thought to trim out unproductive work and suboptimization. It urges to think about the benefits of the whole system. According to D6, city government should aim at acting as a moderator in its service ecosystems and creating principles that guide participating actors' operations. Such principles include jointly created coordination practices and performance metrics, consistent processes and quality requirements, as well as an operating model that ensures service continuity and flexibility.

Value co-creation management

Value co-creation management is explicitly discussed in the Handbook of Open Participation (D7) and the Handbook of Co-Creation (D8). The purpose of D7 is to help city governments conceptualize the co-creation that occurs between citizens and public, private and third-sector

organizations. It presents a model developed in Espoo that aims to enhance customer-orientation, improve the accessibility of services, and create new business opportunities. Its implementation is discussed in depth in D8.

Co-creation is thought to create synergies between service, business, and innovation ecosystems by allowing ideas, knowledge and skills to flow freely, and provide added value to all actors involved. Although participation is at the core of D7 and D8, their focus is not on the democratic inclusion, but rather on how different actors in the service ecosystem can participate in value creation through service development and innovation (D8).

As in the documents on innovation management and CRM, D7 and D8 emphasize the role of city government as an enabler or orchestrator of innovation within an ecosystem. According to D8, city government implements this role by opening its processes to co-creation. This might take the form of an idea competition or providing common spaces and facilities for companies, residents, and other actors interested in cooperation. City government can utilize various platforms in doing so. These may include (1) open digital platforms that allow the sharing of data, development needs, ideas and experiences, or (2) open innovation platforms that bring actors together to create innovative solutions to pressing problems and develop new products and services. Value co-creation on these platforms is based on network effects and the benefits users generate for one another. D8 also provides examples of such platforms in Espoo, notably the KYKY platform designed in the second half of the 2010 to bring schools and businesses together for testing EdTech products and for co-creating value.

Discussion of the case study findings

Our study shows that while ecosystem thinking has been actively promoted by the Service Development Unit of the city, it has been adopted asynchronously in different administrative branches within the city government. This is due to the readiness of units and voluntary engagement of actors involved. Moreover, ecosystem thinking has co-evolved with other concepts, such as City-as-a-Service, open innovation, and platforms. This implies that the dissemination of ecosystem thinking is understood as a learning process rather than as an adoption of a fit-for-purpose model.

Our document analysis covered three branches of public management: (1) innovation management, (2) CRM and (3) value co-creation. City government's enabling role and stakeholder engagement were typical features of the ecosystem approach in these three branches of management. In addition, all three had their unique emphases. Regarding innovation management, the case of Espoo highlights the importance of multi-level learning. Learning has been recognized as one of the primary elements in ecosystem leadership also in previous studies, especially when it comes to innovation capability (Kinder *et al.*, 2021, 2022). The application of Espoo's ecosystem thinking in CRM is exemplified by sharing resources (e.g. customer data) within service ecosystems and adopting multi-producer model that facilitates the provision of integrated services to citizens. This is in line with the literature on PSEs, where engaging in resource integration (Carida *et al.*, 2022) and service integration (Kinder *et al.*, 2022) have been identified as central parts of ecosystems' functioning. Such aspects of PSEs have a connection with approaches like public service logic and public value theory (Strokosch and Osborne, 2020; Petrescu, 2019). In the area of value co-creation, different kinds of platforms facilitating innovation appear as practical expressions of ecosystem thinking in Espoo. Digital platforms have been noted as both structures for value co-creation in innovation ecosystems (Ritala *et al.*, 2013) and tools for resource orchestration in service ecosystems (Carida *et al.*, 2022).

While the abovementioned features align with the PSE literature, Espoo's ecosystem thinking also exhibits characteristics emphasized in the managerially oriented business

ecosystems literature. First, [Kinder et al. \(2022, 2021\)](#) have argued that PSEs are not united by a central controller, but instead are guided by a shared collective consciousness, mutual trust and emotional commitment. Business ecosystems, in the other hand, often contain a central company playing a leadership role. This central company orchestrates resources and sets the direction for co-evolution ([Yablonsky, 2020](#)). In Espoo, the city government works in collaboration with other actors, but has a central orchestrating role that goes beyond nurturing collaborative consciousness suggested by [Kinder et al. \(2021\)](#) and further than the facilitative orchestrating role described by [Carida et al. \(2022\)](#). Rather, the city government takes on a special authority and responsibility for setting common practices, such as quality requirements and operating models. Moreover, the city of Espoo provides platforms, a task often associated with the ecosystem leader ([Gomes et al., 2018](#); [Rinkinen and Harmaakorpi, 2019](#)).

Second, to satisfy customer needs, the city government of Espoo actively aims to create new business opportunities for complementary services operating alongside the services it provides. Steering citizens toward these services is thought to be desirable because of expected cost and public spending reductions. This resembles a business ecosystem, where the production of complementary goods and services engenders positive network effects and synergy gains ([West, 2014](#)). While service integration has been identified in previous research on PSEs ([Kinder et al., 2022](#)), the role of complementary services seems to have been underexplored in the literature.

Lastly, the depictions of PSEs in the literature typically accentuate collaboration, paying little attention to competition between actors within the ecosystem. Public sector organizations' activities in PSEs are thought to resemble collaborative governance, especially at the service system level ([Osborne et al., 2021, 2022](#)). The business ecosystems literature has, in contrast, identified co-occurring collaboration *and* competition to be at the heart of an ecosystem's functioning ([Moore, 1993](#)). In Espoo, the idea is that competing services provided by various private and third-sector organizations will help meet diverse and ever-evolving customer needs. Therefore, enabling new business opportunities and healthy competition is a keystone in Espoo's ecosystem thinking. This mirrors the logic of business ecosystems where ecosystem players must constantly improve, adapt and innovate to avoid losing their competitive position within the ecosystem ([Möller et al., 2020](#)).

Concluding reflections

This article contributes to the ongoing discussion about the ecosystem approach in public management. Through a qualitative single-case study, we examined how ecosystem thinking was introduced and disseminated in different externally oriented branches of public management in the city of Espoo, Finland.

Espoo's ecosystem approach reflects an enabling role of city government and a growing external focus in public management. In this respect, it resembles PSE-related literature and other post-NPM theorizations. That said, it deviates from the characteristics some authors view as defining features of PSEs. Previous descriptions of PSE management have often had a community-oriented focus, overlapping considerably with recent conceptualizations of public governance, especially those associated with the NPG doctrine. In contrast, ecosystem thinking in the city of Espoo shares features with NPM, as it has a strong managerial emphasis and innovation-oriented approach. This can be seen as a reflection of an ideological shift from welfarism towards managerialism. Based on our observations, we suggest that PSEs share more similarities with business and innovation ecosystems than commonly recognized.

Given the above, we argue that ecosystem thinking should not be conceived of as a public management theory to replace previous theorizations of public service management and public governance. Rather, it offers a contextual lens that reflects several emerging features

of public service management in the context of increased external focus and technological developments. These features include (1) an open value co-creation mindset, (2) dynamic stakeholder relations and complex multi-actor setting and (3) a digital environment and broader socio-technical systems. While the service ecosystem concept emphasizes pluralism, diversity, and self-adjusting systemic networks, its implementation can involve the use of tools often provided and governed by a single focal actor within the system, such as the city government. These tools can include, for example, new forms of citizen-sourcing and digital platforms for matchmaking, resource integration, and sharing.

Although single-case studies have their limitations in terms of generalizability and external validity, they can, nonetheless, provide in-depth and detailed insights into complex issues, allowing exploration of novel phenomena when the relevant variables are largely unknown. As such, this study offers pragmatic insights and lessons learned from a real-life case. In addition, it provides a robust theoretical understanding of the managerial aspects relevant to the ecosystem approach. Despite the limited data set, our careful selection and strategic employment of data triangulation facilitates the development of a nuanced understanding of ecosystem thinking in public management in the given context. However, conducting comparative studies across countries with diverse administrative traditions would be valuable for extending ecosystem thinking's applicability beyond the local government of Nordic welfare society.

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Appendix

List of analyzed documents from the City of Espoo

Names of the documents D1 and D3–D12 were translated from Finnish to English by the authors. Documents retrieved September 29, 2021.

D1. *Espoo-tarina 2017*; The Espoo Story 2017]. <https:// espoo.oncloudos.com/kokous/2021381-21-77756.PDF>

D2. The Espoo Story 2021. <https://www.espoo.fi/en/city-espoo/espoo-story>

D3. *Ekosysteemien innovaatiojohtamisen viitekehys*. [The Framework of the Innovation Management of Ecosystems]. https://issuu.com/espookaupunki/docs/tuotos_editointi_oskivi_ekosysteemi_4cb399f6775265

D4. *Asiakkuusperustaisen tietojohdamisen viitekehys*. [The Framework for Customer-based Knowledge Management]. https://static.espoo.fi/cdn/ff/LXvbtblesC6kU3S0HebLkbMgrPam6kU8vfe8H5wsFqE/1629273361/public/2021-08/viitekehys_Asiakkuusperustaisen_tietojohdamisen_viitekehys_ei%20saavutettava.pdf

D5. *Asiakkuustiedon tuottamisen ja hyödyntämisen käsikirja*. [The Handbook of the Production and Utilization of Customer Knowledge]. <https://static.espoo.fi/cdn/ff/Xj2nMquFKTANMZfRKBHFWXuoU>

Bw9Mun5upUPS7LJtvY/1629460848/public/2021-08/k%C3%A4sikirja_Asiakkuustiedon_tuottamisen_ja_hy%C3%B6dynt%C3%A4misen_k%C3%A4sikirja_ei%20saavutettava.pdf

D6. *Momikanavaisen asiointipalvelun käsikirja*. [The Handbook of Multi-channel Customer Service]. https://static.espoo.fi/cdn/ff/sjf5UPXVJoS5YBDe6vUXlfaS1TgIkDkXeCVYfcpA5iQ/1629461116/public/2021-08/k%C3%A4sikirja_Momikanavaisen_asiointipalvelun_k%C3%A4sikirja_ei%20saavutettava.pdf

D7. *Avoimen osallisuuden käsikirja*. [The Handbook of Open Participation]. https://static.espoo.fi/cdn/ff/ZPo-kcoOy5DxUJI7tlV6u4a-d1ox1wsjH8Igl._OYjQ/1629460958/public/2021-08/k%C3%A4sikirja_Avoimen_osallisuuden_k%C3%A4sikirja_ei%20saavutettava.pdf

D8. *Yhteiskehittämisen käsikirja*. [The Handbook of Co-creation]. <https://issuu.com/espoonkaupunki/docs/yhteiskehittaminen-a4-web-issuu>

D9. *Johtamisen viitearkkitehtuuri* [Reference Architecture of Management] <https://www.avoindata.fi/data/fi/dataset/kunnan-johtamisen-viitearkkitehtuuri>

D10. *Kyvykkyyksien johtamisen käsikirja* [The Handbook of Capability Management] https://static.espoo.fi/cdn/ff/nrB37l-KNoSWgioM4wZXOJCcDrJ7wS2ivHwSD2jXGE/1629461058/public/2021-08/k%C3%A4sikirja_Kyvykkyyksien_johtamisen%20k%C3%A4sikirja_ei%20saavutettava.pdf

D11. *Kuntakanvas*. [Municipality Canvas] https://static.espoo.fi/cdn/ff/78g1pWPqosx55B_jZ3UMAy6isupdbfGYAAVTI9u9kQ/1629273043/public/2021-08/esite_Kuntakanvas_ei%20saavutettava.pdf

D12. *Sähköisen asiointin asiakastuen käsikirja* [The Handbook of Customer Support in Electronic Customer Service] https://static.espoo.fi/cdn/ff/5NMf24M50H_Xo0a5XorETUpxzLrFXyCipuxeciwO5A/1629273136/public/2021-08/esite_S%C3%A4hk%C3%B6isen_asiakastuen_toimintamallin_kehitt%C3%A4minen_ei%20saavutettava.pdf

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