Designing City Service Ecosystems: The case of the city of Espoo in the capital region of Finland

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Abstract. This article discusses the evolution, scope, and impact of ecosystem thinking in public service management in the city of Espoo, Finland. Discussion starts with a brief introduction to the emergence of ecosystem thinking and the ideas on which the conceptualization of ecosystems in the given local context have been anchored. The second task is to describe, on the basis of the document analysis and two key informant interviews, how the city of Espoo started to build the conceptual tools, models, and strategies associated with ecosystem thinking. We will assess the added value of such an approach in four areas of public management, which deal with service innovation, competence issues, customer relationships, and citizen engagement. Lastly, this article will elaborate briefly three contextual ecosystem-related issues. First, to what extent the ecosystem thinking depends on the critical mass of producers, developers, and other stakeholders in terms of scalability, urbanization economies, and opportunity enhancement? Second, what is the role of digitalization in the development of ecosystem thinking? Third, how is the application of ecosystem thinking in public service management conditioned by its inherent institutional context, such as the democratic and bureaucratic aspects of local self-government? This article highlights the preconditions and forms of the real-life ecosystem thinking in the context of a progressive local government in the Nordic welfare society, and further assesses the promise of ecosystem thinking as a paradigmatic approach to public service management adjusted to the conditions of the global digital age.

Keywords: City, Espoo, Finland, Ecosystem, Public service, Public service ecosystem, Public management, Innovation management.

1 Introduction

Profound technological, political, economic, social, and environmental changes are sweeping through communities of all shapes and sizes in different parts of the world. While some of these changes are alarming, as with climate change, coronavirus pandemic, or increased economic polarization, many of them create new opportunities. Among the most important factors on the opportunity side of the equation are

technological advancements and a wide range of related socio-technological and organizational trends that are at a fast pace reshaping the current techno-economic paradigm and, along with it, essential aspects of our urban future. Areas that have attracted increasing attention among local developers and urban researchers alike within such a broad framework are platformization and ecosystem thinking, which are crystallizations of the recent changes taking place at the intersection of technological, economic, and social development [1-4].

Radical changes associated with platform logic and ecosystem thinking have a natural connection with the way we conceptualize urban communities [5]. Furthermore, these trends penetrate to the preconditions and forms of local institutions themselves, local government included. In this sense, the novel trends referred to above are gradually reshaping public governance, management, and service provision, or to be more precise, further accelerating the development that begun a few decades ago when the hierarchical mode of public governance was supplemented with markets, partnerships, networks, and various new methods of citizen participation. In the traditional hierarchically organized system, public services are decided by politicians, managed by public managers, provided as an in-house solution, and controlled primarily by political-administrative machinery. In the advanced Western countries, the managerial turn took place in the 1980s and more so in the decade that followed it, most notably along the principles of New Public Management (NPM), according to which political control was loosened, managerialism increased, services contracted out, and citizens seen primarily as service users [6, 7].

A re-evaluation of public administration and management (PAM) theory has been going on for some time [8]. Due to several challenges especially with business-style NPM, the next significant wave in public management was to strengthen political steering, utilize networks, and enhance citizen involvement under the loose umbrella of New Public Governance [9-13]. We focus here on the next phase of public governance and service management, which is emerging as a response to technological advancements, overall development of tech-savvy environments, and related socio-technical changes. Particular manifestations of these changes in the administrative logic are associated with digital platforms and innovation and service ecosystems [14, 15]. Especially the concept of ecosystem is still underdeveloped vis-à-vis its promise derived from the business ecosystem analogy [16]. There is a need for theoretical analyses of the premises of ecosystem thinking and empirical analyses of its early manifestations in local government.

This article aims to provide empirical insights into the pros and cons of the real-life ecosystem thinking in the context of a progressive local government in a welfare society. We focus on the following research questions:

(a) How is *ecosystem thinking* emerging in the local governments in the advanced Western countries?
(b) What is the added value of ecosystem thinking in *public service management*, especially in such areas as innovation management, competence management, customer relationship management, and citizen engagement?

(c) How does *local embeddedness* affect critical mass and further scalability, urbanization economies, and opportunity enhancement of urban service ecosystem?

(d) What is the role of *digitalization* in the operationalization and utilization of ecosystem thinking?

(e) How does ecosystem thinking in public service management relate to its *institutional context*, especially to the democratic and bureaucratic aspects of local self-government?

We will provide empirical evidence for the emergence, forms, and impact of ecosystem thinking in local government through an illustrative case, as it allows an in-depth analysis of nuances of the novel phenomenon under investigation. This article forms a part of a larger on-going research project, which started from platform governance and broadens the view to ecosystem thinking [15, 17-19]. Research strategy and methodological choices are discussed in detail in the next section.

2   Methodology

Our approach can be characterized as exploratory case-based research with strong emphasis of the illustrative role of the case in making sense of the preconditions and introduction of ecosystem thinking in a progressive tech-savvy cities (cf. [20-21]). The setting of our case selection is similar with Sahamies et al. [17], the pool of potential cases being evidently large. We wanted to shed light on ecosystem thinking through a single case study, which requires that the case is illustrative enough. Beside explicit commitment to ecosystem thinking, this implies the existence of such preconditions as advances in intersectoral collaboration, democratic culture, and sufficient digital infrastructure. In addition, special characteristics of local government, such as openness, inclusiveness, transparency, innovativeness, and the culture of experimentation, can be expected to be essential for the ecosystem thinking to thrive. With such criteria, several notable cities especially in both Anglo-American and European country groups stand out.

When we sharpened the criteria to the early adoption of urban platforms and ecosystem-related service innovations in the public domain, the group of potential cases is narrowed down. We ended up making the case selection among Nordic region for as a context it fulfils practically all the criteria mentioned above. After screening different options through both literature and case descriptions in the Web, a particular program, Six City Strategy or 6Aika in Finnish, attracted our attention as a nationally backed up program co-funded by the EU. It facilitated platform and ecosystem development among six largest cities in Finland. After screening the cities involved – Helsinki, Espoo, Vantaa, Turku, Tampere, and Oulu – the most impressive case in applying ecosystem thinking appeared to be the city of Espoo in terms of its reputation, explicit commitment to platform and ecosystem thinking, relevant project portfolio, and availability of relevant materials (see [22-26]). This selection implies that discussion is tightly tied to a Nordic style democratic local government in the context of a tech-savvy welfare society.

The primary data sources used are selected documents and two semi-structured expert interviews. In order to obtain and analyze documentary evidence of how ecosystem thinking has been introduced, conceptualized, and communicated in the city government, we focused on relevant strategic documents among the set of policy documents, frameworks, and handbooks that (a) are published by the city of Espoo, (b) discuss new ecosystem thinking, and (c) are presented the way that indicates that they manifest Espoo's approach to or application of ecosystem thinking (see Tools to Support Development at https://www.espoo.fi/fi/espoon-kaupunki/innovatiivinen-espoo/tyokaluja-kehittamisen-tueksi). On the basis of preliminary thematic selection, eight documents were selected for a closer inspection. Documents are referred to in the text with codes D1 to D8 (see List of analyzed documents of the city of Espoo in Appendix 1).

Document analysis was supplemented by two interviews of the employee of the city of Espoo, chosen on the basis of their role in the introduction of ecosystem thinking in city government. They were Director for City as a Service Development interviewed in December 2021 and Senior Innovation Ecosystem Manager interviewed in February 2022, both having a key role in the Service Development Unit of the city government (see List of expert interviews in Appendix 2). Interviews were essential for making sense of the context for the research questions and understanding the organizational processes through the eyes of senior and project managers who had a hands-on role in introducing ecosystem thinking in the city government. Such exploratory expert interviews are used to gain tacit knowledge in a conceptually fuzzy field (see [27]). At the same time, they provide insights into and content validation of the factual organizational processes in the given real-life case.

3 Public service ecosystem

3.1 Emergence of ecosystems in the public management literature

The two novel concepts that emerged recently the field of PAM as a reflection of changing techno-economic paradigm and related organizational and social ramifications include platforms and ecosystems. The role of platforms in urban development, services, and governance emerged as a fairly coherent research agenda in the mid-2010s [14, 18-19, 28-35], whereas ecosystem thinking has remained somewhat elusive and vaguely conceptualized [8, 36-38].

In the local affairs, ecosystems have been primarily associated with digital ecosystems [39], semantic city service ecosystems [40], and innovation ecosystems [25-26], and regarding services, with generic view of service ecosystems [41], smart service ecosystems [42], and innovation in service ecosystems [43-44]. The concept has been rarely used in the context of public governance, even though there are concepts like 'open governance ecosystem' that conceptualize governance field using ecosystem analogy [45]. In some conceptualizations this discussion developed from services towards broader views of cities as services systems [46] or as a kind of service platform as in the concept of City-as-a-Service [47]. This discussion poses a challenge to our understanding of the nuances and utility of the concept of ecosystem in the given context. In particular, what is the added value of the concept of ecosystem in the public

domain, and what this concept refers to in concrete terms, especially regarding public service management.

3.2 Conceptualizing public service ecosystem

Service ecosystem can be defined as a "relatively self-contained, self-adjusting system of resource-integrating actors connected by shared institutional arrangements and mutual value creation through service exchange" [48]. When this is applied to the public domain, essential aspects remain the same, even though public services are conditioned by a few critical factors – including democratic control, legal framework, and public funding – that are ontologically and institutionally relevant aspects of the reality affecting the ontogenesis and operations of every public entity.

The idea of public service ecosystem (PSE) has emerged as novel approach to public service management, which can be seen as a step forward in the evolution of new public governance. PSE reshapes the view of the utilization of networks in providing public services [38, 49]. It has emerged as a unifying framework through which to understand the complexities of public service delivery and value creation within a multi-level setting [36]. In terms of service logic, it implies a move beyond "the transactional and linear approach associated with NPM, towards a relational model where 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." [37, p. 436]. Such a view provides new opportunities for value creation and enhancement by combining resources and competences in a multi-layered setting, which poses obvious managerial challenges, as indicated in the current discussions about public service ecosystem management [8].

4 Ecosystem thinking in the city of Espoo

4.1 The city of Espoo in the capital region of Finland

Espoo is a city in the capital region of Finland. It is located in the Helsinki Metropolitan Area by the Gulf of Finland. Its neighboring municipalities are Vihti, Nurmijärvi, Vantaa, Helsinki, and Kirkkonummi. In addition, the municipality of Kauniainen is enclaved within it. The population of Espoo was close to 300,000 in June 2021, making it the second largest city in the country.

Espoo's development is tightly connected with the capital region, in which the three largest cities are Helsinki, Espoo, and Vantaa. Helsinki as the capital city is the most well-known and most internationalized city in the region. Espoo due to its polycentric urban structure and quick and fairly recent urbanization has for long been in the shadow of Helsinki, even if the location of the main campus of Aalto University in Otaniemi, the collection of headquarters in Keilaniemi, and cultural and business center in Tapiola have increased its reputation as a city of business and technology. Vantaa is considerably smaller than Helsinki and Espoo and has a stronger multicultural, residential, and edge city atmosphere. Vantaa's strength is the location of Helsinki-Vantaa Airport and the development of Aviapolis, which is a business area branded as an internationally oriented airport city.

In all, Espoo is a part of a dynamic capital region in which cities have their own specializations and profiles. It is a city of business, technology, and innovation, which is functionally connected with other cities of the wider metropolitan area (see e.g. [23, 25]). Cities in the capital region and in the wider metropolitan area have collaborated in many areas of urban development, including the promotion of strategic business and regional innovation system development [50]. Helsinki, Espoo, and Vantaa have also been involved in the collaboration between six largest cities in Finland, known as Six City Strategy, which had a decisive role in the introduction of ecosystem thinking in Finnish local government (see e.g. [24-25]).

4.2 The emergence of ecosystem thinking

Espoo's road to ecosystem thinking has its root in the impact of the technical university in Otaniemi and the gradual emergence of regional innovation ecosystem around it. We may see Espoo as the case in which the city is modeled according to the political economy of its resource base or signature institution. Espoo is in essence a city that is inspired by and in a sense even modeled itself on the technical university. The story goes back to the 1950s, when Helsinki University of Technology, the oldest and largest technical university in Finland, started its operations in Espoo. In 2010 it was merged with other educational institutions to become Aalto University. The university with its close connection with business development was a particularly influential model because during these formative post-war decades Espoo had neither a strong urban profile nor other dominating institutions. Such a thinking was merged with the gradually urbanizing Finnish welfare society, in which the role of municipalities as important self-governing and development-oriented local institutions were generally seen prominent.

The spirit of the city of Espoo resembles that of innovative and entrepreneurial technical university and urban innovation milieu, even to the extent that its urban form and multipolar and networked structure resembles that of a campus life. In this, Espoo actually resembles many post-industrial cities and a range of cases in which universities have left their mark on their host cities, such as Cambridge or Oxford in the UK, or Berkeley, Stanford, and Chicago in the United States (cf. [51]) as well as cities that have adopted some of the attitudes and working methods from business incubators, innovation hubs, and technopolises, epitomized by cities like Palo Alto in Silicon Valley, California [52]. This view is further sedimented in how essential role the entrepreneurial university – Aalto University in this case – plays at the heart of place-based innovation ecosystem [25]. The key brand of this system is Espoo Innovation Garden within Keilaniemi-Otaniemi-Tapiola area of Espoo [23], within which Urban Mill is a good example of a hub that facilitates learning and collaboration (https://urbanmill.org/). It is thus no wonder why the city of Espoo has adopted a range of radical approaches to its governance and service development, such as openness to disruption, the culture of experimentation, platformization, and ecosystem thinking.

The other essential aspect of the Espoo story is the innovation-driven Finnish economy, and the role of public sector organizations in promoting it, including the input of progressive local governments. City's openness to new ideas and new business models, productization and contracting out developed in the 1990s and more so in the following

decades [Sutinen, P., Personal interview, December 10, 2021]. A milestone in this respect was, however, the beginning of the collaboration between six largest cities in Finland, known as Six City Strategy, abbreviated to 6Aika in Finnish [Sjöholm, K., Personal interview, February 7, 2022]. It began with three large-scale spearhead projects, those of open data and interfaces (2014-2017), open innovation platforms (2015-2018), and open participation and customership (2015-2018), which promoted the development of Finnish smart city model (cf. [22]). These three spearhead projects and a range of related projects gave significant impetus to the adoption of platform and ecosystem thinking in the six cities involved (see https://6aika.fi/). For example, one of the outcomes of the open innovation platforms project was that platform thinking was incorporated into the strategies in all six cities.

This Six City Strategy collaboration had a huge impact on the city of Espoo's involvement in ecosystem thinking in the latter half of the 2010s (e.g. [53]). Among the first important outcomes of this work was a document titled "Ekosysteemien innovaatiojohtamisen viitekehys" (The framework for the innovation management of ecosystems) published in 2018 [D1]. It was drafted as a part of Open participation and customership spearhead project of the Six City Strategy in the Service Development Unit of the city in collaboration with KPMG. An additional element in the policy context was the connection with the EU funding instruments and various EU programs, such as smart specialization strategies (S3) for territorial development [25].

The city of Espoo has a city strategy that is written in the form of a story, which is a collaboratively drafted view of the orientation and strategic actions of the city for 2021-2025 (https://www.espoo.fi/en/city-espoo/espoo-story). While the idea of City-as-a-Service appears in The Espoo Story, it only scratches the surface of the issue. The true work in this respect was done when a range of strategic documents and guidelines were drafted within Six City Strategy in the latter half of the 2010s. They are published on a site titled Tools to Support Development Work ("Työkaluja kehittämisen tueksi" in Finnish) at https://www.espoo.fi/fi/espoon-kaupunki/innovatiivinen-espoo/tyokaluja-kehittamisen-tueksi.

4.3   Ecosystems in different areas of public management

In this section we will illustrate the managerial view of public service ecosystems by highlighting how the city of Espoo has adopted this framework in a few special aspects of public service management, including the management of service innovations, public service competence, customer relations, and citizen engagement. They can be seen as managerial fields of their own, each having nevertheless overlapping areas with or providing specific view of public service management. In the case of Espoo, *innovation management* is the kind of framing managerial field, which determines the approach to the ecosystem thinking, as it primarily seeks resources and competences outside the administrative apparatus of the city to be utilized in developing services and, more broadly, in urban renewal. Another outward oriented area is *citizen engagement*, usually seen as a governance rather than managerial issue. The organization of the forms of citizen participation includes anyway an obvious managerial dimension. Lastly, *customer relationship management* operates at the core of public service management,

while *competence management* is primarily an internally oriented function that builds the capacity of the organization.

It is worth emphasizing that the evolution of ecosystem thinking within the city's administrative and service organization is asynchronous. There is a general tendency in the highest political decision-making bodies towards ecosystem style thinking, but at the practical level a kind of natural inertia manifests itself in the process. For example, while the city strategy states that "[w]e will promote the implementation of the City as a Service multi-provider model" (https://www.espoo.fi/en/city-espoo/espoo-story), the way ecosystem thinking and City-as-a-Service idea is conceptualized within Service Development Unit is much broader and radical. The Service Development Unit applies a principle that each unit must adopt such new ways of thinking on the basis of their own motivation and learn from their own experiences. This makes the organizational transformation asynchronous. Nevertheless, ecosystem thinking is visible throughout the municipal organization, even though it is most developed in those organizational units that seek resources and competences outside the organization, that deal with urban development, and that are involved in education and learning. [Sjöholm, K., Personal interview, February 7, 2022.]

Innovation management. To start with, defining Espoo's role in innovation management required that the entire mindset was changed regarding the role of the city government in promoting innovativeness in its organization and within a broader urban community [Sjöholm, K., Personal interview, February 7, 2022]. The most important generic framework for ecosystem thinking in the city of Espoo is documented in The Framework of Innovation Management of Ecosystems, which determines the city government's overall approach to ecosystem thinking [D1]. It emphasizes "the attempts to direct innovative energy towards shared goals for the benefit of all members of the ecosystem". This framework identifies the need to deal with potentially tensional aspects of such a setting, such as having a sufficient degree of conformism in the field of differing objectives of various ecosystem players as a precondition for synergy, coordination, and smooth collaboration. [D1, pp. 18-22.]

The city government has to define its own role on this scene. This discussion raises the issue of the publicness of local government [54-55], which requires that the city government defines its role in the service ecosystem. There is a natural duality of the role of local government in innovation ecosystems: the city government is an enabler that contributes to the learning and renewal processes in the local society, while at the same time the units of the local government are learning organizations themselves and operate as members of various innovation ecosystems. [D1, pp. 27-29.] As an institution, the city government is involved in the networks of customers and other institutions and participates in co-creation processes in the pursuit of creating innovations that benefit local actors. While doing this, it participates in service activities that are "adjusted to the realities of urban life, platform economy, and service logic" [D1, p. 29]. Espoo aims at becoming active player in the ecosystem not only as a purchaser but also as an enabler, partner, learner or in other roles [Sjöholm, K., Personal interview, February 7, 2022].

The city government – and the public sector as a whole – serves as an enabler in ecosystems, which implies that it has a special role in maintaining local conditions that are conducive to long-term development of ecosystems, including infrastructures, research, education, and public funding. City of Espoo's strategic position as a primus inter pares in the field of public governance is built on its connections with all local actors, including inhabitants, companies, and associations, as well as its connections with the wider society. Related to this role, it represents a democratic society that operates within the rule of law. [D1, pp. 27, 30-31.]

Competence management. Ecosystem thinking has its inherent connection with talent and competence management, which has both internal and external dimensions. Regarding the latter, Espoo has started to organize its talent attraction activities within the city's line organization (see [56]; see also at https://www.espoo.fi/en/working-life/talent-espoo). At the same time, it is an internal issue, revolving around the question of how the competences of the city government should be developed and increased in order to be able to best utilize various service ecosystems [Sjöholm, K., Personal interview, February 7, 2022].

This issue is addressed in the strategic document titled The Handbook of Talent Management [D2]. The relevance of competences can be derived from both resource-based view of an organization and service-dominant logic, as both of them have competence as their core category. Competence is a key resource for any service system, and that resource must be managed if one wishes to acquire best competences to be utilized in its service system and nurture existing competences within city government.

In the case of the city of Espoo 'competence' is a cross-cutting theme that is expected to help in mapping out, planning, and directing development efforts in a holistic and contextual manner. This broadens the perspective beyond administrative duties or skills. The key idea of applying ecosystem thinking is to acknowledge that the city as an organization does not have to meet the future challenges alone if it "includes in its development efforts the competences from outside its organization". This is where ecosystems can be extremely useful, as they serve as a pool of various kinds of businesses, research institutes, and other expert organizations. [D2, p. 9.] This relates to an open-minded attitude towards new technologies, innovative work methods, partners, networks, and other ecosystem components, which helps to strive for continuous development and higher goals. As crystallized in the given document, "[t]his development road map is also called organization's stretching towards strategic goals through the competence development" [D2, p. 16].

Customer relationship management (CRM). Public service management is not only about innovation and competence management. It is also about managing the service delivery processes and creating value with the customer. How is ecosystem thinking applied in this core area of service provision and especially in managing customer relationships? The city of Espoo has addressed these issues in four documents that deal with the customer-based knowledge management [D3], the production and utilization

of customer knowledge [D4], and multi-channel customer service [D5, D6]. Let us focus here on the framing issue of customer-based knowledge management.

The city of Espoo has modeled this area with a focus on two major dimensions. First, it focusses on determining the role of local government in relation to its customers. Local government either organizes required services or serves as an enabler within its jurisdiction. In this context, the latter is more pronounced than the former. Second, the other key dimension is the benefit that the customer reaps from public services. Beside immediate benefits to a customer, many benefits materialize later, and some are indirect as with the creation of public value. [D3, p. 11.]

The city's approach to customer relationship management focusses on conceptualizing and modeling service processes and enabling full utilization of open data and data analytics. The aim has been to develop tools for collecting and analyzing customer data, which is made available to all stakeholders involved in the development of multi-channel services and setting up new businesses. [D4, D5.] In such constellations the utilization of ecosystem thinking requires new attitudes and competences, as the content and value of service will be ultimately determined by the customer. This approach entails joint visioning, holistic understanding of the field and stakeholders' relationality, and creating conditions for smooth interaction. The entire rationale of ecosystem management is derived from the ultimate purpose of co-creating value for customer. In the same vein, service as a system is understood in a dynamic and market-oriented fashion, including value networks and revenue logics, which is vital in the long-term development of service ecosystems. [D6].

Citizen engagement. Added value of ecosystem thinking in co-creation and citizen participation brings democratic control into the picture. This has been addressed especially in two strategic documents of the city of Espoo, those of The Handbook of Co-creation [D7] and The Handbook of Open Participation [D8]. The city's documents focus more on inclusive value-creation than, say, political inclusion or citizens' democratic rights. Within this framework, participation and inclusion are seen from the viewpoint of managerialism [D7, D8].

The city is seen in this context as a meeting place, open innovation platform, or as an open ecosystem, in which all the local actors can meet on equal terms while pursuing their own interests. This kind of facilitative and enabling activity setting is characterized as City-as-a-Service or city as a Living Lab, which revolves around co-creation. The methods of co-creation are supposed to help all players of the service ecosystem to design better environment and services. [D7, p. 5.] This reveals a kind of ecosystem logic that resembles market mechanism: the interaction between ecosystem actors is assumed to lead to either the finding of the solution to the problem or a successful launch of a product or a service. [D7.]

From a service management point of view, the approach applied by the city of Espoo emphasizes the role of enabling, encouraging, and orchestrating. It is a 'systemic' approach that focusses on the facilitation of peer networks and collaborative opportunity enhancement. It rests on the idea of shared leadership. [D7.] The other side of the coin is well designed model for open participation and the facilitation of both physical and digital environments, which brings digital platforms into the picture [D8].

5 Urban, digital, and institutional embeddedness

In the previous chapter ecosystem thinking has been described as an organizational and managerial issue. However, there is a range of contextual aspects to be taken into account when considering the preconditions for successful adoption of ecosystem thinking in public service management. In this section, these matters are discussed under three broadly defined themes, which revolve around urban, digital, and institutional aspects of ecosystem thinking.

5.1 Urbanization, critical mass, and scalability

Urban platforms that facilitate city service ecosystems are locally embedded, which poses a challenge to scaling up innovations and other service-related solutions [19]. Even if the case of Espoo shows certain degree of potential association with scaling, it is too early to assess the success or failure in this respect. In the case of Espoo, instructions for scaling up co-creation solutions have been included in the co-creation handbook [D7, p. 26-28]. The city government does not conceptualize this issue as an integrated city-level ecosystem, but rather as a constellation of multiple ecosystems, each of which have different conditions and requirements for critical mass and scaling up. Such a thinking is called City-as-a-Service (CaaS) or city-at-your-service, which emphasizes the facilitating and enabling role of the city with connections with multiple micro-environments (ecosystems) thus including varying sets of relevant actors [Sutinen, P., Personal interview, December 10, 2021].

The other issue is the utilization of the external scale economies – determined by such factors as economic densities, variations, connections, and distances – in ecosystem thinking. *The localization economies* refer to the benefits derived from the close proximity of industrial, institutional and social players within the given service ecosystem. This may materialize in urban service provision in the form of inter-municipal collaboration and in the involvement of partners and service providers in service provision within the local government jurisdiction. City governments may enhance productivity and innovation through localization economies, though the added value of ecosystem thinking remains somewhat fuzzy in this respect. In any case, the tendencies for seeking localization economies by the city of Espoo are manifest in its service ecosystem development. It is noteworthy that there is a tendency to overcome the spatial limitations of ecosystem creation via increased use of digital platforms.

Larger cities have better chances of utilizing service ecosystems, even if the relationship between the size of the city and *urbanization economies* may be non-linear [57-58]. As concluded by Turok and McGranahan, "the potential of urbanization to promote growth is likely to depend on how conducive the infrastructure and institutional settings are" [59]. In the case of Espoo, such initial conditions are fairly good. In any case, in a simplified sense, it is the larger cities or metropolises that enable urbanization economies to emerge [60].

A few implications for policymakers are worth pinpointing here. The city government's policies play an intervening role, for they mediate demand and supply, which affects urbanization economies. The underlying premise is that the larger city size

guarantees a wider and richer set of inputs, which have a potential to lower costs and increase innovativeness. However, as the urban settlements are shaped by dynamic forces and market agents, this logic should be given sufficient role as the conditioning factor that affect ecosystem building. In other words, city government's role in ecosystem building should be based on the utilization of the dynamic relations of the naturally evolving system rather than on an attempt to control it. Regarding jurisdiction size, the former is in line with the public choice principle outlined in Tiebout hypothesis [61], while the latter seeks "internalization of externalities" through the formation of the larger regional or metropolitan governance structures. One of the outcomes of this is that city governments should pay primary attention to the functioning of urban settlements and in 'fertilizing' business and innovation ecosystems rather than being obsessed neither with the population size of the metropolitan area nor their ability to control it. [60.] Espoo represents in general a public choice type orientation supported by gradually weakening localism, while at the same time in its context there are strong regionalization tendencies, most radical changes in the recent years being the health, social, and rescue services reform decided by the Finnish Government in 2021. In this sense Espoo's ecosystem thinking is evolving in an institutional setting with some underlying structural tensions.

5.2 The role of digitalization

There has been a lot of discussion about the role of digitalization in the public sector reforms. The development of Finnish local e-government started slowly in the 1960s, computerization increased in the 1980s, and the great leap took place in the 1990s due to the Great Internet Explosion. Espoo followed this trend. Since then Espoo has been promoting the digitalization of local public services, which in recent years has been organized within Digiagenda Program of 2015-2021 (https://www.espoo.fi/fi/espoon-kaupunki/innovatiivinen-espoo/digiagenda). In this area the city aims at increasing productivity and cost-effectiveness, on the one hand, and creating increasingly smooth and high-quality services, on the other. Its development efforts have been based on pilots and experiments along the principles of the culture of experimentation. (See [62].) The view of digitalization is strategic in the sense that the city sees digitalization as a leverage in local renewal, which emphasizes the effectiveness and added value of digitalization. In other words, the issue is not digitalization *per se*, but rather the underlying changes in organizational practices and culture. This connects digitalization with competence development, as the latter is essential in achieving the desired results by smart utilization of digital tools, applications, and environments [Sutinen, P., Personal interview, December 10, 2021; Sjöholm, K., Personal interview, February 7, 2022].

In Espoo, there is a high degree of openness towards new ways to doing things. Its innovation management framework emphasizes that the tools of hierarchical network management have become largely obsolete in the global age in which data, knowledge and learning have become essential for the organizational success. Most notably, digitalization will reduce transaction costs dramatically, which will have a revolutionary impact on transactions and the forms of social interaction. [D1, pp. 5-6.]

One of the consequences of this development is the dramatic change in the premises of the social organization of society, starting from the decreased utility of the economies of scale. Resources do not have to be fully controlled by an individual organization, especially regarding such resources and competences that are largely frictionless and abundantly available in the global resource pool. Digitalization will reduce the need to acquire resources inside the boundaries of the organization and rely on in-house solutions. Such a frictionlessness is likely to favor decentralized business models and smaller size of organizations, which are able to operate successfully in an increasingly dynamic competitive environment. [D1, p. 6, 13.] Practical aspects of this development have their expression in various fields of public service management, most notably in customer relationship management [D3] and service co-creation [D7], which in their ideal forms are served by digital platforms that facilitate the processes of creating and nurturing ecosystems [Sjöholm, K., Personal interview, February 7, 2022]. One of the early formations of such development is Make With Espoo innovation platform (https://makewithespoo.espoo.fi/en).

5.3   Institutional setting

Local governments are local public institutions with overall responsibility of the well-being of local inhabitants and of promoting local development. The two dimensions of this institutional setting are of vital importance when thinking about the adoption of ecosystem thinking in public service management, those of democratic governance and policy making, on the one hand, and the role of public service and administrative organization, on the other.

In the same way as there have been concerns about democracy during the previous phases of the development of the models and theories of public management and governance, the same holds with ecosystems. The best reference for an analogy is the discussion about the democratization of network governance [63]. The dilemma is that while creating and nurturing ecosystems have positive impact on public service management as they widen resource base and competences and strengthen customer and stakeholder orientation in value co-creation, large part of this kind of action takes place outside the control vested in elected representatives. As such a control would limit the managerial and professional freedoms that are practical preconditions for the materialization of the added value of service ecosystems, there is obvious need to supplement conventional democratic framework with increasingly subtle forms of citizen and stakeholder influence (cf. [8, 37, 49]). In the case of Espoo, political steering affects service development through visions, principles, and broad political objectives. Political leaders of the city neither hinder innovative service development nor attempt to intervene employees' work, which makes the city government essentially a freedom-centered organization with self-directed service units [Sjöholm, K., Personal interview, February 7, 2022].

Within the democratic system, policies are as a rule implemented through coordinated actions in a multi-actor field to address public problems and to create public value. As service ecosystems deal with multi-level issues in the sense that they include usage motivations and situations (micro), organizational arrangements (meso), and

value constellations derived ultimately from cross-contextual resource pool (macro), it poses a challenge in terms of how policy interventions affect across such value constellations [64]. These issues have been addressed in Espoo's framework documents and handbooks, which emphasize the need to strike a balance between conformism and various stakeholder-specific objectives [D1, D7].

Lastly, ecosystems thinking reflects the premises of New Public Governance, which has been evolving since the 1990s in the advanced Western countries. This approach is open for flexibility, empowerment, and wider use of community and extra-local resources, which has evolved through stakeholder, network, innovation, and service management, and is arguably developing towards platform and ecosystem management. From the point of view of service management, one of the key issues is how ecosystem thinking matches with the Public Service-Dominant Logic (PSDL) [65]. In this sense there is a far-reaching tension built in this setting. Namely, while service science has contributed to the understanding of the role of service users or customers as co-creators of value and as actors that ultimately determine the value of service, the very existence of the public value as a framing value concept is rooted in democratic control executed primarily by the representative system of government. Thus, the issue of the creation of public value, as vague as it has proved to be, becomes an inherent part of the puzzle of the value creation in public service ecosystems, determining how the selected aspects of 'common good' in the context of the given service benefit all sectors of society through categories rooted on subsystems of society (cf. [66]). In fact, moving away from NPM paradigm points to the direction, which naturally increases the complexity of the value perspective on public services [67-69].

6 Conclusion

This article discusses the evolution, manifestations, and impact of ecosystem thinking in the Nordic tech-savvy city, the case being the city of Espoo in the capital region of Finland. Espoo is an innovation, technology, and business oriented city with Aalto university as its signature institution. Its involvement in ecosystem thinking developed primarily within Six City Strategy collaboration with other five large Finnish cities, which evolved during the latter half of the 2010s. Its approach has a genuine urban entrepreneurial and managerial tone. Adoption of ecosystem thinking is asynchronous process in the sense that different units have different preconditions and needs for the utilization of ecosystems in their service development.

Regarding local embeddedness of ecosystem thinking, Espoo has a fairly high degree of institutional thickness, well-developed business community, and sufficient population base. Its proximity to Helsinki and integration into the wider Helsinki Metropolitan Area supports the generation of urbanization economies. It seems that Espoo has in this sense good preconditions for the utilization of ecosystem thinking, even if the population of the city proper is only some 300,000.

The focus in Espoo's ecosystem approach is on "the social" in the sense that the precondition for success with ecosystems lies in openness, shared understanding of the common good, and smooth institutional relations. This implies that digitalization is not

the framework through which this agenda is designed. However, digitalization has entered this agenda naturally through platformization, as seen in the establishment of platforms that facilitate locally rooted innovation ecosystems.

Finnish cities have been eager to adopt new management and governance models, and ecosystem thinking makes no exception. It fits well with the long-lasted development towards New Public Governance, which focuses on the utilization of the resources and competences of the local community and also of the wider environment. The need for democratic control over ecosystem development is a matter yet to be addressed much the same way as the issue of network governance. The decreased publicness of public administration may have happened in Espoo as in most other Western cities, yet it is compensated to a degree by a broad involvement of the members of the urban community in local policy making and development processes, through which the seeds have been planted for the emergence of decentralized forms of real-life ecosystem democracy that operates within the broader framework of representative system of government.

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Appendix 1. List of analyzed documents of the city of Espoo

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D3. Asiakkuusperustaisen tietojohtamisen viitekehys. [The Framework for Customer-based Knowledge Management]. The city of Espoo. Retrieved September 29, 2021, from https://static.espoo.fi/cdn/ff/LXvbTblesC6kU3S0HebLk-bMgrPam6kU8vfe8H5wsFqE/1629273361/public/2021-08/viitekehys_Asiakkuus-perustaisen_tietojohtamisen_viitekehys_ei%20saavutettava.pdf

D4. Asiakkuustiedon tuottamisen ja hyödyntämisen käsikirja. [The Handbook of the Production and Utilization of Customer Knowledge]. The city of Espoo. Retrieved September 29, 2021, from https://static.espoo.fi/cdn/ff/Xj2nMquFKTANMZfRKBHFWXu-oUBw9Mun5upUPS7LJtvY/1629460848/public/2021-08/k%C3%A4sikirja_Asiak-kuustiedon_tuottamisen_ja_hy%C3%B6dynt%C3%A4mi-sen_k%C3%A4sikirja_ei%20saavutettava.pdf

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D7. Yhteiskehittämisen käsikirja. [The Handbook of Co-creation]. The city of Espoo. Retrieved September 29, 2021, from https://issuu.com/espoonkaupunki/docs/yhteiskehittaminen-a4-web-issuu

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Appendix 2. List of expert interviews

Sutinen, Päivi, Director for City as a Service Development, City of Espoo, interviewed by Ari-Veikko Anttiroiko and Kaisu Sahamies on December 10, 2021.

Sjöholm, Katja, Senior Innovation Ecosystem Manager and Head of Co-creation and Innovation, City of Espoo, interviewed by Ari-Veikko Anttiroiko on February 7, 2022.