

Organizational motivations for joining the national healthcare and social welfare AI innovation ecosystem

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Abstract

Innovation ecosystems are recognized as significant actors in promoting the adoption of digital innovations, such as artificial intelligence (AI). This study examines the organizational motivations for participating in Finland's government-led AI innovation ecosystem for healthcare and social welfare, which was established by the Ministry of Social Affairs and Health in 2024. The research addresses two questions: (RQ1) What motivates organizations to join a government-led healthcare and social welfare AI innovation ecosystem, and what are the key mechanisms behind joining? and (RQ2) How do different types of organizations perceive and seek value within this ecosystem? Employing a theoretical framework that combines innovation systems theory and ecosystem theory, this study analyzes data from ecosystem member organizations (N=166) collected via an online questionnaire during the ecosystem's initial four months, from June to September 2024. Five key interconnected mechanisms driving participation were identified: (1) knowledge synergy, (2) resource allocation, (3) legitimacy enhancement, (4) regulatory influence, and (5) societal impact. These mechanisms interact in systemic ways, with each supporting and reinforcing others when present, while their absence can constrain ecosystem engagement. Private companies focus on market opportunities, public organizations prioritize organizational improvements and efficiency, and research institutions emphasize knowledge development alongside practical applications. The research contributes to the theoretical understanding of government-led innovation ecosystems, particularly for advancing AI development in public healthcare and social welfare, and offers insights for designing and managing such initiatives.

Keywords: artificial intelligence, delivery of health care, motivation, health services, ecosystem

Introduction

Government-led national innovation ecosystems are emerging as a potential solution for coordinating the development and implementation of artificial intelligence (AI) solutions in the healthcare and social welfare [1–4]. This study defines an innovation ecosystem as a coordinated network of public,

private, and third-sector entities that pursue shared objectives related to specific innovation [5–7]. Innovation ecosystems in public healthcare and social welfare are complex due to diverse stakeholders, regulatory requirements, and the need to balance technological advancement with ethical considerations and social responsibility [7].

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In Finland, the Ministry of Social Affairs and Health launched a national AI ecosystem for healthcare and social welfare ("SOTE-tekoälyn ekosysteemi") in the summer of 2024. This represented a strategic effort to accelerate the responsible and effective adoption of AI while ensuring public value creation in this societally critical sector. The Finnish national AI ecosystem is an informal network led by the Ministry, involving authorities, companies, NGOs, and researchers, and includes over 200 member organizations aiming to facilitate, enable, and fund AI utilization [8].

Despite growing academic focus on AI-related research in healthcare and social welfare [9–12], there remains a research gap regarding organizational motivations for engaging in government-led national AI initiatives [13]. Understanding these drivers is important for both theoretical advancements and the practical sustainability of such ecosystems.

Theoretical framework

This study employs an integrated theoretical framework combining innovation systems theory (IST) [14,15] and ecosystem theory [6,16] to examine organizational motivations within Finland's government-led AI ecosystem for public healthcare and social welfare [17].

IST provides a macro-level perspective on institutional roles and policy influences, emphasizing how innovation emerges from interactions among diverse actors within institutional frameworks through knowledge flows and interactive learning. The functional approach within IST [18,19] analyzes how government interventions fulfill specific functions within innovation systems.

Ecosystem theory offers a meso-level perspective for examining networks of interdependent actors

who co-create value [6,16], emphasizing the interdependence of actors, ecosystem orchestration, and diverse organizational roles. It enables analysis of the Finnish initiative as an interactive network, highlighting value dynamics, resource access, and governance influences.

This integrated framework enables exploration of the government's orchestrator role and varying organizational value perceptions.

The research questions of this study are:

RQ1: What motivates organizations to join a government-led healthcare and social welfare AI innovation ecosystem, and what are the key mechanisms behind joining?

RQ2: How do different types of organizations perceive and seek value in this government-led innovation ecosystem?

This research contributes to the theoretical understanding by examining the interplay between IST and ecosystem theory in public sector AI development, while providing policymakers and organizational leaders with actionable insights for managing collaborative innovation initiatives. The Finnish context offers a suitable setting, characterized by strong public sector healthcare leadership [20] and a focus on complex AI applications that require public oversight and private innovation [21].

Materials and methods

Case introduction

Finland's national ecosystem for AI in healthcare and social welfare was established by the Ministry of Social Affairs and Health in June 2024, involving over 200 member organizations [8]. The ecosystem operates through hybrid governance with the Ministry providing strategic direction and key

institutional actors forming a coordination group (including the Finnish Institute for Health and Welfare (THL), the Hospital District of Helsinki and Uusimaa (HUS), and publicly owned companies).

The ecosystem's objectives include three interconnected domains: enhancing service quality and professional support, improving productivity, and generating business opportunities. This strategy embodies the dual aspects of public sector innovation, merging societal benefits with economic value generation. The ecosystem advances these goals through coordinated projects, funding opportunities, knowledge-sharing actions, research partnerships, and policy development efforts.

Research design and data sources

This study employs a qualitative descriptive single-case study design [22]. Qualitative descriptive methodology was chosen to provide an understanding of organizational motivations and value perceptions without predetermined theoretical categories. The single-case study approach enables an in-depth examination of ecosystem participation within real-world settings, facilitating analysis at both ecosystem and organizational levels while allowing comparisons among various participant organizational types.

The primary data source comprises membership applications from 166 organizations that applied to join the ecosystem during the first four months of operation, from June to September 2024, yielding 175 individual responses. Concentrating on the ecosystem's early development phase allows capturing fundamental motivations and initial relationship building before institutional patterns become established. These membership applications were collected through an online application form containing multiple fields. The primary open-ended question asked: *"Why do you [as an organization]*

want to join the social and healthcare AI ecosystem?" This question yielded rich qualitative data on motivations and expectations (4,187 Finnish words total). Additional form fields included organizational type (with predefined categories), organization name, contact information, and a secondary open-ended field for *"Free-form message or feedback to the ecosystem organizers"*, which provided supplementary contextual information.

Secondary research data included official ecosystem documentation, strategic plans, operational guidelines, and public announcements, establishing the institutional context and formal objectives.

Data analysis

The online questionnaire data were analyzed using descriptive statistical methods for quantitative information and through iterative coding for qualitative responses. Quantitative analysis included percentage distributions across different categories to examine patterns in organizational characteristics, participation motivations, and perceived value expectations.

For qualitative data, a systematic coding approach was employed, combining deductive elements from the theoretical framework with inductive elements derived from empirical data. The analysis proceeded through three stages using Atlas.ti software.

First, initial coding employed theory-derived codes from IST and ecosystem theory while remaining open to emergent themes. The theoretical framework served as an analytical lens, allowing inductive codes to emerge that the framework did not anticipate directly (e.g., legitimacy enhancement, regulatory influence).

Second, cross-case comparison examined relationships between organizational characteristics and

motivation patterns, identifying variations and commonalities across organizational categories. This analysis focused on how contextual factors influenced stated motivations.

Third, interpretive analysis identified underlying causal mechanisms through iterative abstraction consistent with critical realist methodology [23], moving from empirical observations toward identifying generative mechanisms. The analysis examined how these mechanisms operate differently across contexts and organizational types, reflecting the interplay between institutional structures and ecosystem properties.

Data saturation was assessed through iterative analysis, with no new motivational themes emerging after analyzing approximately 100 organizational responses.

Ethics

This study did not require formal ethics board approval under Finnish research ethics guidelines, as it analyzed publicly submitted organizational application data rather than personal data or research involving vulnerable populations. All participating organizations provided informed consent for their application data to be used for ecosystem development and research purposes as part of the membership application process. The research focused exclusively on organizational motivations and characteristics rather than individual personal information. The data consisted of institutional responses regarding organizational goals and strategies, with no collection of sensitive personal data. Organizational anonymity has been maintained in all reporting.

Results

Data analysis from 166 organizations joining the Finnish AI ecosystem during its initial four months reveals key insights into participation motivations and value perception patterns. Private companies constituted the largest group (45%), followed by professional associations/NGOs (15%), healthcare regions/wellbeing services counties (12%), research/educational institutions (11%), government agencies (7%), and others (10%).

RQ1: Organizational motivation mechanisms

Five distinct, yet interconnected, mechanisms were identified as driving organizational participation in the government-led AI ecosystem: (1) knowledge synergy, (2) resource allocation, (3) legitimacy enhancement, (4) regulatory influence, and (5) societal impact. These five mechanisms interact systematically with one another. For instance, knowledge synergy supports effective resource allocation, while legitimacy is linked to regulatory standing.

The knowledge synergy mechanism emerged as a fundamental driver of ecosystem participation, enabling organizations to share and create new knowledge through systematic interaction. This mechanism relates to the ecosystem's capacity to foster collaborative learning, knowledge exchange, and the combination of diverse expertise across organizational boundaries. Organizations are motivated by the potential to access complementary knowledge assets and engage in joint problem-solving that would be difficult to achieve independently. The mechanism is fueled by the strength of knowledge growth achieved through interdisciplinary collaboration, with organizations frequently citing the value of networking, experience sharing, and collaborative development. Knowledge synergy appears particularly significant for technology companies and research institutions seeking to

enhance their capabilities through diverse perspectives and specialized expertise, though its appeal spans across all organizational types.

"In the ecosystem, we can exchange lessons: good and bad experiences with other ecosystem members and possibly plan joint experiments and development projects" (Wellbeing services county, R147)

The resource allocation mechanism enables organizations to share resources (including financial capital, technical infrastructure, human expertise, and valuable data sets) through ecosystem participation, with access to funding emerging as a particularly critical. Several organizations explicitly identified the acquisition of financing as a primary motivation for participation. This mechanism strategically pools and distributes limited resources through the collaborative ecosystem structure. Organizations benefit from efficiency gains through economies of scale, expanded scope capabilities, and joint investment opportunities that would be unattainable individually. The mechanism proves particularly significant for wellbeing services counties and smaller organizations facing resource constraints. The ecosystem functions as a financial leverage mechanism, where collaborative funding approaches reduce individual organizational costs while enabling access to larger-scale AI development projects. Private companies value this mechanism for expanding their customer base.

"Promoting funding acquisition to support the development of artificial intelligence for organizational needs" (Wellbeing services county, R150)

The legitimacy enhancement mechanism builds organizational credibility and trust through ecosystem association. This mechanism operates by conferring institutional validation, reputational

benefits, and quality assurance through formal affiliation with the government-led initiative. Organizations leverage this association to signal legitimacy to stakeholders, customers, and regulatory bodies within the highly regulated healthcare sector. For established companies, ecosystem participation reinforces market position and demonstrates commitment to national digital health priorities. Meanwhile, startups and smaller enterprises gain credibility that typically requires years to develop independently. The mechanism creates a mutually reinforcing legitimacy exchange, where public sector validation enhances the trustworthiness of the private sector, while innovative private sector participation strengthens the public sector's innovation credentials.

"As a notified body, we evaluate AI applications used in medical devices" (Private company, R91)

The regulatory influence mechanism enables organizations to shape and influence regulatory frameworks through collective participation. This mechanism operates by creating a structured platform that allows diverse stakeholders to collaborate with policymakers, facilitating navigation of the complex and evolving regulatory landscape for AI in healthcare. Organizations gain amplified influence through collective representation, accessing policymaking channels that would be difficult to engage with individually. The mechanism is particularly valuable given the rapidly developing healthcare AI regulatory environment, including national frameworks and European AI regulations. Organizations explicitly expressed concern about regulatory barriers to innovation and the need for practical, balanced approaches to governance. Industry associations, technology companies, and wellbeing services counties all demonstrated interest in this mechanism, recognizing that regulatory

harmonization is critical for successful AI implementation in the healthcare context.

"The EU legislation that will emerge in the coming years will probably only worsen the situation, and we want to contribute to creating more sensible legislation" (University research group, R16)

The societal impact mechanism motivates organizations to create broader social value through their participation in ecosystems. This mechanism reflects an organizational commitment to addressing complex societal challenges through collaborative innovation, extending beyond immediate commercial or operational goals. Organizations are driven to contribute to healthcare system improvement, population wellbeing, and social sustainability through the ecosystem's collective capabilities. The mechanism connects organizational actions to systemic outcomes, including improved healthcare accessibility, enhanced service quality, and solutions for demographic challenges such as an aging population. While particularly evident among public sector entities with explicit social mandates, this motivation also frequently appears in private sector responses, where companies integrate societal impact with business objectives.

"We want to participate in developing a better tomorrow and be involved in solving challenges related to the sustainability gap and population aging" (Private company, R145)

RQ2: Value creation patterns

Different organizational types perceive and pursue value within the ecosystem in distinct yet complementary ways, reflecting their institutional roles and missions and demonstrating how institutional and ecosystem perspectives intertwine. Despite organizational differences, common themes of value

creation unite participants within the ecosystem. Foremost is the emphasis on collaborative value creation, with organizations recognizing that healthcare AI challenges require coordinated cross-sectoral efforts. A second unifying theme is a commitment to improving the national healthcare system, reflecting a shared vision of AI as an enabler for service enhancement. Organizations recognize that individual success connects to ecosystem health, creating approaches that balance organizational objectives with collective outcomes.

Private sector organizations demonstrate a distinctive approach to value creation, with a dual focus on both commercial and societal benefits. Companies strategically pursue business value through market expansion, product development, and enhancement of competitive advantage, while framing their motivations in terms of broader public social and healthcare system improvements. Their value creation strategies emphasize technological innovation and the development of solutions that enhance productivity and efficiency. These organizations value the ecosystem for market development opportunities, allowing them to identify potential customers and refine their offerings based on real-world requirements. Private companies often position themselves as problem-solvers, addressing organizational level challenges while pursuing commercial objectives.

"We hope that through the ecosystem we could find public and private sector actors with whom we can further develop our products and find new business models" (R41)

Public sector organizations demonstrate a value creation approach primarily focused on organizational-level improvements and efficiency enhancements. These entities (particularly wellbeing services counties) prioritize operational effectiveness, service quality optimization, and productivity gains

through AI adoption. Their value proposition centers on enhancing public service delivery through technological innovation while efficiently managing constrained resources. Public organizations strategically leverage the ecosystem to facilitate collaborative development opportunities and knowledge sharing. This collaborative approach allows them to implement solutions that address complex service challenges while improving accessibility and quality. The focus on organizational-level value creation reflects the public sector's broader mandate to enhance service provision while managing fiscal constraints.

"[AI is] an absolute prerequisite for increasing productivity" (Wellbeing services county, R71)

Research and educational organizations employ a value creation approach that bridges academic knowledge development with practical applications. These institutions position themselves at the intersection of theoretical advancement and real-world implementation, creating value through the bidirectional flow of knowledge between research and practice. Their value proposition emphasizes strengthening research and development activities related to healthcare AI, developing relevant educational curricula that address industry needs, and providing a critical link between theoretical advancements and practical implementations. These organizations view the ecosystem as an opportunity to enhance the relevance of their research agendas and educational offerings while contributing specialized expertise to practical challenges.

"We are interested in adding content to our degree education, our continuous learning offerings, and our project activities" (University, R18)

Industry associations and non-governmental organizations adopt a value creation approach centered

on ecosystem-level influence and development. These organizations position themselves as sector-wide representatives and facilitators, creating value through their ability to shape regulatory frameworks, industry standards, and collaborative practices. Their distinctive contribution lies in aggregating diverse organizational perspectives into collective action, particularly in influencing policy development and regulatory processes where individual organizations have limited impact. Industry associations specifically advocate for enabling regulatory environments that balance innovation with appropriate safeguards, while NGOs often emphasize the inclusion of ethical, accessibility, and social dimensions in technological development. Both entity types serve essential bridging functions, connecting ecosystem participants with external stakeholders, including policymakers, international bodies, and broader civil society, thereby enhancing the ecosystem's legitimacy, coordination capacity, and societal alignment.

Discussion

By integrating IST and ecosystem theory, this research deepened the understanding of institutional forces and network dynamics in public sector technological transformation. The five identified mechanisms support and extend existing theoretical perspectives.

The knowledge synergy mechanism aligns with IST's interactive learning emphasis [15] and the ecosystem theory's knowledge co-creation focus [6], while specifying its operation in AI innovation contexts where technical and domain knowledge must align.

The resource allocation mechanism provides new insights into public-private partnerships in AI contexts. While previous research emphasized formal institutional arrangements [14], these findings show that resource allocation also occurs through

informal ecosystem relationships [16]. This hybrid nature extends mission-oriented innovation work by demonstrating how public and private resources combine through formal and informal channels [24,25].

The legitimacy enhancement mechanism adds dimensions to trust-building theories. While prior work has focused on market-based legitimacy [26], these findings reveal that legitimacy in government-led ecosystems operates through both institutional and market mechanisms, particularly relevant for AI in healthcare, where trust has both technical and social dimensions [27].

Organizational value perception findings contribute to debates on value creation. While previous research treated public and private values separately [28,29], these results demonstrate their intertwining in AI innovation, supporting mission-oriented innovation ecosystem work [21] while extending it by illustrating how different organizational types practically combine these values.

The institutional-ecosystem interaction adds nuance to innovation system governance theories. While some emphasize formal structures [30], these findings suggest complex formal-informal coordination interplay, extending ecosystem governance work by showing how institutional and ecosystem governance can coexist and complement each other [31].

Limitations and future research

This study has several limitations. First, focusing on the ecosystem's early stage (the first four months) provides only a snapshot of an evolving phenomenon, limiting our understanding of longitudinal patterns. Second, the single-country context (Finland) constrains direct generalizability to other national contexts, though identified mechanisms may be

applicable elsewhere with varying relative importance. Third, relying on membership application responses introduces potential self-selection bias and socially desirable reporting, which may exclude critical perspectives. Fourth, the focus on formal organizations might underrepresent informal networks and individual actors in ecosystem development.

Fifth, artificial intelligence introduces characteristics differentiating this ecosystem from other healthcare technologies. AI's rapid evolution intensifies the knowledge synergy mechanism. The EU AI Act amplifies regulatory influence beyond traditional medical device regulations. AI's dataset dependence creates distinctive resource allocation dynamics, and AI's "black box" characteristics introduce unique legitimacy challenges, requiring algorithmic fairness and explainability. These AI-specific characteristics suggest that while the five identified mechanisms may apply to other technology-focused ecosystems, their relative importance varies across technological domains.

Future research should examine the development of longitudinal mechanisms, conduct international comparative analyses, and investigate how ecosystems incorporate citizen perspectives.

Practical implications

The findings provide practical guidance for developing government-led AI innovation initiatives in healthcare and social welfare. Policymakers should design programs that support all five identified mechanisms through knowledge exchange platforms, inclusive funding mechanisms, clear governance frameworks that balance credibility with innovation flexibility, regulatory communication channels, working groups, and systematic impact measurement. These actions all require comprehensive communication measures, such as social

media platforms, websites, online and offline events and meetings, and email newsletters.

Effective ecosystem management requires addressing long-term sustainability challenges. While government leadership provides essential initial legitimacy and coordination, thriving ecosystems must transition toward distributed governance models. Ministerial funding and coordination attract participants but create dependency relationships that may constrain evolution. Ecosystem maturation requires participants to assume increasing responsibility for strategic direction, resource mobilization, and outcome evaluation. This transition from government-led to stakeholder-driven governance is crucial for sustainable national AI innovation ecosystems.

Conclusions

This study advances understanding of government-led AI innovation ecosystems in healthcare and social welfare by extending IST and ecosystem theory. Five interconnected mechanisms (knowledge synergy, resource allocation, legitimacy enhancement, regulatory influence, and societal impact) drive participation, revealing how formal and informal processes combine to attract diverse participants.

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Organizations navigate dual institutional and ecosystem logics differently: private companies balance market opportunities with public value, and public organizations prioritize systemic improvements at the organizational level. At the same time, research institutions bridge the gap between theoretical and practical knowledge.

These findings suggest that a more nuanced theoretical understanding is needed regarding how organizations balance institutional pressures with ecosystem opportunities. Successful AI implementation requires policymakers to facilitate diverse motivations while maintaining ecosystem adaptability and resilience.

Conflict of interest statement

The author discloses that he served as the coordinator of the AI ecosystem from May 2024 to March 2025.

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