



## **Taming Complexity – Communication Management in Innovation Ecosystems**

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## Abstract

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<p>In the past two decades, the organizational innovation and development activities have increasingly shifted from internal practices towards open collaboration and knowledge sharing. This has opened new opportunities for collaboration in innovation ecosystems, which are emerging forms of meta-organizational entities where different actors can jointly solve challenges and generate products and services that exceed the capabilities of any individual organization.</p> <p>The work in innovation ecosystems is based on voluntary cooperation and common goals. Existing research indicates that the communication plays a key role in successful ecosystem orchestration, but knowledge over ecosystems' communication management practices is either non-existent or not publicly available. This thesis explores the ecosystem communication management through qualitative multiple case study conducted within a selected group of innovation ecosystems. Data related to ecosystem management, communication, and strategies was collected via semi-structured interviews and analysed through thematic content analysis.</p> <p>Previous research suggests that the ecosystems are characterized by elementary uniqueness, and the findings of this thesis support this observation. The ecosystems are forming their own ways of working based on what is most beneficial for the ecosystem actors. The case study revealed that the ecosystem coordinator has a significant role in creating ecosystem's practices and operating models. Communication is acknowledged as a key-element in ecosystems' success, but the communication management in studied innovation ecosystems is rather intuitive and non-systematic. Clear connection between communication actions and strategic targets does not exist.</p> <p>The study contributes to existing literature by illustrating the connection between the previously recognized ecosystem dynamics and structures and practical communication activities. As a novel contribution to existing research, this study presents an ecosystem communication process that can be used as communication management tool in innovation ecosystems. The tool is based on defining the ecosystem specific features and their effect on communication emphasis, and mapping communication actions in terms of focal elements related to ecosystem success, which are high level of mutual trust, coherency, and favourable stakeholder relationships.</p>
<b>Keywords</b> innovation ecosystems, communication management, network communication

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# 1 Introduction

The time we live in has been described as an era of surprise and uncertainty. The challenges our society is facing, such as ecological sustainability crisis, ageing populations, and global inequalities, are complex and particularly difficult to solve. These challenges, also known as wicked problems, are unique by nature and usually involve a large number of factors and variables, which means that solution models cannot be directly transferred from one problem to another. (Dufva and Rekola, 2023; Sitra, 2023.) It has become evident, that no organization alone can offer solutions or create innovation that would tackle the complexity in full.

In consequence, the answer is increasingly sought from collaboration and joint problem solving. In the past two decades, researchers and organizations have growingly realized that innovation and development activities can be accelerated by collaboration and knowledge-sharing. Organizations' interest has shifted from internal and centralized RDI-practices towards open innovation, which has enabled the development of innovation ecosystems in various fields. (Rinkkala *et al.*, 2019, p. 7.) Innovation ecosystems are an emerging form of meta-organizational entities, where different actors can jointly solve challenges. They aim for effective use of technologies and assets by voluntary co-operation that supports co-creation or knowledge-sharing on certain field or topic. Successful innovation ecosystems are forming if the cooperation is seen mutually beneficial – even if the organizations within the ecosystem might be competitors in some markets. (Guilhon, 2017, p. 12.)

The advantage of innovation ecosystems lies in multilateral collaboration: actors complement each other's expertise and capabilities, which speeds up the innovation and development of products and services. Innovation ecosystems are expected to boost economic growth and to play key role in the renewal and productivity in economy as well as its ability to generate wellbeing. They also produce better operating models and provide a favorable basis for multidimensional use of technologies. For involved organizations, innovation ecosystems are one way of creating and capturing value. (Valkokari *et al.*, 2021; Thomas and Autio, 2019.)

In the national 2030 vision by The Research and Innovation Council Finland, the general target for Finland is to become the most attractive and competent environment for experimentation and innovation. The roadmap for the vision includes an aim for several business-run billion-euro growth ecosystems producing competitive solutions to answer global needs. Reaching this goal requires rapid growth in competence for ecosystem leadership and orchestration. (Rinkkala *et al.*, 2019, pp. 3-4.) Ecosystems bring together a variety of actors and their unique set of skills, resources, technologies, and solutions. Orchestrating the needs and expectations of the heterogenous group of actors is critical for the ecosystems to succeed. (Valkokari *et al.*, 2021, p. 11.) Unlike traditional organizations, ecosystems as such do not have hierarchical power structures. Instead, the

ecosystem management is based on market mechanisms, mutual trust, and interdependency of ecosystem actors (Vesalainen, Valkokari and Hellström, 2017).

In this thesis, I study innovation ecosystems from communication management perspective, and more specifically, through concept of strategic communication. In organizational context, communication is typically seen as a function, that creates favorable basis for relationships with stakeholders and other groups upon which the organization is dependent. Communication management produces and leads communication excellence that differentiate the organization from its competitors (Cornelissen, 2020, p. 5; Tench *et al.*, 2017). Strategic communication is a paradigm that sees communication as a way for organization to improve its strategic positioning, but also as a constitutive feature of all organizations. In strategic communication a communicative perspective is applied to all organizational processes, and it is acknowledged, that communication happens between all the representatives of an organization and in all interactions with its stakeholders. (Falkheimer and Heide, 2018, pp. 71-73.)

Most of the previous ecosystem research focuses on mapping ecosystem networks, structures and models instead of roles and operative actions within the ecosystem (Laasonen *et al.*, 2022). The ecosystem research in general is fragmented (Thomas and Autio, 2019), and comprehensive understanding of the factors that are specific to ecosystem communications do not exist. Previous innovation ecosystem research implies that shared values, commitment and communications are important factors for the sustainability and success of an ecosystem (Valkokari *et al.*, 2021, p. 4). Ecosystems are also competitive actors that aim to outperform their rivals by superior mutual strategic and operational fit (Vesalainen, Valkokari and Hellström, 2017, pp. 2-3).

As a result, ecosystems are expected to communicate in ways, that are closely similar to traditional organizations: internally to enhance the collaboration between the ecosystem actors, and externally to reach the important stakeholders. The question is, how communication activities in multilateral, meta-organizational entities that lack hierarchical power and are founded on inter-dependencies, should and could be managed in practice?

## **1.1 Objective and scope of the study**

This thesis aims to increase the understanding of ecosystem structures, practices and perceptions that affect ecosystem communications, and to create an instrument to assess and plan communications in innovation ecosystems. The main objectives for this thesis are to develop a conceptual framework that forms a background for studying communication management in innovation ecosystems and to find ways to apply the framework into practical use.

I aim to fulfil the objectives by answering the following research questions:

- 1) How are innovation ecosystems organized and managed?
- 2) How is communication planned and managed in innovation ecosystems?
- 3) What is the role of communication in reaching the ecosystems strategic targets?

The relevant information of the topic will be acquired via literature review and a case study. In the case study, the aim is to observe and analyse the approaches, that innovation ecosystem professionals have on management, communication, and strategy in their ecosystem, and reflect the results on existing scientific literature regarding ecosystems, strategic communication, and communication management. The case study focuses on eight ecosystems in which professionals representing VTT Technical Research Centre of Finland have central role. Based on the literature review and data collected via case study, I present a summary of the current state of communications and management practices within the studied innovation ecosystems, and a tool developed for ecosystem communication management.

The ecosystem concept has been adopted within different disciplines rather widely and dissonantly, which results in a variety of scholarly emphases and interpretations (Thomas and Autio, 2019). In this study, innovation ecosystems are observed through the theories within the field of management and innovation studies. Strategic communication has also several different partially overlapping meanings, of which this thesis refers to all types of goal-oriented communication initiated by organizations to address any kind of stakeholders and audiences (Zerfass *et al.*, 2018, p. 488).

## 1.2 The empirical context

The ecosystem practices and experiences are collected by interviewing professionals in leading roles in innovation ecosystems that are mainly or partly orchestrated by VTT Technical Research Centre of Finland. For research organizations, the innovation ecosystems are interesting in both scientific and policy perspective: they create opportunities for new scientific innovation, but also enhance cooperation between research and public and private actors (Valkokari *et al.*, 2021, p. 4).

Aside the practical and academic interest, the policymakers' attention towards innovation in networks and ecosystems has been rising during recent years. Innovation ecosystems are recognized to have an important role in the implementation of innovation and industrial policies at the national, regional and EU levels (Laasonen *et al.*, 2022, p. 12), and are widely included into the funding schemes and strategies of policymakers. Multilateral collaboration and co-innovation practices have become a requirement in several forms of public funding (EU, 2022a; EU, 2022b; BusinessFinland, 2022).

At VTT, the work within innovation ecosystems was highlighted in the organization's overall strategy in 2018, and in 2020 co-creation in impactful innovation ecosystems was defined as one of the main targets of the year. Several VTT-led innovation ecosystems were initiated in different fields to experiment the practical implementations of the concept. Ecosystems were founded around topics with high innovation potential, good national competences, and global importance – such as smart energy systems and buildings, circular economy, and process technology. The drivers behind each innovation ecosystem are unique, and the differences in scope, network size, funding systems and resources have resulted in a variety of different ecosystem practices.

In summer 2022, when interviews for this study were conducted, VTT was involved in orchestration of at least 19 different innovation ecosystems. Out of these, eight ecosystems were chosen for the case study based on their recent activities and proven results of ecosystem collaboration.

### **1.3 Structure of the thesis**

The thesis consists of six chapters, that present the offset of the study, the theoretical background, research methodology and implementation, the results of the case study, the tool developed based on the research, and the conclusions. The theoretical background of innovation ecosystems and strategic communication is discussed in the second chapter of the thesis. The chapter introduces the ecosystem and strategic communication related paradigms and concepts that are relevant to understand the research findings and clarifies the relationships between them in the context of the thesis. The theoretical part will also touch on network management, strategy, and communication management, that are strongly related to practical implementations of innovation ecosystems and strategic communication.

Chapter three illustrates the research design and methodology, followed by the description of data collection and analysis. It presents the reasoning behind the chosen methods, explains the research design and process of the case study, and concludes in trustworthiness and limitations of the study. The chapters four and five form the empirical part of the thesis, presenting the findings and the ecosystem communication management tool. The findings are presented in sub-chapters that follow the structure of the research questions and are followed by discussion. The chapter five proposes a model process that acts as a tool for ecosystem communication management. The tool draws together the key-elements from theoretical background and the results of the case study and applies them into practice. The conclusion chapter summarizes the thesis, presents main conclusions and key take-aways, and suggests topics for the future research.

Instead of the Haaga-Helia referencing model, in this thesis I am using EndNote citation management tool in reference style Cite Them Right - Harvard.

## 2 Background

This chapter aims to provide a comprehensive theoretical foundation for the case study and ecosystem communication management tool proposed later in the thesis. The theoretical framework is compiled by studying the literature related to innovation ecosystems and strategic communications, focusing on the fields of management and innovation studies and communication studies. The first subchapter focuses on ecosystem concepts and management models, and second subchapter describes communication theories related to strategic communication and communication management.

### 2.1 Ecosystems in management and innovation studies

In the field of business and innovation, ecosystems are understood as meta-organizational networks with a common aim: collectives of heterogeneous yet complementary organizational actors, who jointly create system level output that extends the outputs and activities of any individual participant of the ecosystem (Thomas and Autio, 2019, p. 2). They are a systemic, complex, and dynamic multi-agent phenomenon, that can be defined through three prominent aspects:

- They include various cross-sectoral actors that are connected by common goals.
- The interactions of these actors are not subject to formal power and cannot be simply decomposed into singular direct or indirect ties.
- The performance of an ecosystem is both dependent on and affects the performance of individual actors. (Han *et al.*, 2022, p. 2.)

The scientific literature is, however, fragmented when it comes to more detailed definitions. The research around ecosystems has not yet reached theoretical maturity, and ecosystem concepts have been adopted by a wide variety of scholarly perspectives, with varied phenomenological and conceptual emphasis. (Thomas and Autio, 2019, p. 2.) In this review, I will be focusing on the ecosystem research in the field of management and innovation sciences, where the topic has been studied most vastly (Laasonen *et al.*, 2022).

James F. Moore's article in Harvard Business Review in 1993 is often cited as a foundational text when it comes to ecosystems and understanding the 'ecological' approach to contexts in which the businesses compete and collaborate (Thomas and Autio, 2019). In the article, Moore (1993) presents business organizations in allegory to nature ecosystems, that rely on symbiosis of different species. According to Moore, companies that create a thriving collaboration network, an ecosystem, around themselves and lead it to the desired direction, will outperform the competing ecosystems. Moore's notions about ecosystems were rather vague and somewhat unclear, and the scholars developing the ideas further have applied the concept in various ways (Thomas and Autio,

2019, p. 7). Moore's approach is business-centric and emphasizes the role of a focal firm that drives the collaboration and leads the ecosystems development (Moore, 1993). Later the ecosystem-thinking has been applied to less business-centric and more diverse collaboration in different operating environments. In their comprehensive review of the ecosystem concept, Masaharu, Yuya and Yoichi (2018) indicate that there are four major research streams of ecosystem approaches in the field of management of technology and innovation: industrial ecology perspective, business ecosystem perspective, platform management perspective and multi-actor network perspective.

In the industrial ecology perspective, the concept of natural ecosystem is seen as an analogy for understanding the industrial system and its transformation. In this approach one of the clear objectives is to realization of sustainable industrial systems in the real world: optimizing material and energy flows by using the model of sustainable ecosystem in unsustainable industrial systems. (Masaharu, Yuya and Yoichi, 2018, pp. 51-52.) Business ecosystem perspective focuses on business context and sets value creation and / or value capture as central variables of ecosystem operations. The purpose of this research stream is to reveal the dynamics and patterns of ecosystems and organizational behavior. The researchers of this stream focus on business networks and analyzing the mechanisms behind them. (Masaharu, Yuya and Yoichi, 2018, pp. 52-53.)

The third research stream, platform management perspective, is also focused on business players, but most of it studies the dynamism and mechanisms of external industry platforms. The platforms are typically products, services or technologies that act as a foundation upon which the members of innovative business ecosystem can develop their own products, technologies, and services. Empirical studies in platform management ecosystem approach are mainly investigating the IT industry. (Masaharu, Yuya and Yoichi, 2018, p. 53.) The fourth identified research stream is called multi-actor network perspective. As the other streams observe mainly the networks and relationships between private companies, multi-actor network perspective expands the view to include various actors from end-users to private investors and governmental policymakers. (Masaharu, Yuya and Yoichi, 2018, p. 54.)

The key-elements of each stream are presented in Figure 1. The focal research streams diverge, when it comes to the specific characteristics of each stream: the background theories, key concepts, analytical methodology, attributes of actors and variables between them. The differences in the focal research streams can be explained with distinctions between the academic disciplines and their foci, but they also resemble the dynamic nature of ecosystem concept. One of the central strains of the ecosystems both in natural and business context is the elementary uniqueness that characterizes them:

The natural as well as the man-made ecosystem is always unique – each ecosystem consists of a unique set of actors and interactions and thereby evolves in its own manner. In an ecosystem, each actor has their own role to play and, in this way, they view the partially overlapping ecosystems from their own unique perspective. (Valkokari, 2015, p. 18.)

Table 1. Overview of the focal ecosystem research streams. Adapted from Masaharu, Yuya and Yoichi (2018, p. 52)

Five key-elements of perspectives	Industrial Ecology	Business Ecosystem	Platform Management	Multi-actor Network
Background theory	Industrial ecosystem	Organizational boundaries	Platform leadership	Non equilibrium and non-linear phenomenon analysis
Key concepts	Optimization Sustainability Symbiosis	Four boundary concepts Complementary Niche creation	Two-sided market  Balance between open and closed  Balance between stability and evolvability  Hierarchy, layer structure	Embeddedness Resilience Evolutionary
Analytical methodology	Model simulation Chemical engineering Fieldwork Action research	Case study Survey Statistical test Network analysis Delphi	Case study Network analysis Statistical test Mathematical modeling	Case study Field research Statistical test System dynamics
Attributes of actors	Natural resources Private firms (factory) Consumers	Private firms	Private firms Private developers End-users	Government Private firms Universities Consumers Entrepreneurs Investors
Variables between actors	Material Energy (Money)	Money Complementary goods / services Contract Power	Technological knowledge Contract Money	Power Regulation Historical relationship Money Contract Knowledge

The heterogeneity of the ecosystem approaches makes it challenging to compare them, and the analysis gets further complicated by the self-organization and organic dynamics of the real-life ecosystems (Laasonen *et al.*, 2022, p. 12). In practice, the exiguity of empirical experiences, lack of widely established operative models and novelty of the concept has led to several interpretations of both the concept and practical ecosystem implementations.

Despite the scatteredness and obscurity of the ecosystem literature, ecosystems can at present be considered a topic that is not only rising, but also consolidating its importance. Excerpt from reference data base reveals the rapid increase of the research related to the concept in recent years (Figure 2). In the meanwhile, more and more real-life ecosystem adaptations are initiated globally, which incrementally produces empirical knowledge on the topic.

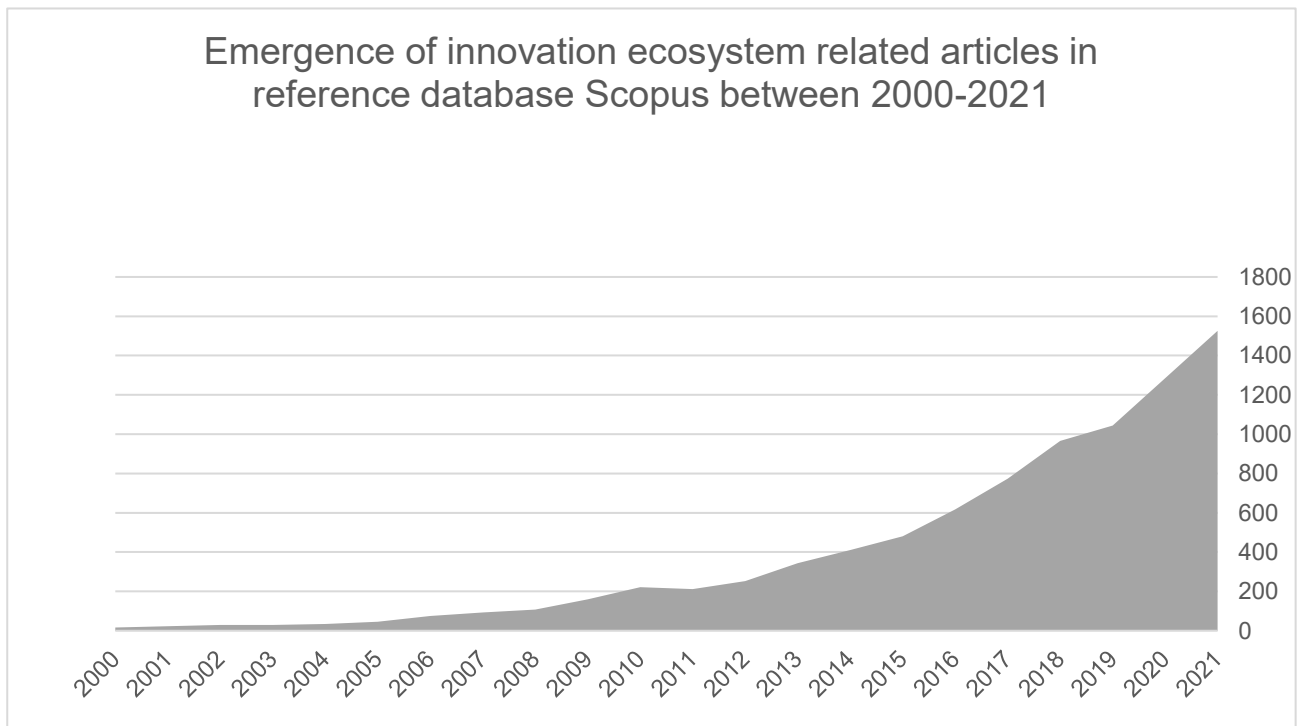


Figure 1. Innovation ecosystem related articles in Scopus reference database

### 2.1.1 Business, innovation, and knowledge ecosystems

Ecosystems are emerging in divergent locations, fields, and industries, and organizing in different ways. Aside having varied approaches towards the phenomena itself, research also recognizes many seemingly related ecosystem concepts such as ‘innovation ecosystems’, ‘business ecosystems’, ‘technology ecosystems’, ‘platform ecosystems’, ‘entrepreneurial ecosystems’ and ‘knowledge ecosystems’. (Thomas and Autio, 2019, p. 2.) The more elaborated definitions of the ecosystem concept are needed to make sense of ecosystems in more precise and practical level. The flaw in the previously presented generic ecosystem definitions is, that it does not take into

account the peculiarities that arise from, for example, the divergence of aims, forms of cooperation and level of organization. Further elaboration of the concept aims to point out the differences in ecosystem functions, objectives, operation models and approaches to practical ecosystem work.

The most seminal approach to ecosystems in management studies is to divide them to business ecosystems and innovation ecosystems. In literature, they usually share the same key-features, such as actor inter-dependency, shared goals, and complementarity, but emphasize them differently. Innovation ecosystems underline the co-creation of value and collaboration between the participants, whereas business ecosystems focus on value co-capture and competition. The defect of this division is, that it is highly theoretical: in practice the line between value co-creation and value co-capture is not self-evident, and usually the ultimate intention of value co-creation is the value co-capture. (Han *et al.*, 2022, pp. 114-115.)

Other focal way to study ecosystems more precisely is to observe their integral outcomes. The outcomes of an ecosystem depend on the type of flows the ecosystems fosters: knowledge, value and material flows result in different kinds of outcomes. Based on this observation, the ecosystem types can be divided into three central groups:

- business ecosystems, that highlight the economic outcomes and the relationships between the actors
- innovation ecosystems, that focus on mechanisms and policies fostering the creation of innovation regionally
- and knowledge ecosystems, where main interest is in creation of new knowledge. (Valkokari, 2015, p. 18.)

This interpretation suffers from similar problems with the business/innovation ecosystem division: it is not easy to draw the line between the different ecosystems. Typically, the relationship between the ecosystem types is not excluding, but overlapping – in reality, different types of ecosystems exist in parallel (Valkokari, 2015).

Based on the existing literature, Thomas and Autio (2019) have presented an organizing typology of ecosystem concept, where ‘innovation ecosystem’ is an umbrella term for all ecosystems that aim to be multi-stakeholder co-production venues exhibiting ecosystem-level value offerings as their ecosystem-level output. The ecosystem types, that fall under the umbrella term, all manifest these salient features, but differently: in business ecosystems emphasized factor is broader community within which the focal firm operates, in innovation ecosystems co-creation and ecosystem output, and in platform ecosystems coordination of technological interdependencies. (Thomas and Autio, 2019, pp. 14-21.)

In Thomas and Autio's typology (Figure 2), the focal specifying feature is also the ecosystem output – entrepreneurial ecosystems and knowledge ecosystems are understood as subclasses of innovation ecosystems, because they focus on output and co-creation but aim for different type ecosystem output. In the other hand, for example service ecosystems that are also rising in the literature, are left out from this classification as they consider ecosystems as value consumption systems rather than systems for the co-production of value, and hence form own stream of studies (Thomas and Autio, 2019, p. 6).

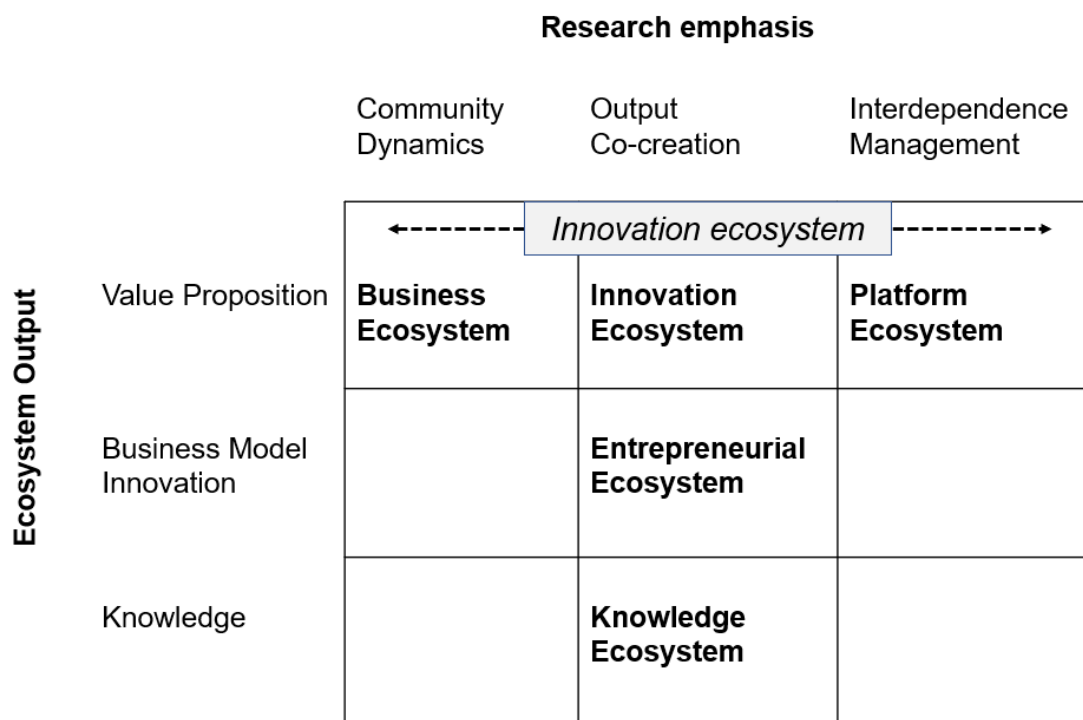


Figure 2. Innovation Ecosystem Typology, adapted from Thomas and Autio (2019).

Following the Thomas' and Autio's (2019) typology, in this study I use 'innovation ecosystem' as a general label for different types of ecosystems that aim for co-production of value. Using innovation ecosystem as a common noun helps to differentiate the concept from nature ecosystems, but also captures the integral role that innovation as such has in all ecosystems despite the type.

The term innovation has several meanings and can refer to output of innovative processes as well as the process itself (Thomas and Autio, 2019, p. 8). As their simplest form, innovations are new ideas, products, or methods – and all types of ecosystems, whether focusing on knowledge production, services, or product development, are aiming to create something new, or at least significantly improved application of something that already exists. Innovation processes and expected outcomes also form a frame in which many ecosystems organize and operate (Figure 4). The

practical organizing of ecosystems is often determined by the mechanisms, that best suit the innovation types and processes the ecosystem is expected to produce.

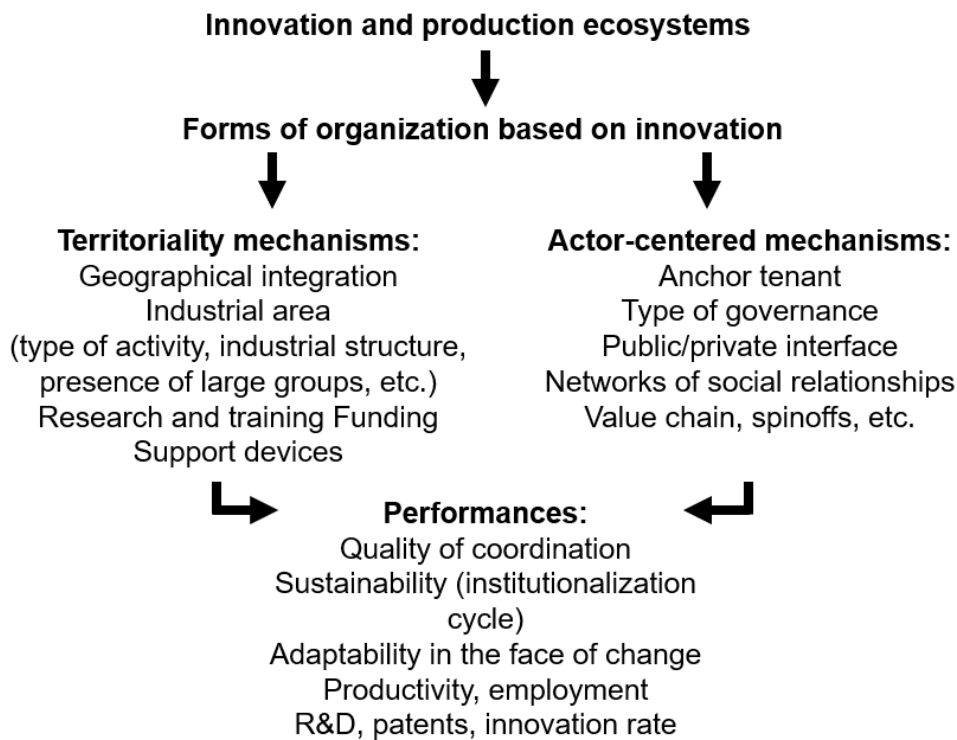


Figure 3. Innovation based forms of organization in ecosystems, adapted from Guilhon (2017, p. 9)

### 2.1.2 Significance of the ecosystem concepts

Despite the incoherencies in the definition, there are several justified reasonings for the significance of the ecosystem concepts. According to Thomas and Autio, innovation ecosystems differ from other organizational collectives such as supply chains and networks by their governance systems and specificity of output. Ecosystems are not defined by contractual relationships alone, like supply chains, yet they have specific roles and standards that enable productive interactions that generate identifiable outputs to defined audiences, which is not typical to traditional networks. (Thomas and Autio, 2019, p. 4.)

Unlike its successors, ecosystem concept considers both positive and negative aspects of organic networks – each of the ecosystem actors has its own attributes, decision making principles and operational practices, which can cause unintended results in the collaboration within the network. The analytical border of an ecosystem is not limited to business actors or national borders but to the

product or service systems that the actors are working on. This requires longitudinal observation of the dynamic evolution of the system. (Masaharu, Yuya and Yoichi, 2018.)

The attractiveness and elasticity of the term has led to a situation, where the concept has been adopted and applied widely in different fields. For example, the strategy literature tends to emphasize the collective generation of outputs, economic geography focuses on spatial dimension, and innovation studies on knowledge production and learning in innovation ecosystems. In practice, this leads to confusion. Partly due to the fragmental use of the terms, it has been debated, if the ecosystem concept really adds anything to the existing concepts that describe organizational collectives, such as clusters or networks. In the other hand, the proliferation of perspectives and applications of different ecosystem concepts testifies the underlying phenomenon. What the ecosystem literature and research is still lacking, is the conceptual and empirical rigor. (Thomas and Autio, 2019, pp. 4-6.)

### **2.1.3 Ecosystem management**

For the past few years, different actors have been building innovation ecosystems in an accelerating pace, but most of them do not seem to last for long. The lack of in-depth understanding of ecosystems' systemic, dynamic and complex nature results in high fall through rate and lack of success. (Han *et al.*, 2022, p. 112.) In network management studies, ecosystems and other meta-organizational networks are observed as systemic phenomenon with multiple levels: they exist in partnership-type of relationships between organizations and individuals but are also multi-actor and multi-organizational constellations looking for collaborative advantage from cooperation. At the ecosystem level, the symbiosis of different organizations and their relationships form a competitive platform that aims to outperform other ecosystems by superior mutual strategic and operational fit. (Vesalainen, Valkokari and Hellström, 2017, pp. 2-3.) Successful management of the network creates and maintains environment that supports this aim.

Due to the complexity and systemic nature of ecosystems, it is evident, that ecosystem management differs from traditional management perceptions in terms of hierarchical power and structures. Management has traditionally been considered as an intra-organizational function that gets its legitimacy from hierarchy within the organization. Networks, instead, are coordinated by three factors: the power residing from inter-organizational dependencies, market mechanisms and mutual trust. In networks and ecosystems, efficient management originates from understanding and combining these three dimensions – even if the actors of a network have common goals, the managerial power to implement them are weaker than in an intraorganizational context. (Vesalainen, Valkokari and Hellström, 2017, pp. 3-4.)

Ecosystems are not just instruments for establishing relationships but constantly developing, self-organizing systems: in ecosystems, a large number of networks function without any hierarchical control (Valkokari *et al.*, 2021, p. 7). Despite the lack of hierarchy, for innovation ecosystems to work, they need to be managed. They need structures and practices to follow – which often requires a coordinating function. Ecosystem's coordinating function, typically referred as an orchestrator, takes the responsibility over aligning the collaborative processes, network relationships, and common practices for effective innovation creation, accumulating the required experience, know-how and connections to one core entity. (Launonen and Viitanen, 2011, p. 152.)

Ecosystems' co-creation and joint activities are formed by the ecosystem actors, and there are differences between the types of collaboration in regard to degree of openness and the steering model (Figure 5). The operating model of an ecosystem may be built on a centralized basis around a single actor or a close-knit core group who sets the objectives for the work and is often the key beneficiary of the results. These centrally orchestrated and relatively closed ecosystems are efficient but adopting new operating practices or creating new initiatives might be difficult for them. More open operating models provide growth potential and a sound basis for critical mass and new expertise combinations, but less certainty in terms of achieving results. In completely open and re-connecting operating models, the focus is on the continuous search for 'the new' while the joint agenda of the ecosystem remains relatively vague. Agenda fragmentation is a typical problem in open models. (Valkokari *et al.*, 2021, p. 21.)

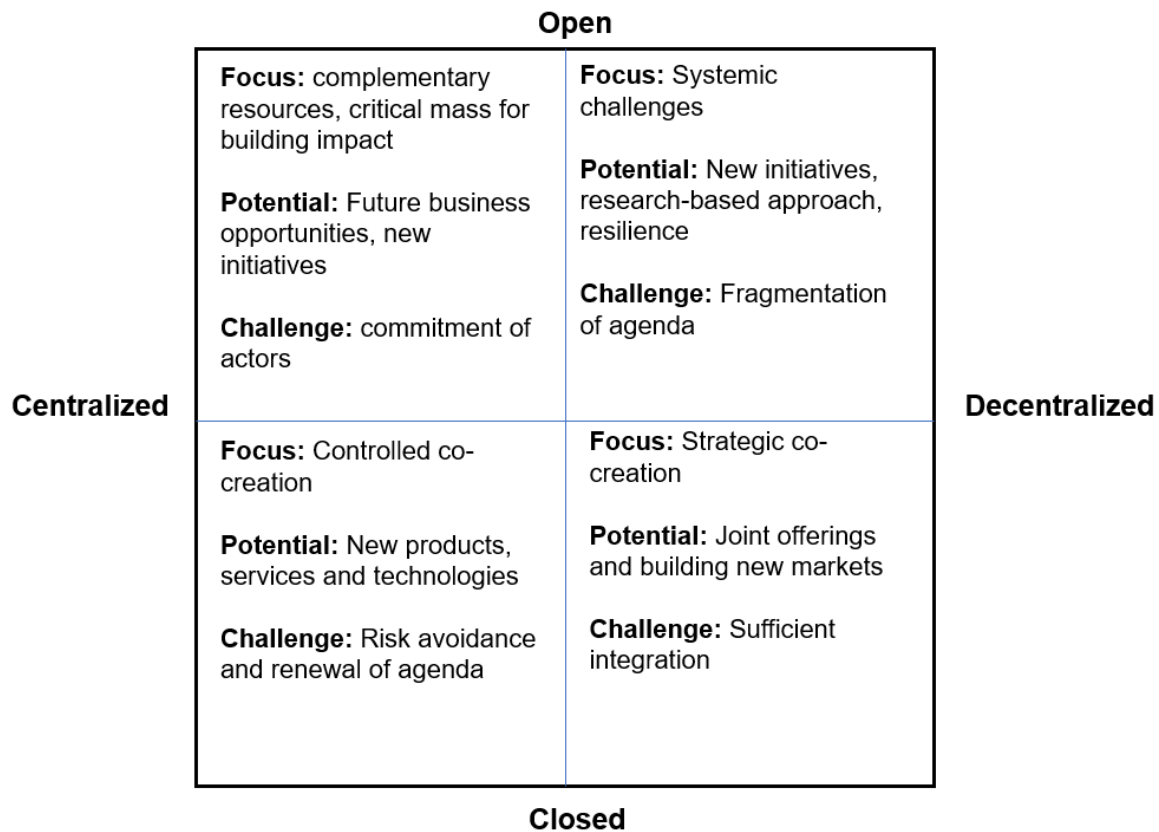


Figure 4. Ecosystem operating models, adapted from Valkokari et al. (2021, p. 21)

In most cases, the ecosystems can benefit from a professional coordination function, which specializes in its core operations. This applies especially in situations, where ecosystems are viewed from the multi-actor perspective, where different public and private organizations cooperate. Professional coordination accelerates the ecosystem productivity: overall process efficiency rises, when expertise over funding issues, administrative processes and resource allocation for effective collaboration combinations accumulates over time. In the meanwhile public officials, researchers and business representatives can concentrate on value creation and optimizing the innovation process. (Launonen and Viitanen, 2011, p. 157.)

One of the most critical management issues in network organizations is the coordination of parallel, partly conflicting, sectoral interests and orchestration of common collaborative interfaces (Launonen and Viitanen, 2011, p. 156). The ecosystem actors have different attributes, decision making principles and behaviors, which might sometimes cause unintended results. To avoid this, ecosystems should aim for coherency – a situation, where sufficient amount of actors in the ecosystem have similar decision-making and behavioral principles (Masaharu, Yuya and Yoichi, 2018, p. 55).

The level of coherency has strong correlation with the sustainability and resiliency of the ecosystem (Masaharu, Yuya and Yoichi, 2018, p. 55). For achieving system-level goals, networks must have at least moderate internal domain similarity such as a common knowledge base and shared values to facilitate collective goal development and actors' commitment. (Matinheikki *et al.*, 2017, p. 32) One way to enhance the coherency is to bring the key parties together to agree on the roles, responsibilities, and powers of each actor to implement the shared vision. The coordinating parties play a critical role in mediating the process and providing hands-on support in networking, information exchange and cross-domain communication. (Launonen and Viitanen, 2011, p. 156; Matinheikki *et al.*, 2017, p. 32.)

The dynamic nature of ecosystems places its own challenges for the orchestration and management. Already in Moore's article (1993), the development of the ecosystems was pictured by presenting four evolutionary stages of a business ecosystem: birth, expansion, leadership and self-renewal (or death). Each stage has its own competitive challenges the ecosystem management and strategy need to adapt to. For example, during the emergence, acquiring legitimacy is crucial for the ecosystem to survive, and therefore it is necessary for ecosystem orchestrator to understand how complementors, users, and external actors contribute to legitimacy construction (Thomas and Ritala, 2022, p. 516). It has also been discovered, that the extent of ecosystem participants' contributions to the final innovation has a different variance within nascent and mature ecosystems, but otherwise there is still rather little knowledge on temporal variances of ecosystems' conceptual boundaries (Han *et al.*, 2022, p. 2).

## **2.2 Ecosystem communication**

As a phenomenon, innovation ecosystems reflect our time. The social changes along with megatrends like digitalization have created an operational environment that favors collaborative ways of creating and capturing value. The rise of open innovation and business model innovation trends is ultimately enabled by digitalization, as the development of digital technologies and infrastructures have allowed organizations to re-think and re-design their interactions for value-creation, delivery, and capture. The ecosystems provide flexible, organic, emergent, and coevolving interactions within organizational communities that are less dependent of physical assets. (Thomas and Autio, 2019, p. 23.)

The structural changes that have enabled the emergence of innovation ecosystems are tightly connected to the ideas of post-modern world and late modernity that are characteristic for the beginning of twenty-first century. For example globalization, consumerism, mediated communication that saturates relationships and processes, and post-Fordism, which refers to organizational networks

and new modes of organizing labor, are comprehensively affecting the way we observe organizations – and organizational communication. (Falkheimer and Heide, 2018, p. 89.)

As illustrated in the previous sub-chapters of this review, ecosystems are based on voluntary cooperation and mutual trust, and do not have similar power structures than traditional organizations. They are loosely connected meta-organizations with multiple actors that have their own management and strategies, most likely near-to-no hierarchy, and divergent layers of communication and cooperation. To make sense of the ways to manage ecosystem communications, one needs to look past the communication theories, that are created to answer the needs of traditional organizations with hierarchical structures and top-down management mechanisms.

In communication studies, strategic communication is a concept and professional field that has emerged increasingly during the first decades of 21<sup>st</sup> century and is accelerated by the social change from modernity to late modernity. Strategic communication is transboundary field of knowledge that has holistic approach on examining organizational phenomena. (Falkheimer and Heide, 2018, pp. 87-88.) Due to this nature, strategic communication and its conventions offer an interesting offset for examining ecosystem communications.

### **2.2.1 Strategic communication**

In the field of communication research, the concept of strategic communication refers to a holistic communication approach, where the focus is on all communication that is substantial for the survival and success of an organization, not in any separate communication discipline or process (Zerfass *et al.*, 2018). For a long time, organizational communication was considered as a mainly tactical and operative function, separate from organizations core functions. In 2000's the overall approach towards organizational communication has shifted: communication is growingly seen as a management function, that has strategic significance for organizations. (Juholin and Rydenfelt, 2020, pp. 80-81.)

Strategic communication as a concept is rooted in the theories of strategy and strategic management, and complements central communication concepts such as PR, organizational communication, communication management and integrated marketing communications, and in some contexts, partially replaces them. Strategic communication is relevant for all kind of organizations, as well as social movements and known individuals in the public sphere – through strategic communication, the organizations and individuals engage in conversations that have strategic significance to their goals. (Juholin and Rydenfelt, 2020, pp. 79-81; Zerfass *et al.*, 2018, p. 487.)

One key-feature in strategic communication is the comprehensiveness: in strategic communication a communicative perspective is applied to all organizational processes, and communication

happens between all actors, as the responsibility and power over communication activities is not limited to the communication professionals. Instead, it is acknowledged that communication happens between all the representatives of an organization and in all their interactions with organizations stakeholders. The communication activities are aligned with the overall strategy, and the aim is to connect communication and strategy cohesively throughout the organization structure. (Falkheimer and Heide, 2018, pp. 71-73.)

In practice, the activities in which the strategic communication approach is implemented, are often considered to first and foremost enhance the organizations strategic positioning (Argenti, 2016, pp. 16,29). Instead of focusing on the results of a certain communications effort, information dissemination or the way people converse, the attention is on the fundamental importance of communication for the existence and performance of an organization (Falkheimer and Heide, 2018, p. 1).

Modern strategy and communication theories are observing both strategizing and communication as ongoing processes of meaning construction. They are both seen interactive by nature and participatory at all levels. From this perspective, strategic communication is omnidirectional and diachronic. The emphasis of communication is on the external and internal arenas of continuous meaning-construction. Therefore strategic communication should be seen as an agile management process in which the focus is on feeding these arenas for strategy building and implementation, and on testing strategic decisions. (Van Ruler, 2018.)

In organizational communication theories, communication is often approached from either functional or constitutive perspective. In the first, the focus is on functional processes that serve the organizations ultimate goals. The second sees communication from holistic perspective, where the communication has fundamental role in creation and existence of an organization and its shared targets and meanings. From functional perspective, strategic communication can be understood as processes, that serve organization's overall strategic targets. Constitutive approach emphasizes the fundamental nature of communication: instead of seeing communication as processes that serve the strategy, strategic communication is seen as a cross-cutting element, that brings together the strategy and communication throughout the organization. (Juholin and Rydenfelt, 2020, p. 82.) In general, the emphasis on strategic communication research has increasingly moved from functional approach towards more constitutive point of view (Sriramesh *et al.*, 2013, p. 83).

The concept of strategic communication has been broadly adapted by both communication practitioners and scholars, but at the same time, the academic discourse about strategic communication is still unfocused and spread across various disciplines (Zerfass *et al.*, 2018, pp. 488-490). Also, the different perceptions of communication and strategy as such create variety of views to the subject. Strategic communications can be understood as means for presenting and promoting

organizational strategy but also as a way of building it (Van Ruler, 2018, p. 373). In other words, as deliberate actions aiming to reach strategic goals, or a vital and constitutive part of organizations' existence:

For some, strategic communication is focused on presenting and promoting goals and strategies; for others, it is also focused on driving its development. In other words, for some, strategy precedes strategic communication; for others, strategic communication also constitutes strategy. (Van Ruler, 2018, p. 373.)

Especially researchers within fields of marketing, public relations and organizational communication have focused on developing the strategic communications paradigm, but the work within the three fields has been rather isolated, which is unfortunate, as one of the ambitions of strategic communication is to break silos between the disciplines and to create an unified framework for organizational communications. (Falkheimer and Heide, 2018, p. 71; Heide *et al.*, 2018)

Zerfass *et al* (2018, pp. 488-490) state, that research acknowledges at least four partially overlapping meanings for strategic communication:

- a replacement for term “integrated communication”, meaning all types of goal-oriented communication initiated by organizations to address any kind of stakeholders and audiences
- the new role communication is taking in contemporary, large, private, and publicly traded companies as strategic and decisional, opposed to tactical and supportive
- communication in the context of military and national power
- an alternative terminology for the established discipline of public relations, without changing the underlying research objects or perspectives of that field.

As a research discipline, strategic communication balances between specific research objects and perspectives and interdisciplinary approach that is required from applied sciences to integrate knowledge that expands the designated object and perspective (Zerfass *et al.*, 2018, pp. 488-490).

The critique towards the concept derives mostly from fragmented research and different meanings implemented into it. One of the debated issues is, if it should be treated as an independent paradigm or more generally as one of the developing sub-concepts of communication sciences. It has also been argued, if the strategic approach focuses too much on managerial aspects and targets, and therefore fails to see the full diversity of communications in organizations. (Juholin and Rydenfelt, 2020, p. 81.)

The existing approaches have been claimed over neglecting emergent strategies and strategies-in-practice, being organization-centric and not inclusive of stakeholder interests, discounting the constitutive role of communication for strategy-making and organizations at large, and placing emphasis on communication professionals at the expense of the day-to-day communication activities of

other organizational members. Although some criticism derives from misunderstandings, the observations help in developing the paradigm further and remind the practitioners of more comprehensive approach to strategic communication. (Zerfass *et al.*, 2018, pp. 487-488.)

### **2.2.2 The concepts of strategy and strategy-making**

One important step in applying strategic communication into practical context is to understand the concept of strategy, and different approaches to it. Strategy as its simplest is long term planning of organizations goals and leading its actions to right direction. In research, there is traditionally two different angles to approach strategy: one that sees strategy as a content, and other that approaches it from process perspective. The content approach focuses on the strategy type, while the process approach emphasizes strategy formulation and implementation. (Falkheimer and Heide, 2018, pp. 45-46.)

Several schools of strategy research have evolved from each perspective, emphasizing different aspects of strategy. Some theories rely on power of operational analysis, aim for creating logical steps for strategy formulation, and see humans as rational creatures. In the other end of the spectrum, the more relativistic counterparts challenge the rationality of humans and organizations and see strategy as organizational meaning-making. Practical strategy implementations are often combining elements from different approaches. (Falkheimer and Heide, 2018, pp. 45-50.)

Besides the different angles on strategy itself, there are several paradigms and approaches to strategy-making, some of them more methodical, others rather intuitive. The end-results can vary from rationally planned comprehensive action plans to more flexible and intuitively processed, iterative and continuous outcomes. The paradigms vary depending on the processes of strategy formation: top-down or bottom up in the organization, or deliberate and planned versus ad hoc and spontaneous. (Cornelissen, 2020, p. 110.)

Lately, the research emphasis has turned increasingly from the deliberate top-down approach to more emergent bottom-up-view, where communication and decisions of all employees at all levels are valued. Emergent approach focuses on all members of an organization and sees their communication constitutive of the strategy, rather than studying how managers construct and transmit strategy down to other employees. (Heide *et al.*, 2018, p. 456.)

Different approaches to strategy create variety of perspectives on strategic communication. Traditional view, where strategy is understood as rational planning processes, tends to lead to more managerial, modernist approach, and the emergent approach highlights the micro-level social activities, practices, and processes (Heide *et al.*, 2018, p. 457). These days it is widely accepted that strategy as such is a communicative practice, that is conducted in the different levels of

organization, and communication can play a distinctive role for the formulation, revision, presentation, execution, implementation, and operationalization of strategies. No matter how visionary the strategy is, it cannot be implemented without a linkage to operational and governance processes. (Falkheimer and Heide, 2018, pp. 46-53; Zerfass *et al.*, 2018, p. 487.) Conversely, operational excellence is not likely to lead to a success without vision and guidance that the strategy should offer (Kaplan and Norton, 2008, p. 8).

### **2.2.3 Communication management**

As an organizational function, communication management is responsible for overseeing and leading the work that creates favorable basis for relationships with stakeholders and other groups upon which the organization is dependent (Cornelissen, 2020, p. 5). In strategic communication approach, creating and maintaining internal and external relationships are increasingly seen as responsibility of not only communication professionals' but all organizational actors (Heide *et al.*, 2018, pp. 73-74).

In strategic communication, the practical communication work is also often referred to as communication management. The role of communication professionals is to create, maintain, and adjust perception and image of an organization, and to act as internal consultants in matters that relate to their expertise. Strategic communication includes all the communication that helps the organization to reach its goals, and in practice, the specialists of the field are pursuing this aim through continuously exploring the needs, planning, strategic formulation, communication interventions, communication programs, and communication processes. This highlights the need for communication expertise and ability to engage people. (Falkheimer and Heide, 2018, pp. 73-74; Sriramesh *et al.*, 2013, p. 90.)

Planning is one of the focal managerial activities in organizational communication. In level of strategic planning, organizational communication aims for creating impact and measurable changes in the long term and defines the targets and guidelines for operative and tactical communication activities. Tactical communication is precise and reactive decision-making and problem solving, where the aim is to monitor the operational environment and resources, ensure the communication readiness, and implement the strategic targets into operative communication actions. In tactical communication the goals are at mid-range level – such as gain more customers, increase sales, or gain more visibility in media. (Falkheimer and Heide, 2018, pp. 56-57.) Decisions over communication campaigns and projects are usually considered tactical communications planning (Juholin, 2022, pp. 78-80).

Operative communication forms the majority of practical communication activities in organizations. It consists of planning, ideating, coordinating, and measuring the communication activities based on the strategic level targets and tactical decisions. Daily work on communication processes and projects, follow-through of individual communication activities and campaigns, and data-based evaluation and development of the forementioned also falls under operative communication. The timespan for operative communication planning is often one year, and the annual plan is elaborated when needed: often quarterly, but sometimes monthly or even week by week (Juholin, 2022, pp. 78-80).

To harness the strategic interests of organization at large, communication needs to cross the boundaries between individual communication disciplines and combine the different specialties to build, maintain and protect organizations reputation among stakeholders (Juholin, 2022, pp. 78-80). The specific responsibilities managed by organizational communications teams vary – organizations consider unique combinations of activities important, depending on the needs and aims they have in the given time. In his book, Paul A. Argenti (2016, pp. 52-53) provides a list of distinct responsibilities, that are likely to be included in the organizations communication (Table 2).

Table 2. Communication Responsibilities in Organizations. Adopted from Paul A. Argenti (2016, pp. 52-53)

External communication activities	Internal communication activities	Other communication activities
Press and Media Relations Investor Relations Financial Relations Corporate Website Corporate Advertising Marketing Communications Executive Communications Community Relations Government Relations	Employee Communications Corporate Intranet Leader / Manager Communications Training	Social Media Graphics or Creative Services Measurement and Monitoring Corporate Social Responsibility Charitable Activity Corporate Sponsorship Communications Staff Development Operational Costs Other Miscellaneous Costs

It can be debated, if this kind of segmentation is relevant from the strategic communication perspective, that highlights the comprehensiveness and cross-disciplinary approach. However, the list gives an outlook to the areas in which the communication practitioners are operating, and what kind of actions are often expected from them. It also visualizes the combination of tasks, that are typically managed within communication departments. In situations, where these are seen as the baseline for organizational communication, innovation ecosystems, that aim for collective output and success in the competitive market environment are likely to be facing similar kinds of expectations regarding to their communication.

Efficient organizational communication management involves a range of activities in all the presented segments, such as previously mentioned planning, coordinating, and measuring communications in each level, as well as counselling the other professionals in the organization. According to Tench *et al.* (2017), the communication excellence can be produced and managed only by placing simultaneous efforts in connecting the organization with its environment and stakeholders, making the communication department influential within the organization, and ensuring the high ambition level of the communication professionals in the organization.

#### **2.2.4 Communication management tools**

Management tools are techniques, frameworks, methods, models, approaches, procedures, and methodologies that support decision making. They help to codify knowledge within the approach, often through some form of propositional or visual representation. The information produced by a management tool is supposed to be comprehensible and, at least up to some point, comparable. Generally, the aim of the tools and models is to simplify and standardize complex problems. (Volk and Zerfass, 2021, p. 51.)

Aligning strategic priorities with operational execution and feedback requires systematic performance management. During the past thirty years, a large number of diverse management tools for strategy formulation and operational improvement have been developed and introduced to the public. (Kaplan and Norton, 2008, pp. 10-11.) Compared to many other disciplines, in the field of communication the management tools are underdeveloped and underused. Research shows that there are numerous non-standardized techniques employed in practice, but only a few well-established tools, that are often adopted from other disciplines. It is hard to find science based, standardized tools for most aspects of communication management, and the communication practitioners often still rely on practical knowledge and job experience. (Volk and Zerfass, 2021, pp. 53-54.)

It seems, that the importance of the communication management tools is, however, on the increase. As the communications environment and the problems at hand are growing more complex,

the standardized approaches and professional routines help to leverage the full potential of organizations capabilities. (Volk and Zerfass, 2021, p. 63.)

### **2.3 Summary and theoretical framework**

In context of innovation and management studies ecosystems are considered as meta-organizational networks with common vision and targets. They are constellations based on voluntary cooperation, have no hierarchical structures or contractual ties between the actors, and aim to create outputs that extend the capacities of an individual organization. The research around the topic has emerged increasingly during the past ten years, and the concept has been applied in various ways within several disciplines. To elaborate the concept, researchers have identified different ways to categorize ecosystems with different aims and organizing models. The most seminal typologies are based on the ecosystem's operation model, aimed output and internal flow. As a result, research recognizes a variety of ecosystem concepts, of which the most established ones are innovation ecosystem, business ecosystem and knowledge ecosystem.

Ecosystems are unique by nature, and there are several variables that effect on the ways ecosystems are formed and organized. Typical ecosystem operation models vary from open to closed and from centralized to de-centralized. Ecosystems are not only structures, but also interactive processes between the actors, and the way ecosystem is formed depends on how the actors organize and what is the general aim. The operation models and ecosystems overall emphasis might change in different stages of ecosystem life cycle. The hierarchy within the ecosystem is limited or nonexistent, and instead of managerial power, the management in ecosystems is based on mutual trust, interdependencies, and market mechanisms. However, the existing research indicates, that most of the ecosystems benefit from a professional coordinating function.

Communication is broadly acknowledged as an important factor for the ecosystems' success. Due to ecosystems' multilateral and non-hierarchical structures, it is convenient to approach their communication from perspective of modern communication theories, that are taking distance to top-down management structures and view communication as a constitutive element for organizations existence. Strategic communication is a paradigm, that sees communication as a holistic and cross-cutting element, that happens in all levels of an organization and in all encounters with its stakeholders. The communication actions help the organizations to improve their strategic positioning but are also feeding the internal and external arenas of meaning construction.

Communication management is typically considered as organizational function, that leads and monitors communication excellence by planning and executing professional communications. From strategic communication perspective, the communication responsibilities are not limited to

communication professionals, as the communicative perspective is implemented to all functions of an organization. The communication management continues to create, maintain, and adjust perception and image of an organization, but also takes the role of an internal consultant, guiding and engaging the other professionals to communication actions.

Management tools are techniques, frameworks, methods, models, approaches, procedures, and methodologies that support decision-making and create comparable knowledge over the subject. Discipline specific communication management tools are rare and not widely established, and according to research, communication management relies strongly on practitioners' expertise and experiences.

The most critical learnings of the review are summarized in the following the theoretical framework, which also provides the basis for the empirical part of the research.

Table 3. Framework of Strategic Communication and Management in Ecosystems

<b>ECOSYSTEMS IN BUSINESS AND INNOVATION CONTEXT</b>	<b>ECOSYSTEM MANAGEMENT</b>	<b>STRATEGIC COMMUNICATION</b>	<b>COMMUNICATION MANAGEMENT</b>
<p>Meta-organizational networks with common vision and targets.</p> <p>Create and capture value.</p> <p>Different ecosystem types produce different end-results, e.g. products, services, knowledge or innovation.</p>	<p>Aims for efficient organizing of an ecosystem.</p> <p>Helps the ecosystem to thrive in competitive market environment.</p> <p>Differs from traditional organizations in terms of power distribution and operation models.</p>	<p>Purposeful use of communication in aim to reach organizations targets.</p> <p>Cohesively connects communications and strategy through organization structure.</p>	<p>Upper-level coordination of organizational communication.</p> <p>Aligns tactical, operational and strategic level communication activities.</p> <p>Professional expertise, management tools and well-established practices.</p>
<b>THE KEY-ELEMENTS OF ECOSYSTEM COMMUNICATION MANAGEMENT</b>			
Understanding the ecosystem type and purpose	The ecosystem management structure and practices	Alignment of strategy and communication processes	Defining relevant communication actions and practices

### 3 Research methodology

Focal part of this thesis is a case study conducted among innovation ecosystem coordinators. This chapter introduces the details of research methodology, as well as the specific methods of data-collection and analysis. The chapter concludes to an overview of the limitations and trustworthiness of the study.

#### 3.1 Research approach and methodology

This study is a qualitative multiple case study. My aim is to observe the innovation ecosystems as phenomena, and to gain deeper understanding of the practical experiences related to ecosystem communication and management. When studying the ecosystems that are situational and unique by nature, the case study offers clear advantages that favor the choice of methodology: it enables to dig deep into the studied matter, gain understanding to extend or test a theory, as well as to comprehend each case as a whole. It also allows examining the research subject in practical situations and to draw context-relevant statements. (Farquhar, 2012, p. 8.)

Besides exploring the operational habits of a particular set of innovation ecosystems, my goal in this thesis is to produce a communication management tool for ecosystems to utilize. This kind of offset is typical for qualitative research: often in qualitative research, the intention is not only to produce insight for scientific purposes, but also to gain knowledge, that is practically relevant for producing or promoting solutions for practical problems. In general, qualitative research is interested in the perspectives of participants, everyday issues, and collecting practical knowledge referring to the subject of the study. (Flick, 2008, pp. 2-6.)

The methodology used is based on constructivist approach to grounded theory. Constructivist version of grounded theory is rooted in pragmatism and relativist epistemology and assumes, that both data and theories are constructed by researchers as a result of interaction with their participants and emerging analyses (Flick, 2008, p. 154). Supplementing epistemology in my research is critical realism, which refers to perception, that social phenomena are intrinsically meaningful. Due to that, meaning is not only external description of a phenomenon but also constitutive element if it. (Farquhar, 2012, p. 21.)

In this research, the epistemologies show as an aim to understand, rather than just describe, the studied ecosystems, and in accepting the social and organizational structures that impact on them. In critical research, following the tradition of critical theory, the relationship between the 'real' world and theory is noticed to be complex and the structures and mechanisms existing in the world are acknowledged and seen as permanent elements, existing in society and emergent and

knowledgeable to the researcher. Critical research recognizes the existence of several understandings of the world, and emphasizes the existing structures and mechanisms related to these permanent structures. (Eriksson and Kovalainen, 2008, p. 264.)

### 3.2 Research design

Case studies in general allow the researcher to approach the phenomenon in a specific context, so that the findings generate situational insights (Farquhar, 2012, p. 6), which I also the aim in this study. I am focusing on investigating how the innovation ecosystem management and communications are perceived within a set of innovation ecosystems, and more precisely, among the ecosystem coordinators.

Instead of studying just a single representative case, this study focuses on multiple cases that illustrate the ecosystem phenomena. In case studies, research focus is on investigating single or multiple units of study, and they fit well to situations, where the researcher seeks answer to 'when', 'how' and 'why' questions. In a way, case study is an empirical investigation where the collected evidence is based on knowledge and experience, and research data is collected using familiar research methods such as interviews or surveys. By circumscribing the area of a study to a small number of units, the case study allows in depth familiarization with the topic. (Farquhar, 2012, p. 6.)

Case study as such does not aim for generalization of results due to small sample size, but the multiple case study allows comparison between the chosen cases for what they show. (Thomas, 2011, p. 141.) In this study, the chosen ecosystem cases are all coordinated within one organization, but instead of looking at them as nested units of a wider case, they are examined as individual, parallel cases.

Table 4. Research design map, adopted from Thomas (2011).

Subject	Purpose	Approach	Process
Key case	Instrumental Exploratory Explanatory	Testing a theory Building a theory	Multiple case study

The research design is presented in Table 4. The subject of the study is the set of ecosystems, that are presenting a good example of the studied phenomena and form a particularly interesting key case. The purpose of the study is instrumental, including some exploratory and explanatory elements. In other words, the study as such works as an instrument for creating better understanding of the subject to form knowledge-based methods and models to utilize in ecosystem communication management, but as the research focusing specifically on ecosystem communications is

practically non-existent, there is a need to explore and explain the subject beyond that. From this starting point, it is also justified to approach the subject from both theory testing and building perspectives: simultaneously trying to open-mindedly generate new knowledge from the data and comparing the data to general communication and ecosystem theories.

The research data is collected via semi-structured interviews and analyzed iteratively. The approach to analysis is combination of inductive and abductive. Qualitative data analysis in general aims for finding new or emergent patterns from the content of the collected data through iterative process, where the mass of unwieldy data is processed to a manageable interpretable form by repeatedly organizing, coding and categorizing the evidence, and summarizing it. (Daymon and Holloway, 2010, pp. 231-243.) Inductive analysis looks for emergent theoretical constructs and insights from the data, and seeks to uncover new concepts or theories, as abductive analysis seeks relations to existing theories (Farquhar, 2012, p. 93). The inductive and abductive emphasis of different stages in research process are highlighted in Figure 5 that illustrates the research process.

Inductive emphasis	Abductive emphasis	
Step	Activity	Aim
Research design	Defining research questions	Focusing the research efforts and creating basis for the study.
	Selecting cases  Crafting instruments and protocols	
Entering the field	Literature review	Creating extensive impression of the research field and simultaneously allowing the unique case features and themes to emerge.
	Overlapping data collection and analysis	
Analyzing the data and shaping the findings	Iterative coding of evidence, searching for patterns	Gaining familiarity with the data and preliminary theory generation.
	Finding answers for the research questions	
Enfolding the study	Applications based on the theory and findings	Generating models based on the data and literature.

Figure 5. Research process

### 3.3 Sampling

To answer the research questions, it was critical to collect experiences from subjects that have comprehensive first-hand experience on ecosystem orchestration. This led to purposeful case sampling (Patton, 1990, pp. 169-172), where the aim was to select information-rich cases for in-depth study. All the innovation ecosystems selected for the study had a track record of ecosystem-type collaboration and embodied the ecosystem-specific features of organizing, such as non-contractual cooperation, collaboration around certain topic and aim for long-term impact.

The selection of specific ecosystems was limited to the ones coordinated by VTT Technical Research Centre of Finland. During the case selection, VTT was involved in several innovation

ecosystems with different emphases and focus. Cases, that were not self-evidently identifiable as innovation ecosystems based on their operations, were ruled out of the selection, as well as the ecosystems with no sign of active collaboration. The chosen ecosystems were expected to manifest the research subject intensely (Patton, 1990, pp. 169-172): they all represent different examples of the phenomenon of interest and together offer a revelatory, unique set of sources that open access to new data.

Some of the innovation ecosystems selected for the study had more project-like perspective on the collaboration – for example, pre-defined operative period and specified collaboration partners. In others, the collaboration and activities were more emergent and structures as well as networks are under continuous development. By the time of the case study, one of the chosen innovation ecosystems with more project-like orientation and fixed time span had already reached its term of operation, but none of the ecosystems had completely terminated their activities.

### **3.4 Data collection**

The primary data collection was carried out via semi-structured interviews. Unlike quantitative research, qualitative research focuses on text and audio as empirical material instead of numbers (Flick, 2008, p. 2), and the focus is on subjective understanding, meaning or sense-making processes of people or groups (Cassell, 2015, p. 4). Interview as a data collection method was chosen because of its versatility in terms of sense-making – semi-structured interviews allow the interviewees to approach the issue from subjective viewpoints yet form a consistent set of data to analyse. Semi-structured interview as a data collection method is generally well suited for gathering information and experiences over a given topic and to gain insights into the interviewee's experiences of it: when the focus is on particular phenomenon and how people experience it, asking them directly is often the best way to find out. (Cassell, 2015, pp. 73, 80.)

All the interviewees were working in a leading role in an ecosystem: either as a coordinator and convener or in a similar role close to the ecosystem core. The studied ecosystems were, however, not uniform. Each ecosystem had its own unique characteristics and different knowledge field or industry to focus on. Uniqueness favours interviews as a data collection method, as interviews in general are very flexible technique: if an interviewee raises an unexpected issue that is relevant to the research, the researcher can follow that up and ask for more information (Cassell, 2015, p. 4).

In this study, the interviews were exploratory: the aim was to investigate the ecosystem phenomena and map the approaches and experiences the interviewees had on the subject. The interview questions were focusing on creating new knowledge on the research subject. Besides the

interviews, data was collected by examining the ecosystem websites, funding applications, reports, and presentation materials.

### 3.4.1 Semi-structured interviews

The interviews were conducted between June and September 2022 via online-meetings. The interviewees were located in different cities, and with face-to-face interviews there would have been a risk of schedule stretching. To avoid that, and to create equal settings for all the interviews, online interviews were chosen for interviewing method. All the interviews were recorded and after the interview summarized in writing for further analysis. Altogether seven ecosystem professionals were interviewed, of which one interviewee shared information over two ecosystems. The conducted interviews are presented in Table 5.

Table 5. Interviews conducted for the study

Interview date	Interviewee's role in their ecosystem	Ecosystem
23.6.2022	Ecosystem leader / main coordinator	A
29.6.2022	Ecosystem leader / main coordinator	B
29.6.2022	Ecosystem leader / main coordinator	F
30.6.2022	Ecosystem coordinator / convener	H
10.8.2022	Ecosystem initiator	C
26.8.2022	Ecosystem coordinator	D
26.8.2022	Coordinator, stakeholder relations	E
1.9.2022	Ecosystem leader	G

Before the interview, the interviewees received an introductory message, where I introduced myself and the study, and asked their interest to participate. In addition to the basic information, the message included a short description over the research topic and the themes of the interview. The intended end-results – a description over the current state of communications within the ecosystems and possible propositions for future tools and practices – were also referred to in the introduction.

The interviews consisted of four sections, that covered:

- ecosystem emergence, operating model, and administration

- ecosystem communications in general
- strategic communications in the ecosystem
- major challenges and successes in ecosystem communication and operations in general.

The data collection was guided by the theoretical framework, but the interview questions were formulated in a way, that made them comprehensible and familiar to the interviewees. The semi-structured interview form (Appendix 1) included 24 questions, that were not revealed to the interviewees prior to the interview. The aim was let the interviewees speak freely and describe the ecosystem activities from their own perspective, yet to ensure, that the gained information was, up to some point, uniform and comparable to the other interviews. I had been working closely with two of the ecosystems prior to the interviews and was familiar with the ecosystem leaders. Especially in these two interviews, the predesigned question set acted as a tool to take distance to the subject. The interviews were designed to last approximately one hour, and they were carried out in Finnish.

### **3.5 Data analysis**

The collected data was analyzed by using thematic content analysis and more precisely, using explanatory approach. Explanatory or conceptual research process includes deconstructing the concept to be explored from the existing literature, developing a conceptual framework for data collection that focuses inquiry but does not sharply define its limits, and using previous work as a frame to explore the internal structure and dynamics of the concept. (Guest, MacQueen and Namey, 2012, p. 38).

The data was first coded and then categorized to emerging themes to search interconnections between the cases. In qualitative analysis the aim of a coding is to symbolically assign a summative, salient, essence capturing and / or evocative attribute for a portion of text, audio, or visual data. It is a researcher-generated interpretation of the data, where individual parts of the data are given meanings for later pattern detection, categorization, theory building and other analytical processes. Codes can be seen as “invitations and openings” for new inquiries, but it also has been suggested, that a well-developed code stands on its own. (Saldaña, 2021, pp. 5-6.)

In my study, the aim of the coding was to categorize the data and find patterns that form basis for the findings and possible theory generation. Pattern as such is a repetitive, regular, or consistent occurrence that appears in the studied data more than twice. At basic level, patterns show the relation between unity and multiplicity, and are trustworthy evidence for findings since they demonstrate habits, salience and significance of the matter. (Saldaña, 2021, p. 8.) Finding patterns is focal for the study’s central aim, which is to investigate habits, processes, ideas or attitudes on

communications and management in innovation ecosystems and see if the studied ecosystems have common elements that can be implemented to a communication management tool.

The data was coded inductively and cyclically, starting with pre-coding. In inductive coding, the codes are created during the process instead of fitting the data to pre-determined codes, and the cyclical re-coding process helps link the emerging themes, and to further manage, filter, highlight, and focus the salient features from the data (Saldaña, 2021, p. 12). During the process of data analysis, interpretation and working on the proposed communication tool, I continuously reflected the data to the existing theories. Due to this logic, the analysis moved between induction and abduction, instead of pure induction (Flick, 2008, p. 153).

In pre-coding, the significant quotes and descriptive comments worthy of attention were highlighted and saved for later use. During the first coding cycle, the data was coded based on broader topics and tentative codes. The analysis included a constant comparative process between the data to theoretical explanation, and in the later cycles the codes were further defined based on the connections to the existing theories and deeper understanding of the emerging issues. Eventually, the codes were clustered into themes and mapped to find the revelatory interconnections. The Appendix 2, Ecosystem Overview, presents the findings based on the emergent themes and positions each ecosystem in parallel with other ecosystems.

### **3.6 Trustworthiness and limitations of the study**

Qualitative research is traditionally evaluated through notions of validity, reliability, and generalizability. These evaluation criteria do not fit very well to research that relies on subjectivist epistemologies, where it is acknowledged, that both researcher and participant are jointly creating understanding of the research topic (Eriksson and Kovalainen, 2008, p. 294.). In qualitative research that bases on subjectivist epistemology, the subjectivity has a value – both participant and researcher are reflecting their own views to the data, and the interpretation of the data is constructed by both and every study is time- and context-bound. (Farquhar, 2012, p. 7) Hence, instead of reliability and validity, I evaluate this study through parallel concept of trustworthiness.

The concept of trustworthiness contains four aspects: credibility, transferability, dependability, and conformability. Credibility is derived from the researcher's familiarity with the topic, correct use of data and strong logical links that support the interpretations. Transferability shows the degree of similarity compared to earlier research to establish connection to previous results. Dependability refers to researchers' responsibility to describe the research process accurately and transparently to the reader, and conformability is about linking findings and interpretations to the data in ways that are easy to understand. (Eriksson and Kovalainen, 2008, p. 294.)

Trustworthiness of the study should be evaluated by the depth in which the analytic interpretation catches the truth in the matter, and soundness of research design (Farquhar, 2012, p. 7). To reach high quality, I have used following indicators, adopted from Thomas (2011), to self-evaluate the study continuously during the research process:

- clarity of expression
- rationale of research questions
- conveniency of research methods
- the account of the research process
- the formulation of claims.

Clarity of expression refers to matters, that make the study accessible and understandable: quality of writing, consistency of terms, well-constructed sentences and figures, and providing further definitions when necessary. The second indicator, clear outlining the research questions and providing the sufficient rationale for their significance, is what justifies the study. Evaluating the convenience of the research methods directs the selection towards methods that are effective and appropriate, and providing sufficient amount of information related to the research process helps the reader to assess the quality. The last indicator refers to clarity of the claims – the relations between claims and evidence, the overall understandability, and sufficient explanation of the nature of each claim. (Thomas, 2011, pp. 66-67.)

Besides self-evaluation, the research quality was advanced through triangulation – approaching the studied phenomenon from several different angles and combining information from different sources. In this study, the main forms of triangulation used were triangulation of data and theories: supplementing the interviews with data from additional sources such as ecosystem websites, funding applications, reports, and presentation materials, and using several theories in explaining, understanding, and interpreting the case. Triangulation diversifies the understanding of the topic and helps to find the confirmation for the results and their interpretation. (Eriksson and Kovalainen, 2008, p. 294.)

Validation for the results was also searched through feedback (Kananen and Gates, 2011, pp. 68-71), that was asked of the interpretations from people involved in the process. The summary of the preliminary findings was presented to the interviewees in a joint online meeting and wider summary material was sent to all participants. The interviewees had an opportunity to comment the results and give feedback during the meeting and after it.

As discussed in the theoretical part of this thesis, the rise of the ecosystem concept within research and in practice has significantly accelerated during the past decade. Despite the increased interest, the real-life innovation ecosystems are still quite rare, which affected the possible sample size and

limited the access to existing data. Despite their substance differences, all the studied cases are operating in the orbit of same organization and might offer a limited view on ecosystem practices and operations. The downside of studying small number of cases is that the results cannot be extended to other situations (Farquhar, 2012, p. 7). In the other hand, case study research does not aim for generalization – its main advantage is, that it digs deep into a single unit or small number units and provides a rich picture of it. Together with previous and future studies of the same field, individual case studies are building profound knowledge. (Thomas, 2011, pp. 23, 62.)

In the case level, the selection of interviewees was restricted to the ecosystem coordinators. In some of the ecosystems the communication was managed by someone else in the core group or outsourced to a professional or an agency. The interviews of the communication professionals working closely with the ecosystems might have offered different angles to the subject. Being one of the communication practitioners within the studied ecosystems, my existing experiences undoubtedly influence the way I interpret the collected data. In the epistemologies I base my study on, the role of researcher as a constructor of data and theories is acknowledged (Flick, 2008, p. 154), and by thorough representation of research process and the results I aim to tackle the possible bias created by my previous experiences of ecosystem communication.

## 4 Findings

This chapter focuses on the main findings of the case study and aims to find the common nominators to answer the research questions. The structure of the chapter follows the order of the research questions, starting with ecosystem management, moving on to ecosystem communications and strategy in general, and after that presenting observations on how communication is used to reach ecosystems' strategic targets. In subchapters of each topic, the subject-specific challenges and differences between the studied cases are described in more detail. The discussion in the end of the chapter summarizes the findings and presents the implications based on them. Summary of the individual cases is reported in Appendix 2 Ecosystem Overview. Direct quotations from the interviews are used to support the findings. The quotations have been translated from Finnish to English, and original expressions can be found in the footnotes.

### 4.1 Ecosystem management and organizing

The interviews clearly point out that the studied ecosystems are all unique in terms of how they are compiled, orchestrated, and organized. In practice, all the ecosystems have created their own structures, rules, and ways of working, and therefore have significant variances on operating models. None of the ecosystems was built on a single defined ecosystem-model or theoretical framework. Instead, all ecosystems combined elements from different collaboration models and past experiences. Management models and ecosystem theories were used in the ways, that were most beneficial for the particular innovation ecosystem, or expected from it. Openness, transparency, and mutual trust were important factors in creating the ecosystem operations.

Ecosystem as such is open: the affiliation criteria is activity. All the actors have long history of operating in different ecosystems, and they know, what is working and what is not. The operating model is self-created, based on the earlier experiences. (Ecosystem C)<sup>1</sup>

A recommendation for attitude: you cannot keep dwelling in your own ideas, that's not a way forward. One must be brave, and have ability to altruistically share things, even if you don't know whether that's going to be beneficial for you or not. Openness and courage to converse and take comments is crucially important. (Ecosystem H)<sup>2</sup>

Defining the ecosystem type was in some cases challenging and did not seem to have much significance for the interviewees. Even the ecosystem concept as such did not appear relevant for all of

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<sup>1</sup> Ekosysteemi sinällään on avoin: kriteeri mukaantuloon on aktiivisuus. Toimijoilla on pitkä tausta ekosysteemeissä toimimisesta, tiedetään mikä toimii, mikä ei. Toimintamalli on synnytetty itse, historian kautta. (Ekosysteemi C)

<sup>2</sup> Asennesuositus: ei voi jäädä hautomaan omia juttuja, sillä tavalla ei pääse eteenpäin. Pitää olla rohkea ja jakaa omaa juttuaan, jakaa omasta hyvästäan, vaikka ei tiedä sataako se omaan laariin. Avoimuus ja rohkeus keskustelulle ja kommenteille on todella tärkeää. (Ekosysteemi H)

the interviewees. Instead of referring to ecosystem, some coordinators preferred to call their entity a 'network' or 'cluster', despite the ecosystem-specific features the collaboration was based on, such as aim for system-level output.

We are not really an ecosystem, but a network, and that is fine. Originally, the management (of my organization) initiated it with a term ecosystem, but with this sort of mission, there is perhaps no point of aiming to become an ecosystem. Or maybe there could be in future if a good business opportunity would loom somewhere. The holistic approach we have requires collaboration within the network, and the whole point is, that we complete each other's knowledge and skills. The challenge we are trying to solve is too complex for anyone to tackle alone. (Ecosystem H) <sup>3</sup>

All of the innovation ecosystems covered in the interviews were created 'artificially': instead of forming solely by mutual interest between actors in the same field, there was a clear commission to create an ecosystem, initiated either from the upper management of the coordinating organization or from other external institutions. In two out of seven interviews, the industry demand was mentioned to be the reason for setting up the ecosystem, but an initiating organization still had a role in ecosystem creation.

In the studied ecosystems the decision-making power is concentrated and centralized. Ecosystem coordinators have a significant role on creating the ecosystem and defining its general direction, as well as managing and orchestrating the work within the network. The orchestration is guided by their previous experiences of collaboration and individual expertise, and the coordinator's handprint on ecosystem practices is often distinguishable.

The management (of my organization) gave me a carte blanche to build an innovation ecosystem. We started very agile and light and followed the principles of lean method, meaning that we did not start by building administrative structures, but by defining the reasons why the organizations would join the ecosystem, and these reasons are the core of its operation. (Ecosystem F) <sup>4</sup>

All, except one, have some sort of steering group or board, that holds the final decision-making power but in practice, the steering group work is often quite ceremonial. For example, the practical choices related to collaboration, administration and communications are usually done either by defined ecosystem core-groups, or by the coordinators themselves.

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<sup>3</sup> Ei olla varsinaisesti ekosysteemi, vaan verkosto, ja se on ihan ok. Alun perin johto on käynnistänyt termillä ekosysteemi, mutta tämäntyyppinen missio ei ehkä voi edes olla ekosysteemi. Tai ehkä voi, jos joku hyvä business siintäisi jossain tulevaisuudessa. Holistinen ajattelutapa vaatii verkostoa, ja koko pihvi on se, että tuodaan monipuolista osaamista yhteen. Yhden toimijan toimesta näin kompleksinen ongelma ei ratkea. (Ekosysteemi H)

<sup>4</sup> Sain (oman organisaation johdolta) vapaat kädet rakentaa innovaatioekosysteemiä -- lähdettiin liikkeelle todella agiilisti ja kevyesti ja leanin periaatteen mukaisesti, että ei lähdetä ensin rakentamaan hallinnollista häkkyrää, vaan lähdetään siitä ytimestä, että miksi yritykset tulisivat ekosysteemiin mukaan. (Ekosysteemi F)

Maybe in some cases I have made quite daring by-passes (of the steering group). I cannot expect them to be involved in everything, the calendars are fully booked and all. (Ecosystem G) <sup>5</sup>

#### 4.1.1 Challenges related to management

According to the coordinators themselves, the coordinators' role in ecosystem management has turned out to be wider than expected, and one of the repeated key-learnings from the interviewees was, that one should not try to orchestrate an innovation ecosystem alone. While orchestrating the ecosystem, the coordinator is often expected to manage the administration as well as perform as a communications specialist, designer, key account manager, business developer and thought leader, and to be always reachable. At the same time, the managerial power of the coordinator is limited, and the lack of legal entity limits the independency of the ecosystem. For example, ecosystem coordinators do not have hierarchical power over ecosystem partners or a mandate to sign contracts on behalf of the ecosystem, and they cannot purchase licenses or create accounts that require a legal entity.

At this point, when new operations are initiated, the communication challenge is that there are numerous contact requests and only one coordinator. I try to be involved in all actions, so that someone knows everything about what's going on. Because someone needs to hold the reins. (Ecosystem F) <sup>6</sup>

Based on the interviews, the readiness for ecosystem way-of-working in member organizations varies a lot. The organizations and individuals, that have previous experience on ecosystem work, have generally better ability to cooperate. In the other hand, the ecosystem way-of-working has proven to be hard even at the interviewees' own organization: support functions are often sized to serve organizational needs only, and the pipelines for sales, communication and marketing departments are inadequate.

(Ecosystem readiness) depends on organization and person. When we started, it felt that there was no readiness for ecosystem collaboration, not even at our end. Now the capabilities have increased, as the number of ecosystems has risen, and organizations have started to figure out, that it is just another way of collaborating. <sup>7</sup> (Ecosystem B)

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<sup>5</sup> Ehkä olen tehnyt joissain asioissa liian pitkälle vedettyjä ohivetoja tai ne on jo tottunut siihen. Mä en voi odottaa heitä kaikkeen, ja kun kaikilla on kalenteri aivan täynnäkin.

<sup>6</sup> Tässä vaiheessa viestinnän haaste, että nyt kun aletaan uutta vetämään, niin yhteydenottoja on valtavasti, mutta vain yksi koordinaattori. Yritän olla mukana kaikessa, että olisi joku, joka tietää kaikesta kaiken. Kun jollain pitää olla ne langat käsissä. (Ekosysteemi F)

<sup>7</sup> (Valmius ekosysteemitöihin) riippuu yrityksestä, riippuu tahosta. Kun aloitettiin, niin tuntui, ettei ollut valmiutta, ei myöskään meillä. Nyt kyvykkyyks on kasvanut, on tullut lisää näitä ekosysteemejä, ja on alettu ymmärtää, että se on vain yksi tapa tehdä tätä yhteistyötä. (Ekosysteemi B)

#### 4.1.2 Differences between the studied cases

The studied ecosystems have significant variation in size: smallest networks have only a handful of core members, and the biggest ones spread out to more than 100 organizations, some of them loosely attached “hang-around” members, some more tightly involved core members. Among the covered ecosystems, the ones with wider network have a wider operational focus, more open operation model, and difficulties with agenda fragmentation.

The ecosystems represent different stages of ecosystem life cycle, most of them either in stage between birth and expansion or in stage of self-renewal / death. None of the ecosystems represented the stage of leadership. The ecosystems, that are established more recently, have clearer vision of the operating principles and common rules. In more mature ecosystems, the operation models have developed and changed during the ecosystem lifetime. In cases, that are in conscious stage of self-renewal, the operative model was developed to answer the changing needs. In ecosystems, where the development towards the stage of self-renewal was more of a surprise than planned action, there was more confusion about the operative model.

In one of the studied ecosystems, the management challenges were substantial. Finding common grounds between the coordinating organizations had turned out to be very difficult, and instead of cooperation, each organization was looking after their own interests and the level of mutual trust was low.

#### 4.2 Approaches to communication

The interviewees’ approaches on the ecosystem communication were in general very practical: telling, what the ecosystem is doing and why, was considered important. Brand and visual image, events, and frequent attempts to reach out for wider publicity form the core of communication activities in most of the studied ecosystems. The means of communication and communication channels used in covered ecosystems are quite similar: webpages, social media channels, newsletters, e-mailing lists, internal teams-channels. One of the ecosystems has co-created an online platform for internal and external co-creation.

The most important thing is to reach the listeners. That is why we are doing it (communication), to be able to tell what is happening in the ecosystem and to be able to raise the topics to (public) conversation. (Ecosystem B) <sup>8</sup>

(Important for ecosystems’ communication are) visual image, and events, ecosystems need to have events either to members or more loosely to society, if the ecosystem is open. Social

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<sup>8</sup> Tärkein asia on tavoittaa kuulijat. Sitä varten sitä tehdään, että voidaan kertoa mitä siellä ekosysteemissä tapahtuu ja voidaan nostaa niitä aiheita sinne keskusteluun. (Ekosysteemi B)

media channels, and the decisions related to them, how they are managed. Communication needs to be frequent, not “addressed when remembered”. Communication is too often underestimated, like how much of it is needed (Ecosystem G).<sup>9</sup>

The ways of approaching communication within the studied ecosystems can be divided to either functional, constitutive or combination of these two. The categorization is based on the interviewees' perceptions of what is included on the ecosystem communications, what is important for the ecosystem to achieve through communication, and how the ecosystem in general is compiled. For example, some of the coordinators saw communication first and foremost as actions, that build the mutual trust and enhance the cooperation by creating shared understanding over what the ecosystem is doing, and some emphasized firstly the communication campaigns and other operative communication actions.

In the interviewees' responses to the communication related questions the operative communication activities stood out, but the importance of more informal communication came up in other parts of the conversations. All the interviewees acknowledged the importance of communication in terms of ecosystems' success and saw the orchestrator's role significant in creating favorable grounds for cooperation and stakeholder relationships. The trust between the actors, shared understanding, and ability for decision-making was seen dependent on communication.

In the beginning there was no connection and mutual understanding between the actors, even disputes occurred. Lots of meetings were arranged, and common events, and these guided the actors to figure out, how it works. (Ecosystem D)<sup>10</sup>

Under the surface, there is a lot of communications that are totally informal. In different meetings and other encounters all sorts of non-planned human-to-human communication takes place. (Ecosystem A)<sup>11</sup>

The budget for communication and marketing came either from the project funding, from the ecosystem members or internally from the coordinator's organization. In the studied cases, internal funding had its limitations: for example, it could not be used for advertising. In externally funded communications, the funding instrument usually set some expectations for the communications

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<sup>9</sup> (Tärkeää ekosysteemin viestinnälle:) visuaalinen ilme, samoin tapahtumat, niitä pitää olla joko jäsenille tai väljästi yhteiskunnalle, jos pidetään avoimina. Somekanavia, niistä tehtyjä valintoja ja miten niitä pyöritetään. Pitää olla säännöllistä, ei silloin kun joskus muistetaan. Viestintä on usein aliarvioitu, että kuinka paljon sitä tarvitaan. (Ekosysteemi G)

<sup>10</sup> Alkuun oli sellainen tilanne, että alkuun ei ollut toimijoiden välillä kunnon yhteyttä, oli jopa riitoja. Järjestettiin paljon tapaamisia ja yhteisiä tapahtumia ja annettiin osallistujien hoksata, miten homma toimii. (Ekosysteemi D)

<sup>11</sup> Paljonhan siellä on pinnan alla viestintää, joka on hyvin informaalia, että eri palavereissa ja muissa tapahtuu koko ajan sellaista ei niin suunniteltua ja ihmiseltä ihmiselle tapahtuvaa viestintää. (Ekosysteemi A)

executed: for example, a plan for the communication activities was required in funding application, and results needed to be reported afterwards.

#### 4.2.1 Challenges related to communication

According to the interviews, the biggest challenges in communication are related to lack of resources, both in terms of money and professional support. The coordinators are focusing on keeping the ecosystem up and running, and communication is a secondary task. The time allocation and outlining what is impactful and what is not was considered problematic.

The challenge in communication is the lack of resources, and the fact that the focus has been in other things than developing communications. Communication is also difficult. Teams-channels have been in use the whole time and that is good, but how to get the message really through in such a big group? (Ecosystem F) <sup>12</sup>

When it comes to communication, there is always many opinions – it is always balancing between what is too much and what is too little. One communication challenge is the time allocation. What kind of communication effort will bring the biggest impact? (Ecosystems D & E) <sup>13</sup>

Especially in the more loosely connected ecosystems, there are difficulties to prioritize the strategically most important stakeholders and key messages. The ecosystems that were focusing on big systemic changes saw all possible stakeholders equally valuable and considered stakeholder prioritizing to be against the democratic starting point for the cooperation. The unfocused view of the most important stakeholders caused trouble in finding the most convenient channels and communicating the key messages clearly.

(Target group) is quite dependent on what kind of activities we are dealing with. It cannot be defined, which stakeholder group is the most important. (Ecosystem C) <sup>14</sup>

#### 4.2.2 Differences between the studied cases

In two of the studied ecosystems the communication was clearly seen as a constitutive element for the ecosystem existence. Three ecosystem coordinators presented views that combine constitutive and functional approaches and two had mainly functional approach. In one ecosystem the approach was overall unclear. Often the approach to communication did not necessarily show in

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<sup>12</sup> Haaste viestinnässä on ollut resurssien puute ja se, että painopiste on muualla kuin viestinnän kehittämisessä. Viestintä on vaikeaa. Teams kanavat on olleet käytössä koko ajan, se on hyvä, mutta se, miten saa oikeasti viestin kulkemaan noin isoissa porukoissa? (Ekosysteemi F)

<sup>13</sup> Viestinnässä aina on paljon mielipiteitä -- aina taiteilua, että mikä on sopiva määrä viestintää. Ehkä viestinnällisesti haaste on, että mihin kaikkeen käyttäisi aikaa. Mikä tuo sen isoimman impaktin? (Ekosysteemit D & E)

<sup>14</sup> Aika paljon riippuu toiminnasta, että minkä kaltainen aktiviteetti meillä on käsissä. Ei voi määritellä mikä kohderyhmä on tärkein. (Ekosysteemi C)

particular communication strategy or operational communications planning – mainly because the resources are limited, and communication within the ecosystems is managed rather intuitively. However, approach differences reflect the interviewees' general perceptions about communication.

In the studied innovation ecosystems, there seems to be connection between the stage of development and the communication approach: ecosystems, that are closest to the stages of birth and expansion tend to emphasize the internal communication and knowledge sharing over brand building and external communication, and ecosystems that are nearing self-renewal or death highlight the importance of brand and reaching audiences wider than just the ecosystem network.

The consortium is quite fresh. Communication has supported the building of basic operations. The importance of the communication is well understood, and in the future, we aim towards continuous communication efforts – if there is no visibility, there is no ecosystem. But there is still a lot to do and to develop. (Ecosystem C) <sup>15</sup>

Communication strategy and tactic is very much reliant on the stage we are in. Much of it is also expectation management. We have to balance between selling the dream and not over-selling it. Now we have to really think, how the next stage is going to work, so that in the future we are not just fixing the damages. That is why communication needs to be included in the strategic development: so that we know where we are now, and where we are heading. (Ecosystem A) <sup>16</sup>

The ecosystems that have more closed and centralized operating model and strong project orientation, seem to emphasize the importance of the internal communication more than the ones that operate in more open manner. Vice versa, the more open ecosystems emphasize the brand communications, wide visibility, and external stakeholders more than the project-oriented ecosystems.

Of course, the members want to join a winning team. I see that it is super important for the ecosystems to work on their brand image. It has been confusing, how important it is, that the ecosystem has a brand to which organizations despite the size can identify. (Ecosystem A) <sup>17</sup>

In four of the ecosystems the main communications responsibilities were outsourced to a freelancer or communications agency. In one ecosystem, there were no systematic planned communication activities besides commonly organized events, and no assigned responsibility over

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<sup>15</sup> Yhteenliittymä on aika tuore. Viestintä on tukenut perustoiminnan rakentamista. Viestinnän merkitys on ymmärretty hyvin ja tulevaisuudessa pyritään jatkuvaan viestintään - jos näkyvyyttä ei ole, niin toimintaa ei ole. Mutta paljon tekemistä ja kehitettävää on. (Ekosysteemi C)

<sup>16</sup> Viestintästrategia ja taktiikka on todella paljon siitä kiinni missä vaiheessa ollaan. On myös paljon odotustenhallintaa. Joudutaan vähän taiteilemaan sen välillä, että myydään unelmia ja toisaalta ettei mene yli. Nyt mietitään, miten seuraava vaihe toimii, ettei tulla vaan perään korjaamaan vahinkoja. Sen takia viestinnän pitää olla strategisessa kehityksessä mukana, että tiedetään missä mennään. (Ekosysteemi A)

<sup>17</sup> Tottakai ne toimijat haluaa sellaisiin voittajajoukkueisiin. Mä nään, että se on hirveen tärkeää se brändityö näihin ekosysteemeihin. Se on ollu hämmäntävää, miten tärkeää se on, että sillä ekosysteemillä on se oma brändi, johon on helppo kiinnittyä pienen tai suuren yrityksen. (Ekosysteemi A)

ecosystem's communications. Three ecosystems had found internal resources to help, one from the communications department, two from elsewhere in the organization.

### **4.3 Advancing strategic targets through communication**

Based on the interviews, systematic approach to the overall strategic targets in ecosystems does not have clear connection to the strategic approach in communications. More relevant to the strategic communications approach seems to be the way communications is resourced: generally, the communications were more comprehensive and systematic in cases, where the funding instrument requires it, or when the main responsibility of planning the communications was directed to a communications professional.

The connection between communications and the ecosystems' strategic targets was overall faint in all cases except one. One ecosystem has built the service design approach into its operations, which has led to more systematic target setting and monitoring of all the actions, including communications. For example, in case of ecosystem events, it is not only monitored how many attendees joined, but also how the members think about the events in long term, and how the opinions develop, and what kind of impact these have on overall success of the ecosystem.

#### **4.3.1 Challenges related to strategic communication**

In general, the impactful communication as a part of reaching the targets was considered challenging. The coordinators were also balancing between the dynamic nature of the overall targets and limited communication expertise.

Like you can see, I am not a communications professional. Perhaps the communication has not been planned as well as could have been, even on tactical level. But to be able to plan strategically and tactically, the targets should be quite clear, you cannot build an operational plan, if there are no targets. (Ecosystem H) <sup>18</sup>

All the interviewees considered that their ecosystem had at least some sort of strategy, but the level of practicality, visionary approach and structure varied.

Roadmaps should act as basis of strategy, that's why they have been created. How original the thinking within these roadmaps is – in part it might be, in part not. In the roadmaps we

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<sup>18</sup> Kuten näkyy niin en ole viestinnän ammattilainen. Mutta ei siis varmaan ole taktisestikaan mietitty niin hyvin kuin olisi voinut. Mutta jotta voisi strategisesti tai taktisesti suunnitella, niin pitäisi kai olla aika kirikkaana mielessä tavoitteet, ei voi rakentaa toimenpidesuunnitelmia, jos ei ole päämääriä selvillä. (Ekosysteemi H)

have focused on the most important things, but they don't rule other subjects out. (Ecosystem H) <sup>19</sup>

Yes, now that I try and think of it, there was a task related to that (strategy implementation). In the action plan there was written something, like how we begin to set this up etc. But I really have to think of it, there were so many documents we wrote. (Ecosystem D) <sup>20</sup>

Three ecosystems had defined the most important themes in their field of operation, formed working groups, and compiled thematic roadmaps for the working groups to implement. Two had action plans and key-performance-indicators, that set the targets for strategic actions. In two ecosystems, some strategic plans had been made, but they were not implemented. In one ecosystem the strategy approach was very iterative and intuitive and did not result in any documented form of strategy – with the consequence, that it was not clear, if the members of the ecosystem would fully sign it or attach to it.

#### 4.3.2 Differences between the studied cases

The ideas related to communication as a way to advance strategic targets were not systematically implemented in any of the covered ecosystems, but in some cases the approach was closer to strategic communication than in others. Two of the interviewees identified some strategic targets that were intentionally aspired through communications.

The ecosystems covered in the interviews presented both the more intuitive and more planned strategy-making processes. The ecosystems, that are closely tied to the industry and where the private sector organizations have more role in the administration, the scope of operation was narrower and the approach to strategy more deliberate. Wider and more loosely tied ecosystems consider their work so dynamic that strategies are not needed or see that the operating environment is continuously under such changes that the methodically worked, comprehensive action plans are outdated as soon as they are drafted. This approach leads to more emergent strategizing, which allows agile planning and reorganization when needed, but makes it more complicated to create mutual understanding of the common aims.

Maybe one of the learning experiences, that relates to these ecosystems, is that compared to other organizations and enterprises it is different how the concept of operation, strategy, goals

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<sup>19</sup> Roadmapien pitäisi toimia strategiana, sen takia ne on luotu. Se, kuinka originellia ajattelu näissä on, osittain ehkä on, osittain ei. Tiekartoissa keskitytty tärkeimpiin asioihin, mutta ne eivät rajaa muita ulos. (Ekosysteemi H)

<sup>20</sup> Joo nyt kun muistelen, niin siihen oli joku toimenpide (strategian toteuttamiseen). Toimintasuunnitelmassa oli, että miten näitä lähdetään pystyttämään jne. Mut mut, täytyy ihan muistella, oli niin paljon niitä dokumentteja mitä tehtiin. (Ekosysteemi D)

and even operation models change over time. And they should, for the ecosystem to stay alive. (Ecosystem A)<sup>21</sup>

## 4.4 Discussion

The aim of the case study was to observe and analyze the approaches, that innovation ecosystem professionals have on management, communication, and strategy in their ecosystem, and to answer following research questions:

- How are innovation ecosystems organized and managed?
- How is communication planned and managed in innovation ecosystems?
- What is the role of communication in reaching the ecosystems strategic targets?

The study revealed that the ecosystem management is centered around the ecosystem coordinators, who have significant role in defining the operations and leading the collaboration. The ways of working are formed by coordinators and the ecosystems' core groups and are characterized both by the actual needs of the ecosystem actors and external requirements presented by funders and initiating organizations.

Communication in the studied ecosystems is managed rather intuitively. Interviews revealed that communication is seen as a fundamental element for the ecosystems' existence, but the approach to planning and executing communication activities is quite functional and focuses on operative communication. The approaches to strategy and strategizing vary from strictly deliberate to highly emergent. In the studied ecosystems, communication was not intentionally used as means to advance strategic targets. Some of the ecosystems could identify strategic targets that had been acquired through communication, but the approach was not systematic.

The ecosystem level summary of the central findings related to the research questions is presented in the Appendix 2. Ecosystem Overview.

### 4.4.1 Relation to previous research

Based on the interviews, the studied innovation ecosystems clearly reflect the uniqueness, that research states to one of the characterizing elements of ecosystems as such (Valkokari, 2015, p. 18). In principle, all the ecosystems covered in the interviews were manifesting the distinctive features, that the previous ecosystem research has recognized: aim for system-level output, cross-

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<sup>21</sup> Ehkä sellanen oppimiskokemus, joka näihin ekosysteemeihin liittyy, niin verrattuna muihin organisaatioihin ja yrityksiin tää toiminta-ajatus, strategia, tavoiteasetanta ja toimintaperiaatekin elää ajassa, ja sen pitääkin elää, jotta se pysyy käynnissä. (Ekosysteemi A)

sectoral collaboration, non-contractual relationships and at least some degree of interdependency between the actors (Thomas and Autio, 2019; Han *et al.*, 2022).

The aimed outputs in the ecosystems varied from pure knowledge exchange to innovation creation and economic outcomes, which indicates that the ecosystems were in fact representing different ecosystem types (Valkokari, 2015; Thomas and Autio, 2019). The results show, that in practice the ecosystem type was often either unclear or irrelevant to the coordinators, and the ecosystem type was not essential element in ecosystem communication or management. According to ecosystem typology by Thomas & Autio (Figure 2) all the studied ecosystems fall under innovation ecosystem label, as they aim for co-creation and co-production of value.

The earlier research has noted the effect the ecosystem development stages have on the ecosystem operations (Thomas and Ritala, 2022; Han *et al.*, 2022; Moore, 1993), and the studied cases seem to confirm, that the stage of the ecosystem development has impact on the desired communication. However, in the studied selection, all the ecosystems that were in later development stages also had more open operative model and recently founded ecosystems had more enclosed operative model. The results do not reveal, if the communication emphasis has stronger correlation with operative model or development stage, but it is likely, that the emphasis is affected by both.

The existing research also indicates that there are factors that connect successful ecosystems, including sufficient level of coherency (Masaharu, Yuya and Yoichi, 2018, p. 55), mutual trust and smoothly functioning stakeholder relationships (Valkokari *et al.*, 2021, p. 11). In the interviews these factors rose to the surface when ecosystem communication challenges were discussed. The lack of coherency and trust and difficulties in prioritizing the stakeholders caused friction in cooperation and challenges in communication planning. In the other hand, the interviewees described how communication was increasing mutual trust and creating favorable grounds for cooperation.

#### **4.4.2 Summary Implications from the findings**

The biggest challenges in ecosystem management and communication seem to be related to the overall complexity of the ecosystems and insufficient resources. The lack of supporting organizational structures leads to situation, where the ecosystem orchestrators have significant power but also limited resources to deal with the daily tasks. Ecosystem management in general bases on market mechanisms, mutual trust and interdependencies between the actors (Vesalainen, Valkokari and Hellström, 2017, pp. 3-4), and based on the interviews, especially trust and the relationships between the ecosystem actors seem to be focal in building the ecosystems and their communication activities.

According to the case study, the communication emphasis in more mature ecosystems is on external communication and brand building, whereas in ecosystems that are recently founded, the focus is on internal communication and community creation.

Ecosystems in later development stages and with open operative models have aim for expansion, as in the earlier development stages and enclosed operation models the fluent flow of information and community creation stands out.

The communication management and planning in the studied ecosystems is not systematic, and the focus is on operative level: in planning and coordinating the daily communications. Interestingly, the underlying approach to communication seems to be more comprehensive in many cases. The ecosystem coordinators are acknowledging the constitutive importance the communication has on the ecosystems existence, and by leading the public and internal conversation to desired direction, are intuitively feeding the internal and external arenas of meaning-construction, which is also defined as one of the key-elements of strategic communication by Van Ruler (2018).

Based on the data, the ecosystems that leaned towards more emergent strategizing and less structured management processes reported difficulties in creating mutual understanding over common targets. Vice versa, the ecosystems with more deliberate strategy- and decision-making processes experienced higher level of consensus. This might suggest that deliberate strategy process would be better suited for ecosystems. In the other hand, it could also indicate, that clear and systematic plans and processes are easier to communicate to the ecosystem actors.

The acquired results support the earlier theories regarding to the importance of ecosystem coherency and trust as important factors of ecosystem's success. Common understanding of the targets and the ways to reach them, as well as courage to be open and transparent in sharing the knowledge and ideas were considered as key elements for mutually beneficial cooperation.

The results also revealed that the ecosystem initiators have impact on the ecosystem in terms of substance and management. However, it is beyond the scope of this study to assess, how the ecosystems management and communication practices were affected by the initiating organizations' expectations and shifts in strategic emphases. Another finding, that falls out of the research scope is the impact of funding, which also seems to have a significant role in the way the ecosystems operate.

#### **4.4.3 Recommendations**

The results indicate that the ecosystems could benefit from more advanced communications planning. According to the interviews, the communication is often limited to very practical level, and the

communication actions are not linked to the overall strategic targets, which limits their impact. The case study revealed that real-life ecosystems are orchestrated with limited resources, and the orchestrator has a crucial role in managing ecosystem operations, including communications. Based on the theoretical background and the case study, I suggest, that communication can accelerate the success of an ecosystem by increasing coherency within the ecosystem, building mutual trust, and fostering stakeholder relationships, and aligning these actions with overall strategic targets.

Ecosystem communication management could also benefit of a science-based tools, that help to evaluate and plan communications efficiently. The primary role of an ecosystem coordinator is to keep the ecosystem up and running, and even when the importance of communication is acknowledged, it is difficult to find the time and capable resources to manage communications systematically. In the other hand, communication management in general is often based on practical experiences and personal expertise, even among the communication professionals, and science-based management tools that support communication planning are rare (Volk and Zerfass, 2021, pp. 53-54). To fill the gap, I will next present a communication process model for ecosystem communication.

## 5 Proposed tool for enhancing ecosystem communications

This chapter presents practical tool for planning and evaluating ecosystem communications. The principles of the proposed solution come from the theoretical framework and are directed by the conducted interviews. The aim is to form practical ecosystem-oriented guidelines that help to manage the communication within the network and to align the communication activities with the general ecosystem strategy.

### 5.1 The development and key-principles behind the ecosystem communication tool

The proposed tool for ecosystem communication is built on basic principles of management tools: the aim is, that it will produce comprehensible information, that simplifies complex problems and support decision-making (Volk and Zerfass, 2021, p. 51). In this case, the tool is a pre-defined process, that helps the decision-makers to plan and assess the ecosystem communication and to focus on the most impactful communication actions. The process was compiled by reflecting the results of the case study to the literature review, and based on the indications, combining the most critical communications related observations.

According to the conceptual framework presented in the previous chapters of this thesis, innovation ecosystems are not uniform – in fact, there are significant differences in internal practices, aimed outcomes and ways the network of actors is organized and developed, both according to existing literature and the conducted case study. Hence, as a first step of the process it is necessary to evaluate the ecosystem-specific features, that define the ecosystem operations.

Based on the existing research and the conducted case study, the central communication-based variables in which the ecosystems success is dependent on are ecosystem coherency, mutual trust, and stakeholder relationships. Mapping these variables in terms of the ecosystem-specific features forms a second step of the process. The mapping is conducted on a communications canvas template, which provides a visual representation of the things to consider in communication planning in strategic, tactical, and operational level.

The model I am proposing for ecosystem communication is based on the understanding of the ecosystems specific key features and their effect on ecosystem communication, and applying these features in communication actions, that have positive impact on mutual trust, coherency, and stakeholder relationships. The process begins with current state evaluation, where the ecosystems general communication framework is determined. After the current state evaluation, the communication activities that support the focal elements of ecosystem communication are defined on a

canvas, which guides the communication planning on strategic, tactical, and operational levels. The process is pictured in Figure 6.

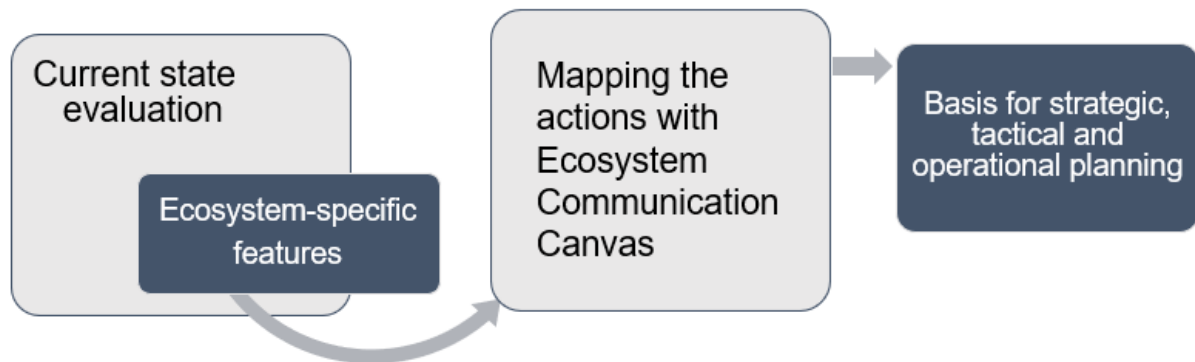


Figure 6. The ecosystem communication process

### 5.1.1 Current state evaluation

To orchestrate ecosystems and ecosystem communications efficiently, it is crucial to understand the complexity of the ecosystem dynamics (Launonen and Viitanen, 2011; Valkokari *et al.*, 2021). However, behind the complexity, there are some features common for all innovation ecosystems. Understanding the ecosystems aimed output, tendency to develop in distinct phases, operative model, and joint targets can help to manage the ecosystem communication, understand the interdependencies between the actors, and nurture the common collaborative interfaces.

Evaluating the current state of the innovation ecosystem is a procedure, that helps to put the ecosystem on map in regards of these features. The aim is to draft general guidelines for the ecosystem communication emphases based on ecosystem's aimed outputs, phase of operation, operative model, and strategic targets. In the current state-evaluation the key-steps are:

- Defining the internal flow – what is the main output the ecosystem aims for?
- Defining the ecosystem phase – is it closest to birth, expansion, leadership, or self-renewal (or death)?
- Defining the operative model – how open / closed and centralized / decentralized the ecosystem is?
- Defining the overall strategic targets – what are the common goals of the ecosystem?

Defining the internal flow clarifies the purpose of the ecosystem and helps to understand what kind of relationships it should foster. According to research, the aim for collective output is one of the features that differentiates ecosystems from other collaborative networks. The different types of aimed output – for example innovation, knowledge, or economic outcome – require different

internal flows (Valkokari, 2015, p. 18) and involvement of different stakeholders to involve in the ecosystem actions. Understanding the internal flow helps to define, who in fact are the salient stakeholders for the ecosystem, and what kind of collaboration interfaces the ecosystem should enhance.

Based on the conceptual framework, innovation ecosystems are evolving through different stages from birth to self-renewal or death (Moore, 1993), and the case study indicates, that needs for communication are different in each phase. In the earlier stages the network of ecosystem actors and operational practices are forming. This directs the emphasis of communication actions towards community creation: engaging the actors and creating shared understanding of the common goals. In stages of expansion and leadership, brand building and external audiences gain importance, as innovation ecosystem is aiming to justify its relevance and place in the market. In stages of self-renewal and death, the ecosystem is either redefining itself or deteriorating. This stage might lead to confusion and dispersion, which might be avoidable by yet again engaging the actors with effective internal communication.

Clear understanding of the ecosystems operative model helps to assess the type of communication needed. Due to the dynamic nature of the ecosystems and lack of hierarchical power (Vesalainen, Valkokari and Hellström, 2017, pp. 3-4), the responsibilities are not as easy to allocate as in traditional organizations. Yet the ecosystem orchestration and management play a key-role in ecosystems' success. Defining the operative model can help to arrange the resources efficiently and to decide, what is the emphasis of the ecosystem communication – should the ecosystem focus firstly on community creation and internal flow or reaching external audiences and building brand image? Explicit and univocal operative model that can be easily communicated to the ecosystem actors also forms basis for the coherency and mutual trust.

Strategic targets set the direction for the ecosystem operations. Clear vision of the ecosystem's common goals is crucial for planning the communications in a way that enhances the ecosystem's strategic positioning. Understanding the goals makes it possible to plan communication in strategic level, that aims for long term impact and is the foundation upon which the tactical and operational communication planning is built on (Falkheimer and Heide, 2018, pp. 56-57). The case study revealed that the lack of well formulated strategic targets complicates the communication planning, which leads to situation where the overall impact of communications is low.

Aligning ecosystem communications with the strategic targets, ecosystem outputs and ecosystem phase helps to create contents that are relevant for the salient stakeholders and improve ecosystems strategic positioning. The current state evaluation forms the basis for the comprehensive communication planning that support the creation of mutual trust, stakeholder relationships and

ecosystem coherency. Ecosystems are known to be dynamic, continuously developing entities, and therefore the evaluation should be done frequently.

## **5.2 Ecosystem Communication Canvas**

The next step in the process is to adapt the information acquired during the current state evaluation into Ecosystems Communication Canvas (Appendix 3). The idea of ecosystem communication canvas is loosely based on the Business Model Canvas by Alexander Osterwalder. The Business Model Canvas is a tool for mapping and designing business models and managing business model portfolio. It constitutes of nine building blocks, that are considered to be essential for all businesses: key partners, key activities, key resources, value propositions, customer relationships, customer segments, channels, cost structure and revenue streams. When the business specific attributes around these nine elements are brought into a single canvas, the basis of a business model is fitted into a single image. (.Strategyzer, 2022)

The Ecosystem Communication Canvas aims to bring together the key-elements that are vital for ecosystem communication. Like in the Business Model Canvas, the idea is to have the most important features presented in one page, that offers both a starting point for planning ecosystem communication from scratch as well as a checklist for regular evaluation. In this model, the key-elements of ecosystem communication are actions that increase coherency, actions that build mutual trust, and actions that foster stakeholder relationships.

Each element is evaluated by defining the current situation, the actions that are required in the near future and long-term target. This way, the model provides information for strategic, tactical, and operational planning of communications. First, by defining the long-term target in terms of trust, coherency and stakeholders, the user is determining the desired strategic impact of the communication. Second, by evaluating the current situation and possible emergent issues, the topics that need acute tactical reaction are revealed. The third step, the actions required in the near future, represent the operational level of communication and are derived from the long-term targets and tactical reactions.

### **5.2.1 Communication actions that increase coherency**

One of the central goals in ecosystem orchestration and management is creating management practices that accelerate productivity and help the ecosystem reach sufficient level of coherency (Launonen and Viitanen, 2011, p. 152). The coherency refers to the similarity of decision-making principles between the ecosystem actors and mutual understanding over how things are done within the ecosystem. High level of coherency correlates strongly with the ecosystem's vitality (Masaharu, Yuya and Yoichi, 2018, p. 55).

The first building block (Table 6) of the ecosystem communication planning includes the actions, that increase coherency. Coherency refers to similar behavior of ecosystem actors in terms of decision-making and collaboration practices. Domain similarity such as a common knowledge base and shared values are required to facilitate collective goal development and actors' commitment. High levels of social interaction are needed when actors try to jointly negotiate and agree upon the goals and necessary value-creating activities. One cannot hierarchically manage such interaction but only mobilize other actors through envisioning and framing. (Matinheikki *et al.*, 2017, p. 32.)

According to Matinheikki *et al.* (2017, p. 32) managers responsible for inter-organizational relationships are not managers in a traditional sense, but facilitate shared decision making instead. They orchestrate activities, that allow members to participate equally, making the network less vulnerable to member exits and changes in single firms' strategies. In order to encourage the active participation of ecosystem actors in the value co-creation process, efforts must be made to ensure a clear vision and a shared value base on which the ecosystem activities can be built. To support the ecosystem actors to make new connections and to share their knowledge and resources in concrete ways, the cooperation needs to be facilitated. (Ketonen-Oksi and Valkokari, 2019.)

In ecosystem communication, practical actions that increase coherency can be for example events that bring the key parties together to agree on the roles, responsibilities, and the shared vision. Mediating the process and providing hands-on support in networking, information exchange and cross-domain communication is part of the ecosystems communication activities that support coherency creation.

Table 6. The variables in the building block where the coherency increasing actions are defined

<b>Actions that increase coherency</b>
Current situation and major challenges
Where are we now in terms of coherency? What should change for the coherency to increase?
Things to focus on near future
What are the practical actions, that support the cooperation between ecosystem actors?
Long term target

### 5.2.2 Communication actions that build mutual trust

The second building block (Table 7) of the ecosystem communication planning includes the actions, that build mutual trust. Mutual trust is “the oil in the ecosystems’ machinery” – it enables the fluency of the collaboration. Mutual trust is a vital element of ecosystem management (Vesalainen, Valkokari and Hellström, 2017, pp. 2-3), and the observations from the case study indicate, that by systematic communication can increase the level of trust.

In general, trustworthy and ethically strong communication management and operational culture creates atmosphere for cooperation that is agreeable to all participants. Communication management that is ethically directed supports organizations in creation of successful operational environment and sustainable stakeholder relations. Ethically strong culture is built by leadership and transparency in all actions, not just communication. (Rydenfelt, 2014, p. 43.)

Table 7. The variables in the building block where the trust-building actions are defined.

<b>Actions that build mutual trust</b>
Current situation and major challenges
How high is the level of trust at the moment? Has the mutual trust been increasing / decreasing?
Things to focus on near future  What topics specifically need to be communicated to the ecosystem actors? Are there processes that need to be clearer?
Long term target

In practice, trust building communication actions in ecosystems can be for example frequently communicating over mutually agreed targets and practices, increasing the transparency by informing the members of relevant changes and decision-making processes, and intentionally supporting good communication culture.





creation of the shared values, vision, and guidelines, actions that build mutual trust focus on communicating these guidelines transparently.

For creating a results that are practically relevant, it is usually important to understand the theory of framework that guides the use of each specific management tool (Kaplan and Norton, 2008, pp. 10-11). In designing the tool my goal was to create a process that is simple enough to use without extensive knowledge on ecosystem and communication theories. In practice, at least a moderate theoretical knowledge of both the topics, innovation ecosystems and communication, is advantage for the user. The familiarity with relevant theories and possibly practical experiences of assessing, planning, and managing communication help the user to understand the situational relevance of each variable and to form rich picture of the ecosystem during the current state evaluation.

According to the conducted interviews, ecosystems are in general under resourced in terms of communication. The lack of resources might limit the possibilities to do extensive communication planning, which consequently limits the effectiveness of the suggested communication planning process. In the other hand, the process can be adjusted to the resources: instead of comprehensive planning, the user can focus on few targeted actions that are possible to manage with the allocated resources.

## 6 Conclusions

This chapter synthesizes the thesis by summarizing the conclusions, observing the key-take-aways and presenting suggestions for future research. The chapter also discusses the objectives of the thesis and practical relevance of the results.

### 6.1 Summary

As mentioned in the introduction of this thesis, the emergence of innovation ecosystems as phenomena is closely linked to the increasing complexity of contemporary societal and organizational challenges. During the research process, it has become clear that innovation ecosystems themselves are complex entities too.

Existing research has presented multiple ways to observe ecosystems and their functions, and at the same time real-life innovation ecosystems are forming their own unique practices and methods. Collaborative problem solving in ecosystems requires shared vision and mutual understanding of the ways to reach it. It is evident, that communication has a central role in creating both, but previous research does not offer clear views on how the ecosystem communication should be organized and managed. The results of the case study contrived to throw some light on the existing practices.

The case study revealed that ecosystem management in general is arranged in ways that are most beneficial to the ecosystem actors, and the ecosystem orchestrator has a central role in defining the operative model and ecosystem practices. Communication is understood as focal part in ecosystems' success, but the lack of resources and relevant knowledge limits the systematical communication planning and management. The limited resources and capabilities lead to practical communication approach, where emphasis is on operative communication actions, and the connection between communication and strategic targets is not clear.

The objectives in this thesis were to form a theoretical framework for observing ecosystem communications, and to apply it into a practical tool that can be used to support ecosystem communication management. The literature review confirmed that the specified knowledge over ecosystem communications is limited, but the research acknowledges many communications related factors that are crucial for the ecosystems' success. Based on the review and supported by the results of the case study, increasing mutual trust and ecosystem coherency and creating favorable stakeholder relationships were defined to be the focal elements in ecosystem communications.

The results of the case study consolidate the previous observations related to the unique nature of innovation ecosystems and their practices. The real-life innovation ecosystems are creating their

own ways of working based on previous collaboration experiences and what is beneficial for the ecosystem actors. The focal differences between the studied ecosystems were related to operating model, development stage, aimed output, and the ecosystem funding. All these factors have effect on the ecosystem communication, but due to the scope of the study the developed communication tool emphasizes the first three.

Based on the study, an ecosystem communication process, that aims to enhance the ecosystem communication, was developed. The suggested communication process starts with evaluation of the ecosystem-specific communication-effecting factors and overall strategic targets. The second step is mapping the communication actions related to coherency, mutual trust, and stakeholder relationships. As end result of the process, the most important features of ecosystem communications are collected to a single canvas, that provides guidance to strategic, tactical, and operational communication planning. This Ecosystem Communication Canvas is presented in Appendix 3.

## **6.2 Feedback and general notions related to the results**

For validation and feedback, the results of the study and developed communication process were presented to a group of professionals that consisted of two of the interviewed ecosystem coordinators, one specialist with previous experience in ecosystem communication, and one communication specialist with no experience of ecosystem work. All the professionals with ecosystem-background recognized the highlighted results and shared the experience of ecosystem complexity and challenges related to the ecosystem communications and management.

The suggested process received positive feedback, but the group also emphasized, that the lack of resources might limit the use. No tool is useful if there is no-one to use it in full capacity. The communication specialist with no previous ecosystem experience saw it useful, that the process gives clear indication of things that need to be focused on. Two members of the group separately mentioned that the process could be amended with simple task lists that follow each step. Adding introductory texts to the Ecosystem Communication Canvas was also suggested to help users with less experience of communication and ecosystem practices to fill the canvas correctly.

After finishing the work, my own impression is, that the process might be a bit too complicated and multiphase for many innovation ecosystems. The aim was to create a tool, that would offer an offset for impactful, strategic communication management in complex and multilateral context. In practice, many ecosystems are struggling with very basic level communication challenges, and communication as a management function is quite a distant idea. The lack of time and money, as well as limited communication experience and knowledge related to communication management and planning will unavoidably affect the ability to utilize the presented tool. In many ways the

process is still highly theoretical, and it is unclear, if this level of planning would help the ecosystem coordinators.

The results of thesis indicate that innovation ecosystems could benefit from more systematic communication management. The complex nature of ecosystem relationships is not an easy environment for executing impactful communication activities. Organizational communication management is still often based on hierarchical power and top-down approach, which does not fit into the ecosystem way-of-working.

All in all, the case study increased the knowledge on communication within ecosystems, but to confirm the observations, more research is required.

### **6.3 Recommendations for future research**

At the moment rapid increase in ecosystem research keeps on providing new perspectives on ecosystems, their practices, and strategic actions. Closer investigation on innovation ecosystems from communication perspective could undoubtedly add new layers to the understanding of ecosystems both as interactive processes and meta-organizational entities acting on competitive market.

In this thesis, the research questions remained on upper-level, and some of the findings would require deeper look or different perspective to achieve a full picture of the topic. For example, all the ecosystems in the case study represented the more centralized operative models and concentrated the decision-making power to coordinator or a core entity. More decentralized ecosystems might have different views to communication as such, and also in strategic implementation of it. If the communication is crucial for ecosystems existence and in centralized operative models the power over communication decisions is concentrated to the coordinator and core group, in decentralized models must have different way of managing the communications.

This study observed the ecosystem communication in general and did not dig deep into the role of individuals. The strategic communication approach acknowledges, that the communication is happening in all levels of organizational communications and in all encounters. In the ecosystem context, individual actors are in some situations simultaneously presenting the ecosystem community, their own organization, and themselves. Studying the ecosystem communication from perspective of individual roles and stakeholder relationships might offer entirely new insights on the constitution of ecosystems.

To further develop the ecosystem communication management process, the suggested tool could be tested and perhaps simplified in collaboration with ecosystem coordinators. Taking the process into practical context and using it as a basis for communication planning would help to testify the

assumptions and reveal practical issues that come along when applying the theoretical framework into use.

## 6.4 Closing words

Many great expectations and idealistic visions have been directed towards innovation ecosystems during the past few years. The concept of innovation ecosystems has been surrounded with a certain level of hype, and the researchers have already noticed, that the fall-through rate of recently founded innovation ecosystems is rather high. During the thesis process, the studied ecosystems went through a drastic change, as the strategic emphasis in the initiating organization shifted. As a result, the ecosystem coordination was no longer considered a priority, and the already deteriorated resources were mostly allocated elsewhere, and how the work will continue is yet to be seen.

The rapid rise in research and experimentation around the ecosystem topic and failed implementations draw thoughts to the Gartner Hype Cycle (Gartner, 2023). Gartner Hype Cycle is a methodology that visually describes the development of an interesting breakthrough to an actually profitable technology in five phases. These phases are innovation trigger, peak of inflated expectations, trough of disillusionment, slope of enlightenment and plateau of productivity. The method shows, how the hype typically accelerates a technological innovation to a quick rise towards the peak of expectation. After reaching the peak, the interest slows down and takes a turn to a deep slope before actually reaching the mainstream adaptation.

The innovation ecosystems seem to be in the point, where the peak of inflated expectations have passed, and the trough of disillusionment is on. In this phase, the interest wanes as experiments and implementations fail to deliver, and producers shake out or fail. Investments continue only if the surviving providers improve their products to the satisfaction of early adopters. Right now it might be tempting to decide that the experiment is over, but instead, it should be the time to head towards the slope of enlightenment, where the benefits start to crystallize and become more widely understood. (Gartner, 2023) Examining the situation now that the greatest hype is over, and making changes to the operations if needed, can lead to great success.

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## Appendices

### Appendix 1. Interview questions

Tämän haastattelu kuuluu haastattelusarjaan, jonka tarkoituksena on selvittää, millaisia käytäntöjä ja rakenteita eri ekosysteemeissä ja ekosysteemeihin rinnastettavissa muissa monitoimijaverkostoissa on viestintään ja hallintoon liittyen, ja millaisia näkemyksiä ja kokemuksia verkostojen toimintaa koordinoivilla henkilöillä on niiden viestinnästä.

Haastattelujen pohjalta muodostuu kokonaiskuva viestinnästä organisaation koordinoimissa monitoimijaverkostoissa: toimintatavoista, hyvistä käytännöistä ja haasteista. Kokonaiskuvan perusteella kehitetään ohjeita, käytäntöjä ja toimintamalleja sekä jaetaan tietoa tulevaa käyttöä varten.

#### 1. Osio: ekosysteemin määrittely

1. Miten kuvailisit koordinoimasi ekosysteemin toimintaperiaatetta?
2. Miten ekosysteemi on muodostunut?
3. Onko toimintatavalle joku esikuva, tai onko toiminnan pohjana käytetty jotain teoreettista ekosysteemimallia?
4. Kuinka laajasta verkostosta on kyse?
5. Millaisia tehtäviä kuuluu ekosysteemin koordinaattorin rooliin?
6. Onko verkostolle määritelty tehtävä (purpose) ja tavoitetilä (visio)?
7. Onko ekosysteemillä strategia tavoitteiden saavuttamiseksi? Jos ei ole, miten varmistetaan, että ekosysteemi liikkuu kohti tavoitetilää?
8. Miten ekosysteemi tekee päätöksiä? Kuuluuko ekosysteemiin ohjausryhmä / hallitus / muu päätöksentekuelin, ja millainen rooli sillä on?
9. Onko ekosysteemillä jotain muita hallinnollisia rakenteita, joilla on vaikutusta yhteisen toiminnan suunnitteluun?
10. Millaiset valmiudet ekosysteemin jäsenillä on osallistua toimintaan?

#### 2. Osio: Viestintä ekosysteemissä

Tässä osiossa ekosysteemin viestinnällä tarkoitetaan erityisesti ekosysteemin yhteistä, ekosysteemi-brändin alla tapahtuvaa viestintää. Ulkopuolelle jää esimerkiksi jäsenorganisaatioiden oma brändiviestintä, jossa ekosysteemi-yhteistyötä ja tuloksia hyödynnetään jollakin tavalla jäsenorganisaation maineenhallintatyössä.

11. Mitä kaikkea mielestäsi kuuluu ekosysteemin yhteiseen viestintään?
12. Kuka ekosysteemin viestinnästä on vastuussa? Tai mikä, onko ekosysteemin viestintä esimerkiksi ulkoistettu viestintätoimistolle, tai muodostettu organisaatioiden välinen viestintäryhmä?

13. Onko viestinnälle (tai viestinnälle ja markkinoinnille) oma budjetti, jonka puitteissa toimia?  
Jos ei, niin millä resursseilla viestintää toteutetaan?
14. Kenellä ekosysteemissä on valtaa tehdä viestintään liittyviä päätöksiä?

### 3. Osio: Strateginen viestintä

Tässä osiossa strategisella viestinnällä tarkoitetaan niitä suunniteltuja viestinnän toimenpiteitä, joiden avulla ekosysteemi pyrkii kohti tavoitteitaan.

15. Miten ekosysteemin viestintä edistää strategisten tavoitteiden saavuttamista? Onko viestintää ylipäänsä tarkasteltu kokonaistavoitteiden näkökulmasta?
16. Onko ekosysteemillä viestintästrategia? Mitä se pitää sisällään?
17. Onko ekosysteemillä viestintäsuunnitelma? Minkälaisia asioita viestintäsuunnitelmaan on kirjattu?
18. Onko keskeisiä sidosryhmiä määritelty / analysoitu / priorisoitu jotenkin? Jos on, onko viestintää kohdistettu eri tavalla eri sidosryhmille?
19. Mitataanko tai seurataanko viestinnän toimivuutta jollain tavalla? Jos kyllä, niin miten?
20. Miten mittaus- / seurantatuloksia hyödynnetään? Onko esim. määritelty jotain tavoitteita ja toimenpiteitä, jatkoseurantaa siitä, miten tavoitteet on saavutettu? (esim. reputation gaps)

### 4. Osio: Haasteet ja Onnistumiset

21. Mikä ekosysteemin viestinnässä on mielestäsi onnistunut hyvin?
22. Millaisia haasteita ekosysteemissä on ollut viestintään liittyen?
23. Mistä olet saanut / etsinyt apua viestintään liittyvissä haasteissa? Omasta organisaatiosta vai ekosysteemin muilta toimijoilta?
24. Onko jotain toimintatapaa tai toimenpidettä, viestintään tai ekosysteemeihin yleisesti liittyen, jota suosittelisit muille samassa roolissa toimiville?

## Appendix 2. Ecosystem Overview

Ecosystem	Ecosystem type	Administration	Approach to strategy	Approach to communications
<b>Ecosystem A</b>	<p>Innovation ecosystem</p> <p>Emphasis on initiating commercial innovations and public-private collaboration</p> <p>Big, loosely connected network with smaller group of core members</p> <p>Stage: expansion / self-renewal or death</p>	<p>Administration structures have been evolving through different stages of ecosystem life cycle</p> <p>Coordinator holds a lot of decision-making power</p> <p>Coordinating organization manages and funds administration internally</p>	<p>Emergent strategizing and holistic strategic thinking in all actions</p> <p>Vision oriented</p> <p>No documentation or commonly agreed plans or strategic targets</p>	<p>Constitutive approach to communication</p> <p>Focus on brand building, network sustenance and co-creation.</p> <p>Managed by coordinating company, utilizes internal resources</p> <p>Used to be funded by coordinating company, now the funding has ended</p>
<b>Ecosystem B</b>	<p>Innovation ecosystem, emphasis on collaboration between companies and research partners</p> <p>Umbrella organization for several individual projects / ecosystems</p> <p>Big, loosely connected network</p> <p>Stage: expansion</p>	<p>The coordinating organization holds all the administrative power</p> <p>Individual projects and ecosystems are managed by themselves, generally very lean structures</p> <p>Well organized practices, service design orientation</p> <p>Individual projects and ecosystems get funding from different funding instruments</p>	<p>Deliberate strategy</p> <p>Vision oriented</p> <p>Jointly defined vision and purpose, annual plans for each individual piece of the ecosystem</p> <p>Practical approach to vision and plans that support achieving it</p>	<p>Combination of constitutive and functional approach</p> <p>Focus on communicating the results of collaboration and creating connections, brand is important</p> <p>Important to share information and influence to the public opinion</p> <p>Outsourced, funded by the coordinating company</p>
<b>Ecosystem C</b>	<p>Defines itself as a cluster, drives collaboration between companies and research partners within a very specific topic</p> <p>Part of a bigger initiative</p> <p>As itself, a small and tight network, active input required from all the members</p> <p>Stage: birth / expansion</p>	<p>Clearly structured administration and common understanding of how it is implemented</p> <p>Practical coordination tasks outsourced; core group holds the decision-making power</p>	<p>Deliberate strategy</p> <p>Jointly defined vision and purpose, annual plans for development</p> <p>Plans are not static, revisions are made regularly</p> <p>Visual roadmap, that combines the different streams together</p>	<p>Rather functional approach to communication</p> <p>Currently: focus on internal communication and information sharing</p> <p>New network, importance of communication is acknowledged, practices still evolving</p> <p>External communications under the brand of the bigger initiative</p> <p>Communications outsourced, funding from different streams</p>
<b>Ecosystem D</b>	<p>Knowledge ecosystem, aiming to evolve to an innovation ecosystem</p> <p>Mostly research collaboration, aims in increasing industry collaboration</p> <p>Project-like ecosystem, plans and structures originally designed for a specific funding instrument and time span</p> <p>Small partner network, but lots of individuals involved</p> <p>Stage: self-renewal or death</p>	<p>Very formal administration structure, due to the terms of funding</p> <p>Coordinator holds the power and is in charge of the main responsibilities</p>	<p>Deliberate strategy</p> <p>Funding application sets the frame for actions</p> <p>The execution of the strategy is not systematic</p>	<p>Combination of constitutive and functional approach</p> <p>Focus is on internal communication and information sharing</p> <p>Coordinator personally manages the communications</p> <p>Some of the project funding has been directed to communication and marketing</p>

<b>Ecosystem E</b>	<p>Combination of knowledge and innovation ecosystem</p> <p>Project-like ecosystem, focus on fixed actions and targets</p> <p>Current emphasis on knowledge exchange</p> <p>Small network</p> <p>Stage: birth / expansion</p>	<p>Rather lean administration</p> <p>Build on experiences gained in previous ecosystem-project</p> <p>Power distributed to core partners according to the plans presented in funding application</p>	<p>Deliberate strategy approach, but leaves room for emergent strategizing</p> <p>Funding application sets the frame for actions</p> <p>The actions need to be reported in the end of the funding period</p>	<p>Combination of constitutive and functional approach</p> <p>Focus is on internal communications and information sharing</p> <p>Partners participate in planning and executing communications</p> <p>Some amount of project funding has been directed to communication and marketing</p>
<b>Ecosystem F</b>	<p>Innovation ecosystem, strong industry- perspective</p> <p>Focus on co-innovation and co-learning Strong design-thinking background</p> <p>Big network</p> <p>Stage: self-renewal</p>	<p>Aiming for lean and agile administration and planning</p> <p>Currently shifting to a new phase of the life cycle, and developing the new practices</p> <p>Previously, coordinator had the power over practical things, but decision making was distributed</p>	<p>Somewhat deliberate strategy approach, leaves room for emergent strategizing</p> <p>Common aim and vision, jointly agreed themes and roadmaps</p> <p>Re-evaluating the plans regularly</p>	<p>Constitutive approach to communication</p> <p>Mainly internal communications</p> <p>No resources for external communications and marketing</p> <p>The importance of systematic external communication is acknowledged, but not yet addressed</p>
<b>Ecosystem G</b>	<p>Research / knowledge ecosystem</p> <p>Was previously aiming to become more innovation oriented, now drawn closer to a collaboration project</p> <p>Aims to increase expertise in certain focus area</p> <p>Medium-sized network</p> <p>Stage: Expansion</p>	<p>Very heavy and formal administration, partly due to partnering organizations and partly to funding instrument</p> <p>The common understanding over ecosystem actions is not self-evident</p> <p>Difficulties to fit the ecosystem work with partner organizations' practices</p>	<p>No jointly agreed strategy or processes</p> <p>Externally set goals and targets, no common agreement on how these should be implemented</p> <p>Emergent strategizing and strategic thinking in some operations</p>	<p>Approach to communication unclear, differences between the official aims and practice</p> <p>Under-resourced, internal funding has ended</p> <p>Communications outsourced</p>
<b>Ecosystem H</b>	<p>Defines itself as a network instead of ecosystem</p> <p>Emphasis on research collaboration, aims to develop towards collaboration with companies</p> <p>Small network</p> <p>Stage: self-renewal or death</p>	<p>Formal administration structure but rather lean execution</p> <p>Coordinating company often initiates the actions, but decision-making generally distributed to core group</p>	<p>Somewhat deliberate strategy approach</p> <p>Vision oriented</p> <p>Jointly agreed themes and roadmaps</p> <p>Agreement on future development of the collaboration</p>	<p>Functional approach to communication</p> <p>Focus on external communication and brand building</p> <p>Coordinating company has the main responsibility of communications, utilizes internal resources</p> <p>Used to be funded by coordinating company, now the funding is ending</p>

# Ecosystem communication canvas

Actions that build coherency		Actions that build mutual trust	Actions that foster stakeholder relationships
Current situation and major challenges		Current situation and major challenges	Current situation and major challenges
Where are we now in terms of coherency? What should change for the coherency to increase?		How high is the level of trust at the moment? Has the mutual trust been increasing / decreasing?	Who are the most important stakeholders? How is the relationship with them at the moment?
Things to focus on in near future		Things to focus on in near future	Things to focus on in near future
What are the practical actions, that support the cooperation between ecosystem actors?		What topics specifically need to be communicated to the ecosystem actors? Are there processes that need to be clear?	What are the key messages we should communicate to the stakeholders? What is the value proposition that we should especially own in the market?
Long term target		Long term target	Long term target