Vol. 15, No. 2, 109-138
doi:10.17708/DRMJ.2026.v15n02a05

Dynamic Relationships Management Journal

THE BUSINESS ECOSYSTEM LENS: LEADERSHIP AND STRATEGY EVIDENCE FROM THE IT INDUSTRY

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Abstract

The business ecosystem (BE) concept has gained significant traction in academic and managerial discourse, yet remains empirically underexplored, particularly at the firm level. This qualitative study addresses key gaps in the literature by investigating how leaders of small, medium, and large IT companies in Serbia understand and navigate their BEs. Through 14 semi-structured in-depth interviews, the research explores how BE is perceived, the types of actors involved, the effects of BE on individual firms, and the capabilities critical for competitive advantage in networked environments. The BE concept is predominantly described as a collaborative system of interdependent actors aligned around shared goals, trust, and a long-term vision, rather than as a rigid, hierarchical structure. Findings reveal that BEs are sustained through informal, trustworthy relationships guided by shared culture, rather than through formal mechanisms. Leadership capabilities, such as emotional intelligence, social navigation, and the ability to align individual and collective purpose, emerge as the most critical factors for BE success. The study further highlights the holistic influence of the BE on firm performance. The study extends prior theoretical work on BE by emphasizing the social and dynamic aspects of leading the BE, and offering actionable guidance for practitioners navigating complexity.

Keywords: *Business Ecosystems, Dynamic Capabilities, Ecosystem Leadership, Ecosystem Actors, IT Industry, Firm-Level Analysis*

1 INTRODUCTION

The business ecosystem (BE) topic is the subject of growing scientific and practical research, particularly amid the rise of sustainability and ESG trends. Research by the BCG Henderson Institute found that the term "ecosystem" occurs 13 times more frequently in annual reports now than it did a decade ago. There are several forms of ecosystem (e.g., digital ecosystems, platform ecosystems, innovation ecosystems, entrepreneurial ecosystems), primarily distinguished by their core objectives, structure, membership (number and type), size, and leadership mechanisms. Most influenced practitioners and academics mainly differentiate between three types of ecosystems: business, innovation, and platform ecosystems (Sharma et al., 2023). After Moore introduced the term "business ecosystem" in 1993, the concept has been researched from various perspectives: innovation, circular economy, ecology, sustainability, collaborative networks, open systems, platforms, and business models (Espina-Romero et al., 2023); grounded theory and definition (Moore, 1993; Iansiti & Levien, 2004; Teece, 2007; Adner & Kapoor, 2010); stakeholders and BE members' relation (Yu, Li & Zhao, 2011; Lu et al., 2014; Wieniger et al., 2019; Awano et al., 2022); strategy and performance (Iansiti & Levien, 2004); (den Hartigh et al., 2013; Saeed Fallah Tafti et al., 2015); ecosystem orchestration (Cui et al., 2022; Mann et al., 2022; Franco et al., 2022; Parida & Jovanovic, 2024); capabilities, mindset and leadership needed for the BE (Attour & Barbaroux, 2016; Riquelme-Medina et al., 2022; Kenichiro & Naoshi, 2024; Foss et al., 2023). Despite its essential importance and extensive re-

search, the concept still lacks a theoretical foundation for its definition and deeper meaning, as well as for the relationships among its members and its overall strategic significance. Additionally, little attention is given to the practical implications, inter-member relationships, the strategic significance of the BE for individual firm members, and their strategies, behaviors, and performances. Most studies relied on literature reviews or secondary data analyses, indicating a need for more extensive empirical research, particularly at the firm level. Similarly, many managers still struggle with the broad scope of the concept, unclear definitions, and the lack of practical advice. These gaps become more critical, given that creating or participating in ecosystems will be one of the main strategic tasks of businesses in the coming decades (Korovkin et al., 2021).

This study aimed to fill these gaps by providing a deeper empirical understanding of the BE, its structure, and its importance for members. To get a more realistic picture, the study included leaders from different types and sizes of IT companies: representatives of the largest IT companies, medium-sized companies with exponential or stable growth trends, and small companies with specific BE contexts and growth strategies. Taking all gaps and objectives into consideration, the study answers the following research questions: 1) How do leaders describe and understand their BE? What is the key value it creates? 2) What kind of actors are common within the business ecosystem, and how are they connected? What are the essential resources needed to manage or coordinate those relations? 3) How does the BE affect or not affect firms and their members? 4) What capabilities are and will be critical for a firm to develop to generate competitive advantage and fulfill its strategy objectives in the context of BE?

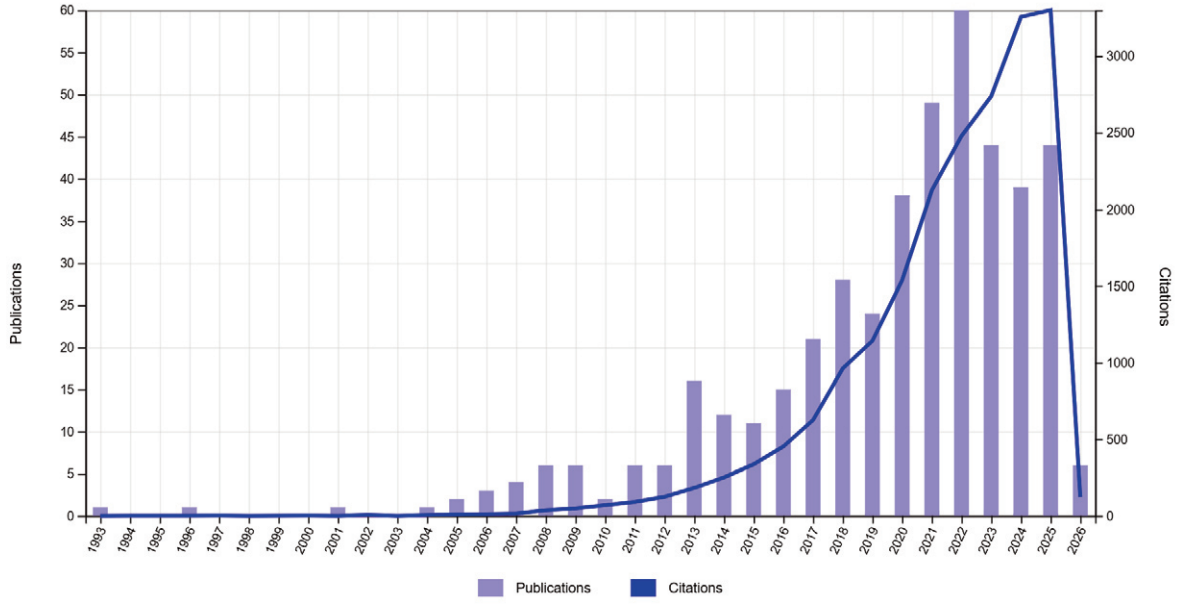
By providing new insights into the complex concept of BE and offering an empirically grounded understanding of how small, medium, and large IT firms in a transitional economy structure and navigate their environments, the findings contribute to the theoretical discussion and extend the current BE theory. The study reveals that BE is more than a strategic constellation or structural network; it is also a relational system in which trust, functional connections, and shared values are essential for sustainable collaboration and value creation. This new perspective on the BE emphasizes that trust and cohesion rely less on formal governance mechanisms and more on personal leadership, social dynamics, and shared cultural values, thereby enhancing the BE literature and underscoring the importance of integrating with theories and concepts from other disciplines. These findings complement prior work on ecosystem orchestration (e.g., Wulf & Butel, 2017; Franco et al., 2022; Teece et al., 2023) and extend it by illustrating the growing relevance of ecosystem leadership and dynamic capabilities (Teece, 1997; 2023) in turbulent, networked environments. Beyond the aforementioned, the most forward-looking contribution of the study lies in identifying key constructs that lay the groundwork for developing BE indicators, BE performance, and concrete leadership capabilities, which can be used for further research to establish causality and generalizability.

2 LITERATURE REVIEW

The business environment, often referred to as the business ecosystem (BE), has garnered significant attention in contemporary economic literature due to its evolution amidst complexity and external pressures on business sustainability. Despite the increasing research interest over the last three decades, there remains ambiguity regarding the definition, boundaries, structure, and dynamics of the business ecosystem.

As shown in Figure 1, the popularity of BE research has increased steadily over the past twenty years. After Moore introduced the term “business ecosystem” in 1993, the first notable article on the topic emerged in 2004, marking the end of a relatively quiet decade. Around 2012, the research area experienced a significant surge in activity, followed by continued growth despite some brief fluctuations. Over half of all publications in this field have been published in the past 10 years. The concept seems to have entered a mature phase of development, with the pace of new publications showing signs of stabilization or a gradual decrease. The period from and after COVID-19 (2021-2023) is the one with the highest growth in publications, and it is also the period when many organizations have built their competitive advantage through networks of interdependent organizations, institutions, and individuals,

Figure 1: The evolution of research on the business ecosystem



Source: Author's work, Web of Science, February 2026.

aiming to create joint value that exceeds organizational boundaries. The theoretical "fail" in attempting to standardize the BE definition and terminology, as well as to define and measure the main concepts within the BE, may be a reason for the decline in interest and publications on this topic over the last three years. However, analysis of prior research shows six dominant perspectives on the BE concept: definition or meaning; structure; actors; relationships and dynamics; results or performance; and future research areas. The following segments of this chapter describe its evolution and interpret the most important findings on the BE in prior literature.

Although research on this concept began 30 years ago, its definition remains unaligned with theoretical frameworks, and more than 30 interpretations have been identified. Across these three decades, the BE definition has shifted from metaphorical interpretations to interdependence and structural architecture, and finally to members' roles, relationships, and mechanisms of coordination. Moore (1993, 1996) and Iansiti and Levien (2004) are the first and most-cited authors on the definition and most commonly used meaning of the concept. Moore first introduced the concept of a BE in 1993; in 1996, he described it more precisely as follows. "An economic community supported by a foundation of interacting organizations and individuals – the organisms of the business world. The member organism includes suppliers, lead producers, competitors, customers, and other stakeholders." (Moore J, 1996). Iansiti and Levien (2004) define BE as interconnected and interdependent business networks of suppliers, distributors, outsourcing firms, makers of related products or services, and technology providers organized around a keystone actor (Iansiti & Levien, 2004). The first decade of defining BE as a concept has focused on interdependent relations and various member types. The second decade of research brought three additional aspects of the BE as important: structure, core technology, and mutual value as a guide. It started with the perspective of Ron Adner (2006), who described BE as collaborative arrangements through which organizations combine their individual offerings into a coherent, customer-facing solution (Adner, 2006), or a solution that impacts the enterprise and the enterprise's customers and suppliers (Teece, 2007), relying on the core technology of the BE (den Hartigh & Van Asseldonk, 2004), and dy-

namic structures of interconnected members (Peltoniemi & Vuori, 2004). In this period, Moore offered an expanded perspective on his prior definition, introducing the BE as a third organizational form defined by a mutual commitment to the future (Moore, 2006). In analyzing the latest decade of BE research, both progress toward alignment and greater diversity in the definition of BE are evident. Observing the core elements of these prior multiple perspectives and confusion around what is a BE and what is not, Adner published a paper in 2017 in the Journal of Management, identifying two major types of ecosystem perspectives: ecosystem-as-affiliation and ecosystem-as-structure. The ecosystem-as-affiliation view is an actor-centric one, emphasizing the breakdown of traditional industry boundaries and the rise of interdependence, and the position of actors within the ecosystem. The position is determined by their existing links, with organizations possessing numerous high-quality links occupying the center and those with few or low-quality links residing on the fringe of the ecosystem (Adner, 2017). This view introduced the first metrics for the BE construct, measuring it as the number of partners (degree), centrality, and network density, bringing the Social Network Theory together with the BE theory. The Ecosystem-as-Structure concept is defined as the "alignment structure of the multilateral set of partners that need to interact for a focal value proposition to materialize" (Adner, 2017). This strategic approach involves managing all potential links in the system, both direct and indirect ones that relate to activities and actors with whom a focal firm may not interact. From this perspective, the actors' positions depend on the flow of activities derived from defining the value that BE aims to create. Following the number of citations and references to these concepts, it made significant progress toward theoretical alignment on what the BE is. However, parallel to Adner's work, many new perspectives and authors have been identified, leaving a significant mark on the BE literature and extending it beyond what an ecosystem is to how members align. The BE, as a set of actors with varying degrees of multilateral, nongeneric complementarities that are not fully hierarchically controlled (Jacobides et al., 2018), is one perspective that emphasizes complementarity among members and the importance of coordination among them. The coordination of the BE aspect presents a dynamic capabilities perspective (Teece, 2017; 2023) as central to the latest BE research, in parallel with the process of co-evolution and open exchange with the environment for continuous innovation (Hou & Shi, 2021). This is the point that makes the understanding of the BE more complex and diverse, necessitating clarity and boundary definition across different ecosystem forms: business, innovation, and platform ecosystems (Sharma et al., 2023). Although intensive and rich, a three-decade period leaves us with uncertainty about what the BE is and what it is not. From community and network, through dynamic structure and organizational form, to the arrangement, concept, and "pillar of modern business thinking" (Moore, 2006), authors have attempted to draw distinctions and make a theoretically recognizable and accepted definition. Given that an ecosystem is a conceptual abstraction of a phenomenon that cannot be directly observed, it is expected to take multiple acceptable forms. However, this lack of theoretical alignment hinders further BE research and progress, which identifies the first theme this study aims to address.

The BE **structure** has been identified as one of the research perspectives over the last 15 years. It begins with many articles that offer frameworks and define the main aspects of BE (Fathi et al., 2012; Thomas & Autio, 2014), and "ends" in current moment offering a sort of consensus regarding the essential elements of the BE: actors, positions, activities, links between actors (Adner, 2017), complementors, coopetition, properties, environment and outcomes (Paasi et al., 2023). This conceptual consensus is not followed by the same empirical testing of these concepts, which identifies it as an important area for further research.

Since ecosystem **actors** represent one of the most extensively examined perspectives of the BE, a relatively high degree of theoretical convergence can be observed regarding their composition, with differences primarily in terminology rather than substance. Early contributions conceptualized the leading firm as a "keystone" or focal actor that guides and maintains value creation (Moore, 1996; Iansiti & Levien, 2004). More recent research moves beyond this foundational categorization by emphasizing functional differentiation and role specialization, particularly the coordinating and governance responsibilities

of orchestrators (Linde & Sjödin, 2021; Cui et al., 2022; Franco et al., 2022) and the increasing prominence of diverse technological complementors such as integrators, developers, and research partners (Paasi et al., 2023). Taken together, this progression suggests a shift from static actor typologies toward a more dynamic understanding of roles, where value creation depends less on actor identity and more on relational and functional interdependencies. As in the BE structure perspective, there is a need for more empirical research on these concepts to make them generally understandable and usable.

The relations and dynamics among BE members document the growth of research, paralleling a shift in the BE definition from metaphorical to structural architecture, relationships, and mechanisms of coordination over the last fifteen years. Following Moore's (1993) life-cycle view, which emphasized the co-evolution of actors through stages of birth, expansion, leadership, and renewal, subsequent studies increasingly turned their attention to identifying the concrete capabilities required to manage these evolving relationships. This stream of research progressed from learning-oriented mechanisms such as collaborative learning and knowledge sharing (Williamson et al., 2012; Thomas & Autio, 2014; Wulf & Butel, 2017), toward relational and strategic constructs including coopetition and embeddedness (Wieninger et al., 2019; Riquelme-Medina et al., 2022, 2023), and more recently grounded in dynamic capabilities, leadership and orchestration capabilities (Teece, 2017; Foss et al., 2023; Linde & Sjödin, 2021; Mann et al., 2022; Parida & Jovanovic, 2024). Collectively, these developments demonstrate growing efforts to operationalize ecosystem relations through measurable constructs and managerial capabilities. However, persistent ambiguity surrounding the conceptual boundaries of the BE itself continues to hinder consistent measurement and construct validity, suggesting that theoretical alignment remains a necessary prerequisite for robust empirical assessment.

Research on BE **results and performance** remains comparatively underdeveloped. Early attempts to assess ecosystem performance, most notably the ecosystem health framework proposed by Iansiti and Levien in 2004, primarily relied on financial and stability indicators, offering only a partial view of ecosystem value creation. More recent empirical efforts are scarce, with rare exceptions such as Zhu and Du's (2023) case study, which examined how innovation reshapes value within established ecosystems. At the same time, foundational BE theorists, including David Teece, Ron Adner, and Rahul Kapoor, emphasize that the concept is defined by the joint value it generates for focal firms, customers, and all other members. This conceptualization implies that BE performance is multidimensional, relational, and difficult to capture through purely quantitative indicators. Consequently, identifying and unpacking the concrete forms of value and benefits experienced by BE members becomes a necessary prerequisite for meaningful measurement at both the ecosystem and firm levels. In this regard, qualitative inquiry is not only methodologically appropriate but theoretically essential, as it enables the exploration of emergent mechanisms, perceptions, and relational dynamics that remain invisible in standardized metrics (Creswell, 2003).

Given the maturity of BE research, identifying similar areas for future research over the last three decades suggests that BET requires alignment across all key segments: definition, elements, relations, and outcomes. An identified need to understand what a BE is and is not, its main elements, and their relations (Bogers et al., 2019), filling a gap in defining capabilities for managing ecosystems and defining how the BE influences firm performance (Liu et al., 2024), is essential for further theoretical progress.

Despite the rapid growth and apparent maturation of BE research, the recurring nature of similar **research** agendas over the past three decades suggests that the field remains conceptually fragmented rather than fully consolidated. Foundational questions concerning what a BE is and what it is not, as well as the clarification of its core elements and relational structures, remain unresolved (Bogers et al., 2019). More recent work further highlights the need to specify the capabilities required to manage ecosystems and to explicate the mechanisms through which ecosystems shape firm-level performance (e.g., Liu et al., 2024). Taken together, these gaps indicate that further theoretical progress in BET requires fundamental alignment across its foundational components: definitions, elements, relationships, and outcomes; thereby enabling cumulative and comparable empirical research.

Taken together, the literature review indicates that most BE studies discussed concepts at a conceptual level, focusing on the features and roles of BE in the broader economy, while paying limited attention to the deeper, practical meanings, relationships among members, and the strategic importance of BE for all firm members. This imbalance has left important theoretical and practical gaps, particularly regarding how BE is managed through strategy, critical capabilities, and leadership roles. Methodologically, the field continues to rely heavily on literature reviews and secondary data, underscoring the need for more robust empirical investigations grounded in primary, firm-level evidence (e.g., Shou et al., 2022; Awano & Tsujimoto, 2021). Addressing these gaps requires adequate research designs that directly examine relationships, capabilities, and performance outcomes, thereby enabling a deeper understanding of BEs.

3 METHODOLOGY

Building on the theoretical gaps identified in the preceding review, this study adopts a research design that is well-suited to the complexity and relational nature of the BE concept. Given the significant need for a deeper understanding of the BE as a contemporary business context beyond the literature review findings, and limited empirical understanding of ecosystem relationships, mechanisms, and capabilities, this study's goal is to provide a deeper understanding of the BE construct, as well as to identify essential constructs and variables connected with the BE, to establish ground for future empirical studies. Thus, this research will focus on answering the following research questions (RQ):

- RQ 1: How do leaders describe and understand their BE? What is the key value it creates?
- RQ 2: What kind of actors are common within the business ecosystem, and how are they connected? What are the essential resources needed to manage or coordinate those relations?
- RQ 3: How does the BE affect or not affect firm members?
- RQ 4: What capabilities are and will be critical for a firm to develop to generate competitive advantage and fulfill its strategy objectives in the context of BE?

Addressing the theoretical gaps mentioned and answering the posted RQs requires capturing the complexity of the phenomenon and exploring its underlying mechanisms, relationships, and key constructs. Accordingly, this study employs a qualitative research method, with semi-structured in-depth interviews as the most suitable approach. Such an approach allows for a more operational and empirically grounded understanding of how capabilities and relationalities unfold within the BE context. Semi-structured interviews are often referred to as qualitative research interviews because they are invaluable for exploring phenomena that are not yet well understood and for seeking new insights (Saunders, Lewis, & Thornhill, 2009, p. 450).

To provide a relevant and valid research perspective on this topic, it was essential to analyze firms within a specific industry, where each firm (respondent) has its own perception and ecosystem, ensuring significant industry-wide diversification. Following the most prominent authors on the BE concept, this organizational form typically encompasses technology firms as focal or follower firms, as it revolves around a core technology or an integrative technological system (Den Hartigh & van Asseldonk, 2004). Thus, this study analyzes how the BE concept is perceived by top management and board members of information technology (IT) firms in Serbia, the industry with the most experience and knowledge of BE topics. Furthermore, the IT industry is considered the most dynamic and complex, using and developing various innovative strategies and capabilities, and one of the most promising sectors in the Balkan region (National AI Platform of Serbia, 2023).

Given that IT firms were the primary research subjects, a combination of purposive and snowball sampling (Trost & Bavdaž, 2025) was used to interview top management representatives from IT firms in Serbia, including companies of varying sizes and experience levels in a BE context. The first step in the sampling process was secondary data analysis, using the Orbis database to identify all IT firms that represented the targeted population, followed by analysis of the key firms' data to determine a targeted sample of convenient firms and concrete potential respondents. The most important criteria for analyzing firms were firm size (10 or more employees) and firm age (3 or more years in business). The

Orbis classification of firm size was used (Microenterprise: 1 to 9 employees; Small business: 10 to 49 employees; Medium-sized companies: 50 to 249 employees; Large companies: 250 or more employees; Very large companies: 800+), and the sample of targeted firms was created to reflect diversification, i.e., to include firms of different sizes. Since the proper selection of sample participants impacts the quality of the study, the following additional criteria for sample inclusion was created: top management or board member representative of the IT firm, since the formation and operation in the BE environment is a strategic topic, not broadly communicated and decided through the entire firm; representative of an IT firm that is a member of one or more BEs; representatives of IT firms with different ecosystem roles; representatives of IT firms who are willing to openly and honestly share information or "their story." The first respondents were those familiar to the researcher; thereafter, the "snowball" sampling method was used. The sample size was determined using the principle of theoretical saturation, the point at which respondents begin to answer questions in the same or similar ways, typically occurring between 10 and 30 interviews (Trost & Bavdaž, 2025), resulting in a sample of 14 interviews, distributed proportionally by IT firm size, firm age, and unintentionally covering firms with different number of years operating in the BEs (from 5 to 16 years of the BE experience). The interviews with 14 IT leaders were conducted from July to October 2024, lasting 45 to 60 minutes each. Sample data and interview information are presented in Table 1. The data that support the findings of this study are available from the corresponding author upon reasonable request.

Table 1: Sample Description

Participant ID	Position	Gender	Firm age	No. of employees	Firm size classification	No. of years in BE	Role in BE
P1	Co-founder and Chief Product Officer	Female	5	10	Small	5	Focal actor
P2	Partner and CEO	Male	8	41	Small	6	Focal actor
P3	Chief Business Officer	Male	14	120	Medium	14	Follower - complementary actor
P4	CEO and Digital Grid Global Pursuit VP	Male	13	1000+	Very large	13	Focal actor
P5	Co-founder and CEO	Male	16	800+	Very large	16	Focal actor
P6	Founder and CEO	Male	13	20	Small	8	Follower – supplier actor
P7	Sales director	Male	10	150	Medium	10	Follower – supplier actor
P8	CEO	Male	4	80	Medium	3	Follower - complementary actor
P9	Head of Account Management	Male	16	1300	Very large	16	Focal actor
P10	Country Manager	Male	8	200	Medium	8	Follower - complementary actor
P11	Partner and Chief Business Officer	Male	8	60	Medium	5	Follower – supplier actor
P12	Head of Business Development	Male	8	40	Small	6	Focal actor
P13	Chief Business Officer	Female	20	800	Large	10	Focal actor
P14	Chief Human Resource Officer	Female	20	800	Large	10	Focal actor

Prior to data collection, all participants received an informed consent form via mail outlining the study's purpose, procedures, and their rights as respondents, in accordance with established ethical standards for research involving human subjects. Anonymity and confidentiality were guaranteed, and participation was voluntary. Interviews were scheduled at mutually convenient times and conducted either face-to-face or via Google Meet. With participants' permission, all interviews were audio-recorded to ensure accuracy of data capture.

Given the defined RQs and the variety in understanding of the BE concept, the interviews were designed to explore personal perceptions, experiences, challenges, and strategy decisions related to the BE. In other words, it would be useful to learn from leaders who are in charge and face BE challenges daily, how to address the issues identified above. The questions were defined based on the literature review and adaptation from a similar study conducted in 2022 (Palmié et al., 2022), and are attached in Appendix 1. Based on the theoretical recommendations and the research design of similar studies, the interview guideline for this research consisted of four parts, as follows:

- Topic I: Firm-o-graphics
- Topic II: Business ecosystem perceptions, leading and other actors, and their relations
- Topic III: Identification of the most critical capabilities in the BE context
- Topic IV: Other – interviewees' reflections and comments

As a researcher, the author actively participated in the interviews, asking follow-up questions, requesting clarifications, and paying attention to both verbal and nonverbal reactions. The interviews were then transcribed and subsequently analyzed.

Given its popularity and relevance to the research question, a thematic coding approach was used (Creswell, 2003). It begins with the researcher making "sense" of what was uncovered and compiling the data into sections or groups of information, also known as themes or codes (Creswell, 2003, 2007), which are then grouped into thematic networks in the next step. This particular thematic coding process was realized in three essential steps to analyze transcript notes: (1) inductive identification of the emerging themes by coding the transcript data for each question (in Atlas. ti, a software program facilitating qualitative data analysis) and creating 1st order codes, (2) compiling prevailing codes into a group or 2nd order theme, combining inductive approach (from specific observations to broader generalizations) with deductive approach (from general premises to specific), relying on the main assumptions and definitions from the prior literature, (3) 2nd order themes were evaluated using internal homogeneity, the extent to which the data in each theme hold together in a meaningful way; and external homogeneity, the differences among themes being bold and clear (Guba, 1978). Narratives were used to support defined themes.

4 FINDINGS

This section summarizes the main themes found in the interviews. They are organized sequentially around the research questions and presented in detail in Table 2. Each research question or dimension has been explained using selected quotes, observations, first-order codes, and second-order themes or main findings from the thematic analysis.

4.1 Understanding the BE and the key values it creates

Given the complexity of the BE concept and the evolution of its definition described in the literature review, from a metaphoric, structural, to relational definition perspective, the findings from this segment provide both confirmation of existing perspectives and introduce a new, very significant perspective. Most interviewees noted that the BE is primarily defined by a group of different actors who "function together." The actors can be individuals, organizations, or institutions. The group size is not predefined; however, given the types of actors present across all fourteen BEs analyzed, a minimum of three actors constitutes an ecosystem constellation. In the words of one participant, "A minimum of three or four actors who, through their actions, enable the ecosystem to function" (Respondent 6). As he described, "Two are partnerships, and there must be at least three to be a system, i.e., an ecosystem. These two

Table 2: Research questions and the main themes

Research question	Main findings - themes
Business ecosystem definition	Trust Across Multilateral Partners
	Functionality of Complementary and Diversified Actors
	Shared Vision and Value Alignment
Business ecosystem values	Business Ecosystem as a Catalyst for Positive Change
	Efficiency Enhancement Through Ecosystem Specialization
	Catalyzing Growth and Continuous Improvement
	Knowledge and Network Capital
	Synergistic Value Creation and Capture
Business ecosystem actors	Focal Firm Actors
	Followers - Complementors, Competitors, and External Suppliers
	Clients
	Indirect Strategic Actors
	Institutional Enablers
Business ecosystem connections	Formal Connection Channels
	Social Interaction Channels
	Contractual and Procedural Foundations
	Alignment through Purpose and Opportunity
	The Connector Role of Ecosystem Leaders
Business ecosystem management	Communication and Understanding
	Time
	Ecosystem trust
Business ecosystem effects on firm members	Market and Brand Repositioning
	Organizational shifts
	People and Talent Management
	Internal Communication Dynamics
	External Communication Channels
	Knowledge and Network Capital
	Operational Improvement
Business ecosystem critical capabilities	Adaptive and Resilient Leadership
	Ecosystem Relationship and Partnership Intelligence
	Innovation and Customer Centricity
	Human-Centered Culture and Values
	Operational Execution and Capacity Building
	Network and Social Capital
	Strategic Alignment and Leadership Direction

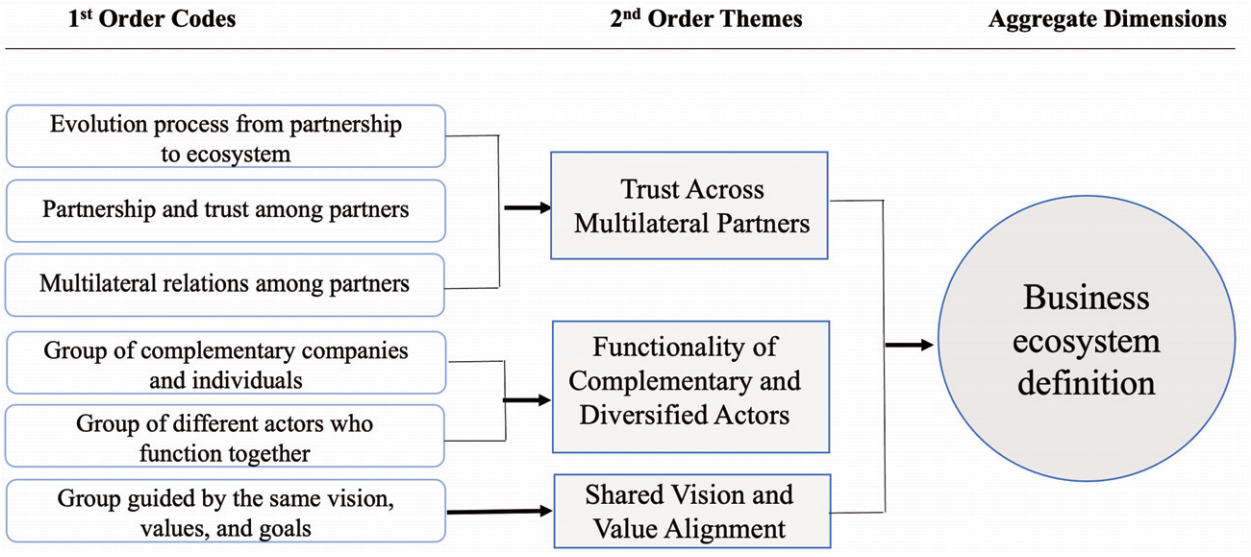
are related companies that help each other, directly or indirectly, improve or maintain their businesses." These relations among BE members were most frequently described as multilateral rather than bilateral, as in partnerships. Respondent 3 explicitly described this characteristic:

It seemed to me that earlier, in a classic partnership, it was a one-on-one relationship. In the ecosystem, it is one-on-n, which means we enter faster, and it spreads faster. Somehow, it is not a bilateral partnership but a multilateral one.

Emphasizing that each group's functioning, regardless of the type of relationship, is rooted in trust, the participants noted that BE relations are multidimensional and go beyond mere transactions. In the words of one, "I would say that the BE is a modern version of the guild, only that it is a polyvalent feature as opposed to one that was rather monovalent. Not everything is a transaction" (Respondent 9). Another important and frequent element of the BE definition is complementarity. The group of actors gathers around different but complementary values, each bringing distinct expertise. That is the moment when the need to form a BE arises – when the leading actor needs knowledge and services it does not provide itself. According to Respondent 5, "That is when an opportunity appears on the market to which you cannot respond independently with your offer; then, you enter into a partnership with complementary bidders to offer a complete solution. The ecosystem arises out of necessity or opportunity. It is widely represented in the IT industry." To summarize the findings, Figure 2 presents that leaders of IT firms understand the BE context through Trust Across Multilateral Partners, the Functionality of Complementary and Diverse Actors, and Shared Vision and Value Alignment.

Trust Across Multilateral Partners captures the perception of the BE as a network of interdependent actors whose functioning relies on mutual trust. Sustaining trust among actors was framed as both a prerequisite and outcome of successful ecosystem participation. In a multilateral structure, where firms interact simultaneously with clients, partners, competitors, and institutions, trust acts as the informal infrastructure that substitutes for rigid control and coordination mechanisms. These findings add value to existing research streams in two ways. First, findings confirm the results of a few studies that identify trust as a governance mechanism in ecosystems (Nambisan & Sawhney, 2011; Dhanaraj & Parkhe, 2006), particularly in IT-driven ecosystems where formal boundaries are fluid, and actor roles shift over time. Secondly, by positioning trust as a core element of the BE definition, with the highest frequency of 1st-order codes, the findings extend the current

Figure 2: Business Ecosystem Definition



literature by emphasizing the multidisciplinary nature of the concept. It requires not only bringing together BE theory and relevant disciplines (sociology, psychology, open systems, etc.), but also integrating them into a consistent framework.

The *Functionality of Complementary and Diversified Actors* reflects an understanding of the BE as a functional grouping of diverse and complementary actors - including firms, individuals, competitors, suppliers, and institutions, who contribute distinct yet interdependent capabilities toward a shared vision. This BE perspective provides additional confirmation and alignment with the structural conceptualization of ecosystems (Adner, 2017), in which interdependence among actors enables innovation and adaptability without formal integration.

Shared Vision and Value Alignment describes the BE as an entity united by a common vision, shared values, and strategic goals that guide actors' behavior and decision-making across organizational boundaries. As Respondent 4 described, "We are united by the same urges, intentions, and values and gathered around that one idea - what we want to do." This shared vision is considered crucial for navigating complexity and ensuring that BE efforts remain coherent over time. This finding aligns with the latest stream in the literature on purpose- and value-driven ecosystems (Ritala et al., 2022), in which strategic coordination is facilitated not by hierarchy or contracts but by a shared sense of "why." Given that mutual norms and values within groups or communities are a focus of social network and social capital theory, this finding further guides the integration of BE theory with other sociological theories (Ribeiro et al., 2024).

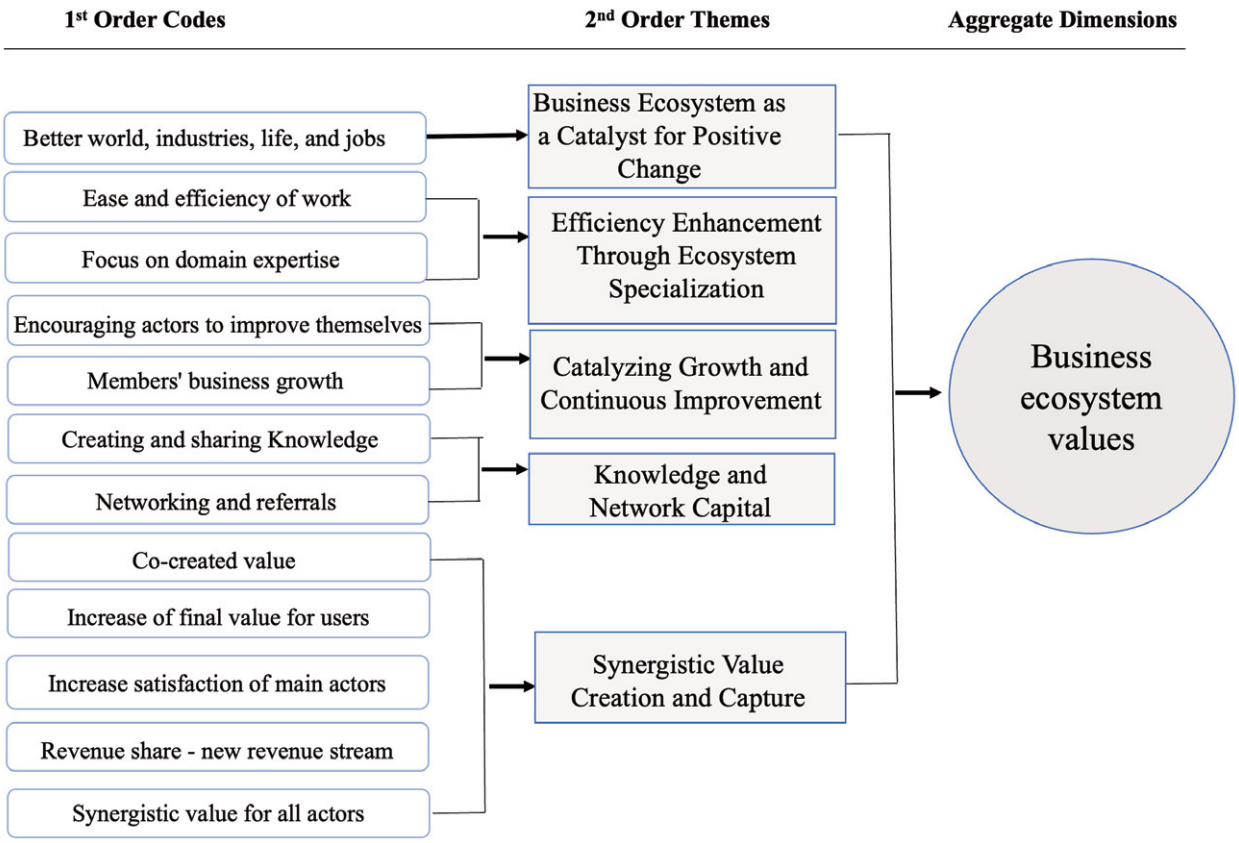
The respondents described the variety of values created by the BE in the second part of the first research question. They provided valuable insights that extend beyond the literature, opening up additional avenues for further research. Most respondents believed that the primary goal of one BE is to increase value for final users and, consequently, for all BE members. The value increase is evident through the increased satisfaction of leading actors and the growth of members' businesses. "Everything is based on the final value delivered. If you function as an individual, an individual as a person, or an individual as a company, you can provide value from the domain in which you have expertise. Moreover, if you function as an ecosystem, you can provide much broader value to the final user, out of your domain and expertise" (Respondent 3). Although the BE literature's foundational principles are rooted in the value for final users, this study's insights reveal that it is equally important for all BE members. "It is not linear but exponential value growth - it is valuable to someone who receives that value from the BE, the customer, or the end user, as well as to each member, which is much stronger than as an individual" (Respondent 2). Beyond the expected perspectives that BE creates, visible and tangible financial benefits for its members, most respondents emphasized a more profound effect of BE on the entire society and the world, by "encouraging each other to improve and change ourselves" (Respondent 4). This value is best described by the Respondent 1, founder of the IT platform that connects employers, employees, young talents, and institutions within the IT industry:

If other industries did the same, we would all work towards a bigger goal on a broader level: creating a better world—better jobs, better conditions, and greater satisfaction with life and everything in it.

The leaders of very large IT companies explained this perspective through their impact on the broader social community: "It is crucial for us to encourage all our partners, members of our BE, to influence their wider environment through ESG and CSR activities, acquiring new principles of doing business and improving the conditions for education, treatment, and various areas. That is what brings the change in the broader society" (Respondent 4). The key values that BE creates are detailed in Figure 3.

Business Ecosystem as a Catalyst for Positive Change captures the transformative potential of BEs to drive broader societal, industrial, and economic outcomes. Participants emphasized that ecosystems are not merely organizational constructs, but rather vehicles for shaping a better world, enhancing industry standards, and improving the quality of life. Although this theme involved all participants' perspectives under a single 1st-order code, their frequency was very high. This finding complements the growing literature portraying ecosystems as plat-

Figure 3: Key Values of the Business Ecosystem



forms for systemic innovation and sustainable transformation (Adner, 2017; Jacobides et al., 2018), but it also extends the BE's impact beyond the economic to areas such as jobs, life, and society. Understanding the impact in these areas requires integrating and using primarily sociological and psychological theories.

The Efficiency Enhancement Through Ecosystem Specialization theme reflects the business ecosystem's role in improving operational efficiency and work effectiveness. It includes benefits such as collaboration, improved process effectiveness, and the ability of firms to focus on their core domain expertise while leveraging partners' specialized capabilities. The insights resonate with Teece's (2007) assertions that ecosystems enable access to complementary assets and dynamic capabilities, allowing firms to specialize and reallocate resources toward high-value activities while relying on ecosystem partners to fill gaps.

The 'Catalyzing Growth and Continuous Improvement' theme encompasses the BE's capacity to stimulate growth at the actor level by encouraging changes, competitiveness, and development. Respondents highlighted how BE leaders motivate other members to evolve, enhance their capabilities, and discover new business opportunities. Consistent with the capability perspective in the literature (Teece, 2007; Kapoor, 2018), BEs are described as environments that develop and reward performance beyond financial and customer satisfaction.

Knowledge and Network Capital theme addresses the dual benefits of knowledge exchange and network development within BEs. Leaders highlighted shared learning, access to specialized knowledge, referrals, and network building as key ecosystem advantages. These findings reflect the interconnection between social and knowledge capital in ecosystems (Powell et al., 1996; Nambisan et al., 2019), challenging the scope of the current stud-

ies from this area. Social capital and Network theories in ecosystems are primarily brought to explain the intensity of members' relations (network size, density, etc.) quantitatively, leaving out the qualitative aspects and importance of willingness to share among members or networking as a process of interacting with others to exchange information and develop professional or social contacts.

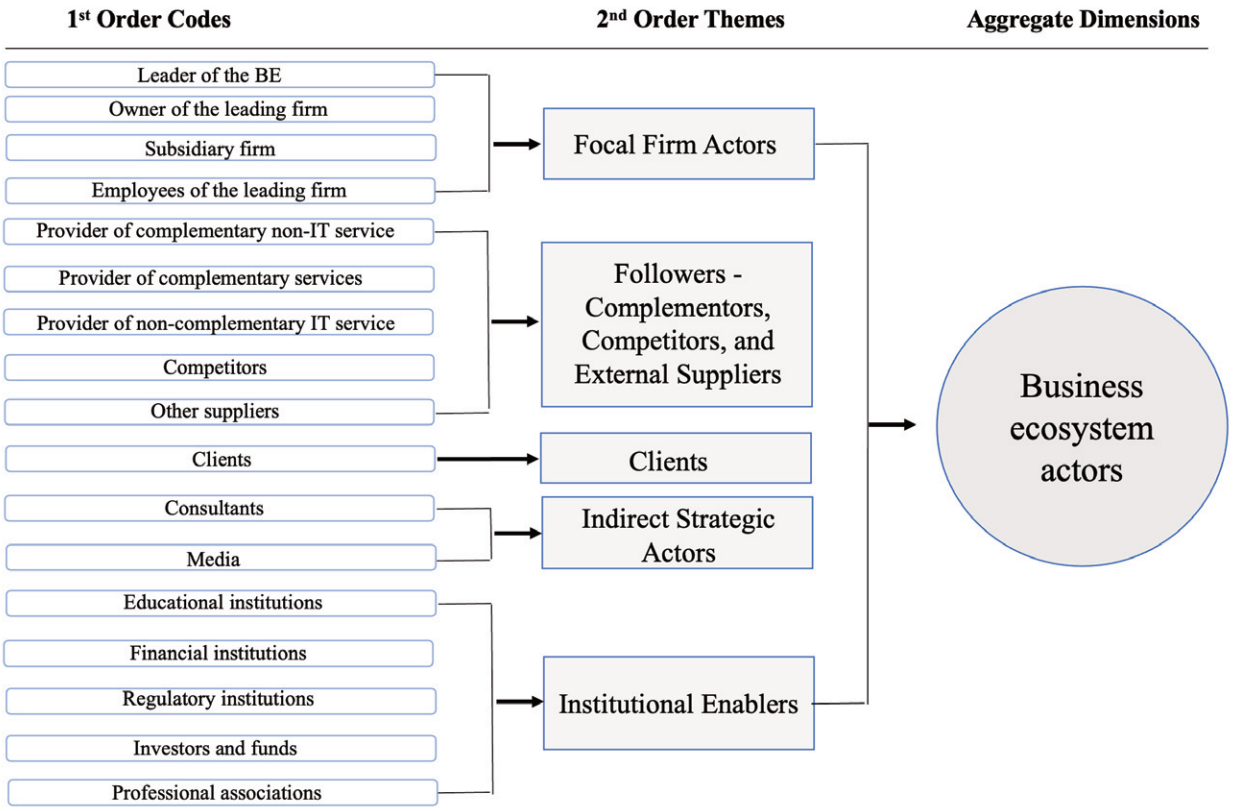
The Synergistic Value Creation and Capture theme emphasizes the mutual value generated through collaboration, including co-created solutions, enhanced value for end-users, and new revenue streams. It also includes satisfaction among key actors and the ability to generate value greater than the sum of individual contributions. The notion of synergistic value aligns with the core premise of BE as a value co-creation system (Moore, 1996), but also with the second phase in evolution of the BE research focused on core technology, and mutual value as a guide, mostly for customer as a main stakeholder (Adner, 2006; den Hartigh & Van Asseldonk, 2004; Peltoniemi & Vuori, 2004). This finding advances the literature by introducing the need to define and assess the value BEs create for all types of actors, beyond customers and focal firms.

4.2 Identifying the key BE actors, their connections, and relation management

Given that BE actors represent one of the perspectives with a relatively high degree of theoretical convergence, the conclusion that participants generally agree on the types of actors in their BEs and their naming is expected. Most respondents describe the ecosystem leader as a "focal actor" and complementary companies or competitors as "followers", which is aligned with most cited BE authors who conceptualized the leading firm as a "keystone" or focal actor that guides and maintains value creation (Moore, 1996; Iansiti & Levien, 2004). There is a significant connection between the firm's size and its BE's structure, in terms of the number and type of actors. The larger firms included institutions, clients, their owners or subsidiary companies, various complementary partners, consultants, and media in their ecosystems. However, institutional engagement in the IT business ecosystems of medium- and small-sized IT firms is low, particularly from regulatory institutions. A few respondents cited educational institutions as their BE members, but the relations were described as "not deep and cooperative enough." The most common actor besides the focal actor is a company provider of non-complementary IT services, such as "a technology partner who provides us with infrastructure and servers" (Respondent 2), or a company provider of complementary IT services, explained as "a partner for some specific software, which we do not have - warehouse management, ERP, and some custom software that are not part of our product portfolio" (Respondent 2). The second frequent type of actor is the company "that deals with complementary businesses but is not a software company – logistics company, marketing agency, etc." (Respondent 8). Commercial partners fit in this actor type, "not technological ones, who sell our services for us, and are only focused on business development activities and take their commission" (Respondent 4). The most valuable insights come from respondents' perspectives on competitors, which can be described as cooperative, necessary, and essential for BE's success. In the words of Respondent 5, "We view most regional IT companies as partners, not competitors, engaged in similar business. So, you are a competitor and a partner simultaneously". Figure 4 presents all key findings related to BE actors, addressing the second research question.

The Focal Firm Actors cluster includes the internal actors of the focal firm, such as leaders, owners, employees, and subsidiaries, who play central roles in initiating, managing, and evolving the BE. These actors typically define the strategic direction and structure of the BE, acting as orchestrators and relationship builders. The focal firm is widely acknowledged in the literature (Adner, 2017; Jacobides et al., 2018) as the ecosystem orchestrator, responsible for shaping governance, coordinating roles, building trust, and fostering collaboration among participants, which aligns with the explanations of the focal firm's role given by respondents. The finding confirms the most recent research that moves beyond actor-name categorization by emphasizing their roles, particularly the coordinating and governance responsibilities of orchestrators (Linde & Sjödin, 2021; Cui et al., 2022; Franco et al., 2022). and the increasing prominence of diverse techno-

Figure 4: Business ecosystem types of actors



logical complementors such as integrators, developers, and research partners (Paasi et al., 2023).

The second group of actors – *Followers*, includes Complementors, Competitors, and External Suppliers. This group comprises external firms that join the ecosystem to complement the focal firm's offerings, compete within the same space, or provide essential services. These actors may include both IT and non-IT service providers and competitors who engage in "coopetition." The coexistence of complementors and competitors reflects the hybrid logic of cooperation and competition ("coopetition") in BEs (Moore, 2006; Riquelme-Medina et al., 2022), and the findings also advance the existing literature by offering a new lens for segmenting BE members. Since these three types of members are primarily focused on the BE leader, their strategic and operational guidance, and are provided with an additional revenue stream from BE activities, following the BE leader is the most suitable expression of their role and position.

Clients, or end users, are positioned as active participants in the ecosystem whose needs, behaviors, and feedback directly influence the co-creation process. This perspective confirms and builds on the user-centered innovation and value co-creation literature (Prahalad & Ramaswamy, 2004; Adner, 2006), encouraging agility, transparency, and the design of customer-centric strategies in BEs, which collectively produce a holistic, integrated technological system that creates value for customers (Agerfalk & Fitzgerald, 2008).

The Indirect Strategic Influencers group comprises consultants and media actors who are not directly involved in ecosystem operations but exert significant influence through knowledge dissemination, perception shaping, and strategic guidance. These actors partially mirror what Adner (2017) refers to as "value enablers" or peripheral influencers. The frequency of their mention in the analyzed BEs suggests that their practical importance exceeds their representation in the existing literature.

Institutional Enablers include institutions that provide structural, regulatory, or financial support to the ecosystem, such as educational institutions, investors, funds, regulatory bodies, and professional associations. These actors serve as BE enablers (Thomas & Autio, 2014), providing the institutional infrastructure necessary for ecosystem stability, legitimacy, and scalability, although their presence in the literature is rare.

When identifying the BE connections and relations among the members, the findings indicate that connections within IT business ecosystems are sustained primarily through informal, person-centered interactions rather than formal governance mechanisms. Relationships tend to emerge organically through repeated personal contact, with the leader of the focal firm acting as the central orchestrator of coordination and exchange. As one participant noted, "The connections happen organically… there is no mechanism, no steering engine" (Respondent 9). Formal structures such as "contracts or hierarchical arrangements" (Respondent 10) were mentioned only marginally, suggesting that formal mechanisms play a secondary role in ecosystem cohesion.

Instead, from the other "side of the coin", respondents consistently emphasized shared vision, culture, and perceived market opportunities as the principal drivers for shaping collaboration. A collective sense of purpose and alignment around common goals was described as more influential than formal rules, while market conditions were seen as naturally encouraging cooperation among members. As one respondent explained, "Our BE culture and way of working are mostly made up of people guided by one mission, who feel that purpose, why they are here, and how they contribute to their work. Bringing everything together in one place is the only way and a big challenge" (Respondent 1). In practice, these relational dynamics are reinforced through informal gatherings initiated by the ecosystem leader, which occasionally evolve into more structured forms of coordination, as explained by Respondent 4 in detail:

We call it Innovation Days. Then, they gather all our partners and ecosystem actors. It is like a mini private fair that lasts two days, with talks and educational sessions on various topics, including the circular economy and sustainability. We also have round tables, etc., and we organize that once every two to three years.

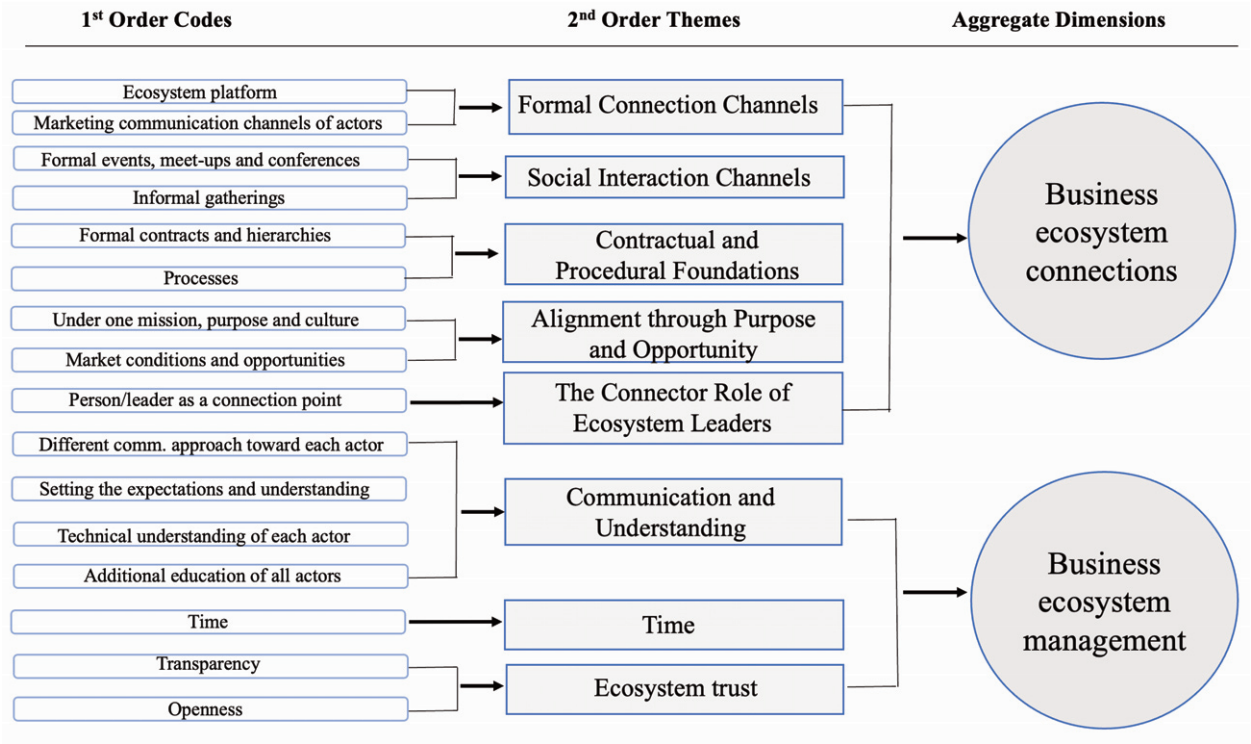
Taken together, these insights portray the BE as socially embedded and trust-based, with coordination relying more on relational capital than on formal control mechanisms, underscoring once more the importance of integrating BET and social capital theory.

According to most respondents, time and a trustworthy communication approach are the critical resources for relationship management in the BE context. One of the respondents, coming from a large IT firm and operating in the BE context for more than ten years, emphasized that "We must adjust our way and channels of communication, namely the tone, how we address them, what messages we send, and, in general, our approach to them. We started to function and work well when we openly and transparently started talking about revenue share, roles, expectations on the project, and so on" (Respondent 10). Figure 5 presents the key findings related to BE Connections and Relations Management, addressing the second research question.

Formal Connection Channels theme includes structured, organizationally defined channels for communication and coordination within the ecosystem. It encompasses digital platforms and the formal marketing communication tools that actors use to present shared offerings or ecosystem identities. These findings confirm the necessity of establishing the infrastructure and formalized tools for ecosystem management (Jacobides et al., 2018), but pose a challenge given their low frequency of mention and the relative insignificance of these relational tools, in contrast to some established BE thinking. These insights are valuable for highlighting additional differences between the BE and similar concepts, such as Platform ecosystems, in which the platform-as-a-connection driver is critical (Sharma et al., 2023).

Social Interaction Channels encompass formal and informal human interactions, such as events, conferences, meet-ups, and spontaneous gatherings, that foster trust and interpersonal rapport among actors, thereby playing a more significant role in shaping cooperation and alignment.

Figure 5: Business ecosystem connections and their management



Contractual and Procedural Foundations capture the structural and governance mechanisms that connect, including formal contracts, hierarchical structures, and defined operational processes. While ecosystems often emphasize flexibility and adaptability, this cluster highlights the underlying backbone of positions and formal transfer links between members that support collaboration (Adner, 2017). This aligns with the latest literature on governance models, which emphasizes a combination of structure and fluidity (Dattée et al., 2018), and considers a formal governance mechanism one of the three most important elements of the BE (Tomas & Autio, 2014).

The Alignment through Purpose and Opportunity group reflects the role of shared mission, purpose, and mutual opportunity as a connective tissue among diverse members. It includes alignment around vision, collective values, and reactions to external market changes and opportunities. This reflects a mission-driven logic (Moore, 1996) that allows BE to evolve while remaining open to changes and responding to new possibilities without losing sight of their collective north star. Based on the main conclusions from prior literature and the identified need to understand the BE concept, its elements, and their relations, it is somewhat expected that the high importance attributed to purpose and value in relevant BEs is not adequately addressed in the literature.

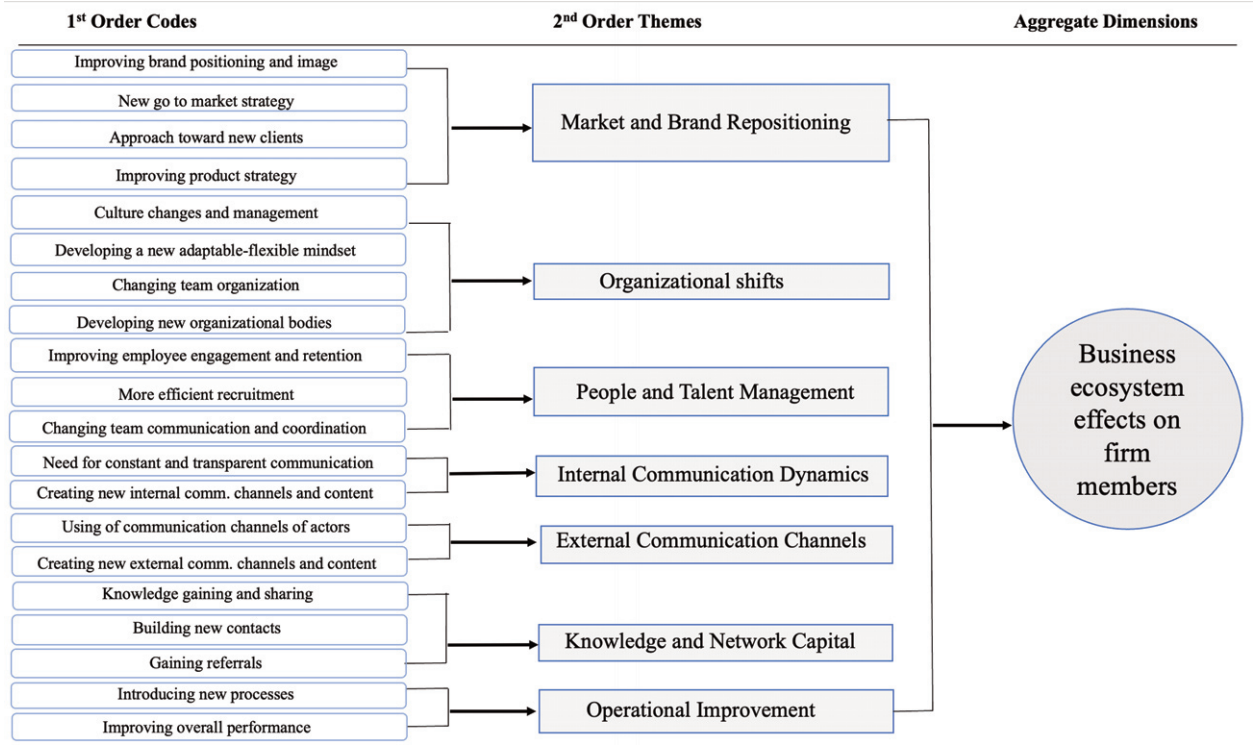
The Connector Role of Ecosystem Leaders theme highlights the role of individual leaders as key interpersonal bridges, connecting disparate actors and ensuring BE cohesion. Several respondents confirmed perception of leaders as charismatic or mission-driven individuals who could "tie everything together" (Respondent 12), especially during the early stages of ecosystem development. This finding aligns with the literature on ecosystem leadership (Nambisan & Zahra, 2016), which finds that personal credibility and the ability to mediate across segments are as important as strategic direction. It also emphasizes the importance of extending the BET by integrating psychology and leadership theories, thereby offering a more comprehensive understanding of which personalities and leadership profiles are best suited to lead in the BE context.

BE relations Management appears to depend on three interrelated relational resources: Communication and Understanding, Time, and Ecosystem Trust, which together form enabling capabilities for sustained collaboration. Effective communication and understanding extend beyond information exchange and encompass tailoring communication to diverse ecosystem actors, ensuring mutual understanding, building technical awareness, setting expectations, and facilitating continuous learning. Top management emphasized the importance of investing time in learning about partner contexts, adapting communication styles, and fostering mutual understanding - particularly in ecosystems characterized by high diversity in roles, sectors, or expertise, which resulted in non-meaningful partnerships. These aspects reflect time as a fundamental but often underestimated BE resource. Underpinning both elements is ecosystem trust, described as the relational climate that enables cooperation through transparency, openness, and consistent commitment. This interpretation aligns with broader ecosystem scholarship, which conceptualizes trust as the social glue sustaining non-hierarchical collaboration (Adner, 2017; Nambisan et al., 2019), and confirms the prior findings described, suggesting that BE and its management are less dependent on formal control mechanisms and more on the development of relational capabilities that enable mutual alignment, learning, and cooperation.

4.3 Effects of the BE on Firm Members

Following the literature review conclusion of significant lack of empirical studies analyzing the effects and performance of BE firms' members, these insights provide broad and valuable insights into different organizational segments affected by being part of BE, from strategic benefits, including brand, market positioning, and operational efficiency, through acquiring knowledge and marketing communications capital, to the central areas of contemporary leadership: organizational and change culture, people and talent management, internal communications, and network capital. One respondent best explains the holistic impact of the BE: "If we are okay as an ecosystem and in symbiosis, everything is great; if we are not, everything is terrible" (Respondent 10). The per-

Figure 6: Business ecosystem effects on a firm member



ception that "positioning of everything we do and can do is better" (Respondent 12) or that "the whole company was built from our ecosystem partnership" (Respondent 8) implicates the broader influence of BE membership than is known in current literature.

As shown in Figure 6, the *Market and Brand Repositioning* theme captures the strategic marketing and positioning shifts that firms undergo during a BE. Codes in this group reflect adjustments in market orientation, including the use of ecosystem communication channels, the development of new go-to-market strategies, the enhancement of brand positioning, and the refinement of approaches to acquiring new clients. The shared infrastructure and visibility generated by the ecosystem allow firms to amplify their presence and co-develop communication strategies, topics, and perspectives uncovered in the BE literature.

Organizational Shifts reflect internal transformations in organizational structure, culture, and mindset in response to BE participation. It encompasses structural changes such as the creation of new bodies, the introduction of new communication processes, and shifts in strategic thinking toward adaptability and shared purpose. Most firms reported creating new roles and teams to manage multilateral relationships and coordination more effectively, thereby extending the current research stream examining coordination mechanisms. Cultural changes, especially adopting more open, collaborative, and flexible mindsets, were emphasized as both requirements and outcomes of ecosystem membership, aligning with the development of specific capabilities needed for the BE context (Foss et al., 2023).

People and Talent Management includes effects related to employee engagement, retention, recruitment efficiency, and internal coordination. Participants describe ecosystems as motivating environments that promote learning, increase team members' internal visibility, and create new incentives for employee growth. These insights suggest that ecosystems serve not just strategic but also human relations (HR) functions, aligning partially with the importance of knowledge sharing (Wulf & Butel, 2017) and collaborative learning (Tomas & Autio, 2014), but also indicating the need for broader HR research within the BE context.

The Internal Communication Dynamics theme focuses on consistent, transparent, and coordinated communication within and among internal ecosystem members. It covers changes in how teams align, understand shared expectations, and maintain ongoing dialogue. The complexity and interdependence of relationships require clear internal messaging, continuous feedback, and mutual understanding across departments, which align with the capabilities that enable trustful and transparent relations, as explained in the prior research question findings.

The Market Communication Channels theme explores how firms utilize the collective communication infrastructure to engage with external stakeholders. This includes using partners' platforms and developing new marketing strategies. Shared platforms, mutual endorsements, and access to broader audiences enable firms to deliver their messaging with greater precision and reach.

Knowledge and Network Capital integrates the growth of intellectual and relational capital, including knowledge acquisition and sharing, the creation of new professional relationships, and access to referrals and networking opportunities. The findings once again confirm the importance of the integrative perspective on the BE concept, with particular emphasis on the integration between BET and social capital theory.

The Operational Improvement theme encompasses internal efficiency gains, process innovation, and overall performance improvement. It reflects the adoption of best practices and the introduction of new tools or methods, with effects mentioned infrequently.

4.4 Critical capabilities for success in the BE context

In the context of Teece's theory of dynamic capabilities (Teece, 1997), a capability refers to "a set of learning processes and activities that enable a company to produce a particular outcome. These capabilities are not simply resources but the skills and routines a firm uses to integrate, build, and reconfigure its internal and external resources to adapt to a changing environment." Among respondents, the concept was recognized as "Everything that we can do to make the whole ecosystem better – our

strengths, knowledge, and resources" (Respondent 1). The main finding leads us to conclude that the most critical capabilities are leadership, including network and socialization, people care, strategy and vision definition, understanding all actors, adaptability to change, high-quality, timely delivery, and social and emotional intelligence. Using the explanation of one respondent, the essence of leadership capabilities is the willingness to change things: "Your willingness to change for the sake of the success of your business. It is the creation of culture and atmosphere in the company. Finding the right people and putting them in the right place means building a culture together, and business and results will be a consequence of that" (Respondent 4). The following conclusion emphasizes that "In IT, people are everything" (Respondent 10), which is why current and future leaders in the BE context must master leadership skills. In the words of Respondent 9, recruitment and retention of people are what make the difference, stating that *this capability is critical for the entire industry - the ability of a leader to create a community from his team, company, or ecosystem.* As expected, for BE to succeed, trust is highlighted as a cornerstone. To build trust, BE members need openness, "openness in every sense" (Respondent 13), and the right choice of partner.

As shown in Figure 7, there are seven groups of identified BE critical capabilities, which, unlike Teece's classification (Foss et al., 2023) into three groups of ecosystem leadership capabilities (sensing, seizing, transforming), offer a deeper perspective into sub-categories and concrete capabilities that can be developed, extending the theoretical perspective and importance of this research stream.

Adaptive and Resilient Leadership emphasizes individual capabilities that enable leaders and employees to remain flexible, emotionally resilient, and growth-oriented in an evolving BE context. It includes adaptability, resilience, personal agility, personal development, and authenticity. Authenticity and self-leadership are identified as key anchors for building trust and alignment, particularly in complex and ambiguous environments. These traits are increasingly recognized in the literature as essential micro-foundations of dynamic capabilities, aligning with recent calls to focus on the human side of ecosystem participation (Teece, 2021; Foss et al., 2023).

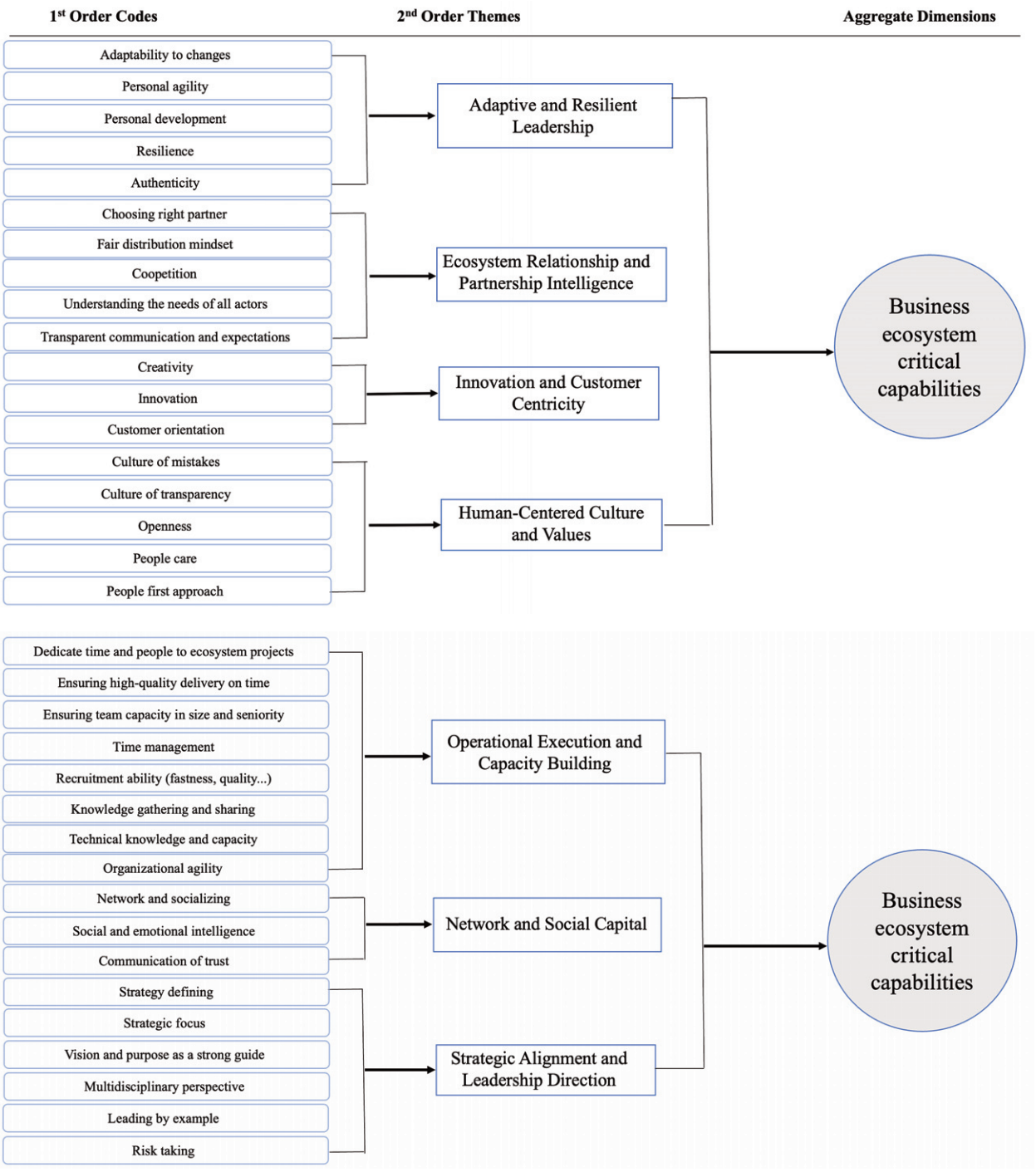
Ecosystem Relationship and Partnership Intelligence embodies an ecosystem mindset that balances competition and cooperation, fosters trust, and aligns with diverse partners. The ability to balance competition and cooperation ("coopetition") emerged as particularly relevant in the IT sector, where even direct competitors often share platforms, clients, or talent pools. These insights support the foundation of the ecosystem literature, which views ecosystems as networks of interdependent actors in both competitive and cooperative relations (Adner, 2017; Jacobides et al., 2018). The findings also highlight the need for a measurable, generally acceptable way to assess levels of coopetition, an identified theoretical gap.

Innovation and Customer-Centricity are novel approaches that respond to evolving customer needs, a vital ingredient for maintaining relevance in ecosystem competition. This group includes innovation capability, creativity, and customer-centric thinking as a capabilities triad that shapes value proposition differentiation. This finding supports a second phase of BE literature evolution, grounded in the ecosystem value proposition fit concept, in which partners are selected based on complementary innovation capabilities and user alignment (Kapoor, 2018; Autio & Thomas, 2022).

Human-centered culture and values reflect cultural enablers of ecosystem participation, such as openness, psychological safety, a culture of mistakes, transparency, and a "people-first" philosophy. The culture of mistakes, where failures are treated as learning opportunities, is highlighted as a necessary shift for many firms entering ecosystems for the first time. The emphasis on a human-centric culture aligns with and confirms the latest ecosystem research, which positions trust and shared norms as key pillars of ecosystem orchestration (Linde & Sjödin, 2021; Mann et al., 2022).

Operational Execution and Capacity Building represent the team's readiness to meet ecosystem demands and execute collaborative projects effectively. It includes team capacity and recruitment, time management, high-quality delivery, knowledge accumulation, and organizational agility. Strategic intent without operational capability leads to underperformance in ecosystems, where delivery speed and reliability shape reputation. Organizational agility, reframed as the firm's ability to reconfigure

Figure 7: Critical capabilities for success in the BE context



teams and projects on short notice, emerges as a necessary capability, confirming recent findings in ecosystem studies (Wulf & Butel, 2021), without extending the theoretical importance of this theme already confirmed in the literature.

Network Capital and Social Navigation underscores the importance of social, relational, and networking skills. It includes the capability to build, sustain, and leverage a network of relationships within and across the ecosystem. This capability

theme was repeatedly referred to as "the hidden engine" of ecosystem participation. Leaders who can connect people, spot relational opportunities, and build influence beyond formal contracts are portrayed as irreplaceable. This finding aligns with previous RQs, underscoring once again the importance of the integrative perspective on the BE concept, particularly the integration between BET and social capital theory.

The Strategic Alignment and Leadership Direction theme includes strategic capabilities such as vision defining, strategic alignment, risk-taking, and building long-term orientation, which are crucial for navigating the complexity of BEs. Firms lacking a strong vision or purpose are seen as "drifting" through partnerships. Given the high frequency of mentions and the number of 1st-order codes involved in this theme, the importance of this perspective is not sufficiently "covered" and aligned across the BE literature, except for a few authors who frame ecosystems as arenas where purpose and flexibility must coexist (Adner & Kapoor, 2016).

5 DISCUSSION AND CONCLUSIONS

5.1 Discussion

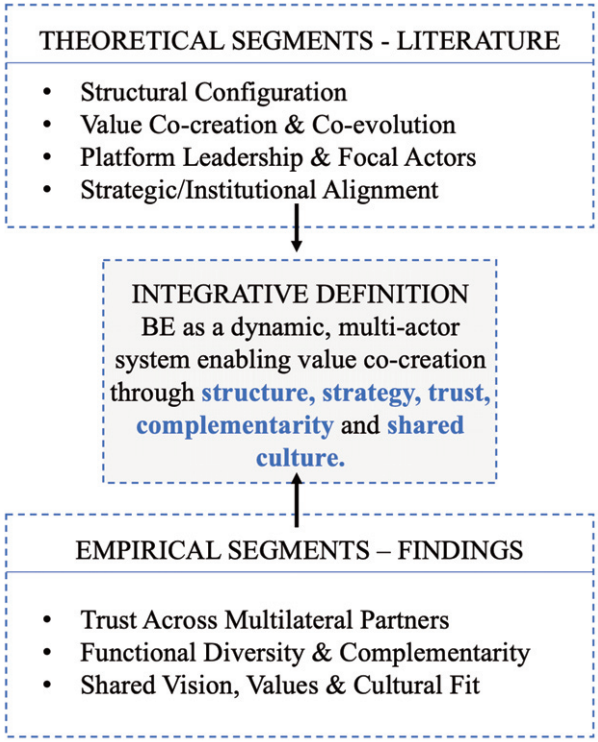
The study results indicate that the BE, perceived as a contemporary form of organization, has been a significant presence in the IT industry over the last decade. Beyond the already known and expected values that BE creates for its members, this study emphasized a more profound impact on society and the world, describing BE as a catalyst for positive change. Although a low degree of institutional engagement in BEs has been identified, particularly from regulatory bodies responsible for creating a positive environment. The study highlights that different perspectives and experiences are present in the basic understanding of the concept, even though the common element across all perspectives is trust, interdependent relations, and a mutual vision that guides. Even though the BE concept offers numerous benefits for firm members, it also presents challenges for management and leadership, requiring concrete identified capabilities for successful and sustainable growth. The challenges reside in the perception that each group's functioning, regardless of the type of relationship, but particularly multidimensional BE relations, is rooted in trust and goes beyond mere transactions. In such an environment, communication and understanding, time management, and ecosystem trust, together form enabling capabilities for sustained collaboration within the BE. This segment of findings implicates one of the most important study's contributions: that the most critical capabilities for BE are leadership capabilities, including network and socialization, people care, strategy and vision definition, understanding of all actors, adaptability to change, high-quality, timely delivery, and social and emotional intelligence. Taken together, these insights portray the BE as socially embedded and trust-based, with coordination relying more on relational capital than on formal control mechanisms, underscoring once more the importance of integrating BET and social capital theory. This lens for analyzing the BE offers fresh and valuable insights into theoretically aligning the BE construct and defining the areas where the BE theory requires extension.

Given that the most important gap in BE theory has been a lack of alignment in understanding what BEs are, this study's findings provide a grounded, practice-based elaboration of how IT managers conceptualize the definition and structure of BEs, as explored through RQ1. Literature over time has framed BE primarily through four key definitional lenses: Structural Configuration – ecosystems as networks of interdependent firms (Moore, 1993; Iansiti & Levien, 2004; Jacobides et al., 2018); Value Creation and Co-Evolution – ecosystems evolve around innovation, customer value, and competitive advantage (Moore, 1996; Teece, 2007; Adner, 2006); Platform or Keystone Leadership – often emphasizing a focal actor coordinating the ecosystem (Iansiti & Levien, 2004; Kapoor, 2018); Strategic or Institutional Alignment – including governance, purpose, and strategic coherence (Adner, 2017; Sharma et al., 2023). While confirming these foundations, this study extends and adds depth from a managerial and relational perspective, highlighting three additional dimensions: Trust as a Foundational Mechanism: trust among multiple, diverse actors is actively built and sustained to reduce friction and enable long-term collaboration; Functional Diversity

and Complementarity: different types of actors (including competitors and institutions) play specialized yet interdependent roles in the ecosystem; Shared Vision, Values, and Culture: alignment elements (e.g., shared purpose, openness, and cultural fit) are central to ecosystem cohesion and effectiveness. These findings suggest that BEs are not only strategic constellations or structural networks but also relational systems in which trust, functional connections, and shared values are essential for sustainable collaboration and value creation. Figure 8 illustrates the previous findings.

While Moore (1993, 1996) initially characterized BEs as loosely connected entities that evolve through co-evolution and competition, this study contradicts prior studies, showing that trust among multiple actors is not a consequence of evolution, but rather a foundational enabler. Since the literature indicates that transactional uncertainty and competition are among the most critical topics in the business environment, our respondents view ecosystems as relational architectures in which mutual trust among partners reduces these unwanted behaviors. The theme of the Functionality of Complementary and Diversified Actors reflects a more complex actor configuration than has been traditionally emphasized. While Iansiti and Levien (2004) offered a keystone-centric model (leader, niche players, and dominators), and Peltoniemi and Vuori (2004) highlighted the dynamic evolution of interdependent entities, this study underscores how actors of varied functionality (e.g., competitors, complementors, suppliers, institutions) are not only structurally diverse but also mutually functional. This empirical insight resonates with Jacobides et al. (2018), who expanded the view of ecosystems as modular systems coordinated around value creation, yet added a horizontal layer of operational interdependence, often missing in more hierarchical ecosystem representations. The third theme, Shared Vision and Value Alignment, complements the value co-creation emphasis seen in Teece (2007) and Hou & Shi (2021) but further reveals that shared cultural elements, including values, vision, and purpose, drive ecosystem cohesion. This internal alignment serves as a soft governance mechanism, as suggested by Sharma et

Figure 8: Integrative approach to BE definition



al. (2023), reducing friction and ensuring that diverse actors collectively move toward mutual goals. Together, the three emergent themes portray BEs not only as structural networks or strategic constellations, but as collectives, in which inter-organizational trust, actor complementarity, and shared vision are jointly required for ecosystem functioning. In sum, the integrative approach of BE understanding confirms and expands current thinking of the nature of the BE, supporting a shift in the literature toward more integrative and socially embedded perspectives and inviting further exploration and theoretical alignment, as well as research on how trust, actor complementarity, and shared culture can be conceptualized and measured.

Most respondents agree on classifying actors, such as focal firms, complementary partners, and competitors, and reflect an intuitive understanding of ecosystem interdependencies. Notably, the data underscores the firm-size dependency in BE complexity: larger firms maintain more diverse actor networks, including institutions, commercial distributors, and specialized service providers, whereas small and medium firms exhibit more limited institutional engagement. This reflects previous research on ecosystem embeddedness and scope (Peltoniemi, 2006; Thomas & Autio, 2014), and suggests the need for differentiated strategic responses based on a firm's role. The cooperative view of competitors aligns with the literature on coopetition as a key logic in ecosystems (Ritala et al., 2016; Teece et al., 2023), confirming the fluidity of roles and the relational embeddedness that underpins ecosystem functioning (Wulf & Butel, 2017). These findings under RQ2 raise additional questions and highlight the need for theoretical alignment on the typology of BE actors, as well as for the development of frameworks and scales to measure the intensity of relations among different actors empirically. The deep analysis of respondents' answers provides valuable insights: the general structure of their BE (the number and types of BE actors) is correlated with the intensity of actors' relations and with the performance of individual BE actors. This insight raises an important topic for further research: how the BE structure is defined and measured, and the kind and direction of its relation to firm performance and the overall results of the BE. Analyzing these insights through the lens of the industrial organization theory of the firm, following its basic assumption that market structure (market considered as a level of a firm's environment) influences firm performance through the conduct of the firm, which has become known as the structure-conduct-performance paradigm (Den Hartigh, E., & Van Asseldonk, T., 2004), and knowing that the BE is a new kind of firm environment, this construct relations becomes even more attractive for further research.

The findings reveal that ecosystem relationships are primarily informal, personal, and based on trust. The formal mechanisms of coordination, such as contracts, governance systems, or shared digital infrastructures, are almost absent. Instead, interpersonal ties, cultural affinity, and shared vision emerge as the key binding forces, summarized in an interesting way: "The connections happen organically... There is no steering engine" (Respondent 2). These insights reinforce previous studies that highlight the emergent and self-organizing nature of ecosystems (Autio & Thomas, 2014; Dattée et al., 2018), especially in industries characterized by rapid change and low institutionalization. At the same time, ecosystem leaders play a central role in orchestrating, often relying on informal, personalized events and contacts to keep the ecosystem coherent. Taken together, these two perspectives imply that ecosystem orchestration requires symbolic leadership and cultural anchoring, not just transactional management (Nambisan & Sawhney, 2011; Williamson & De Meyer, 2012), confirming and extending the literature from this research stream. Supporting the growing trend of studies on ecosystem orchestration (Linde & Sjödin, 2021; Mann et al., 2022; Parida & Jovanovic, 2024) in the last 5 years, it can be concluded that the spectrum and type of orchestration mechanisms are broad, and there is a need for additional empirical studies of their usage and relevance. This conclusion also explains why ecosystem leadership capabilities are becoming a rising topic in BE literature (Kenichiro & Naoshi, 2024). Additionally, suppose this study reveals that the BE has a primary self-organizing nature. In that case, it raises a question about its essential difference from other existing forms of partnership, such as the market, industry, value chain, or network, which is crucial for achieving a fundamental theoretical alignment on BE as a construct.

Perhaps the most novel and actionable finding is that leadership capabilities are the cornerstone of ecosystem success. Respondents were unexpectedly fluent in the language of capabilities, frequently referencing terms such as adaptability, emotional intelligence, the definition of vision, and building trust. The definition and categorization of the microfoundation of capability building and of concrete capabilities themselves provide valuable insights for further research, particularly for those with an integrative approach to BET and related theories. In summary, this study provides grounded, empirical evidence that confirms and extends current understanding of ecosystem capabilities, aligning with the recent dynamic capabilities' literature, which positions ecosystem leadership as a composite of sensing, relating, and orchestrating skills (Teece, 2017; Teece et al., 2023). Rather than emphasizing only technical, financial, or structural resources, respondents overwhelmingly pointed to leadership presence, trust, people skills, and the creation of a shared identity and purpose as the true engines of ecosystem performance. These findings on capability development in ecosystems (Parida & Jovanovic, 2024) invite further exploration of how leadership capabilities and organizational culture intertwine with ecosystem success, as well as how to measure and universally apply them to support quantitative studies that can generalize conclusions.

The effects of BEs on firm members are multidimensional and extend well beyond strategic positioning, as respondents identified benefits across multiple organizational layers. Although a recognized lack of theory exists to explain how firms co-create, capture, and defend value within ecosystems (Krome & Pidun, 2023), this study's findings confirm and expand the need for a theoretical and empirical understanding and classification of all firm-level effects of the BE environment. On the contrary of the previous studies that were focused on the health of a business ecosystem through robustness, productivity and niche creation (Iansiti & Levien, 2004), or through partner health and network health (den Hartigh et al., 2006), the most frequent effects identified by this study are: improvement of market and brand position, internal and external communications channels, and acquiring knowledge and network capital. These perspectives suggest that future empirical studies are warranted, aligning with the general recommendation for increased research on the success of business ecosystem members (Awano & Tsujimoto, 2021).

By addressing four interrelated research questions, this research advances understanding of BEs not as abstract market constructs but as living, socially embedded systems shaped by leaders, cultural alignment, informal ties, and specific capabilities. This research confirms and expands upon key streams of recent literature, grounding them in detailed empirical insights. Taken together, the findings underscore the importance of the theoretical boundaries of the BE concept, ecosystem leadership capabilities, informal coordination mechanisms, and trust-based relationships as pillars of successful BE navigation.

5.2 Theoretical contributions

Considering the identified theoretical gaps, the main objectives of this study, and the author's practical experience and observations of the explored empirical phenomenon (BE), this research's primary contributions lie in the scientific field.

This study offers several theoretical contributions to the evolving literature on BEs. First and foremost, it sheds light on the BE concept, its boundaries, actors, and their roles by anchoring the abstract BE construct in empirical, practice-based insights. While earlier literature has introduced a variety of ecosystem definitions, often emphasizing strategic alignment (Moore, 1993), co-evolution (Iansiti & Levien, 2004), or architecture and complementarities (Adner, 2017; Jacobides et al., 2018), this study addresses the persistent lack of grounded empirical studies (Peltoniemi, 2006; Thomas & Autio, 2014). It clarifies how ecosystems function in everyday business life, particularly through informal ties, shared vision, trust, and social capital, thereby improving understanding of the novel BE theoretical approaches that still require standardization in definitions and applications, as well as an integrated approach with other disciplines, primarily sociology and psychology.

Second, the findings illuminate the diversity of actors and relationships within BEs, offering a framework for understanding ecosystem structure and interactional dynamics. Beyond focal actors and

complementors, the study reveals that educational institutions, regulatory bodies, competitors, and commercial partners play roles of varying intensity and importance, depending on the firm's size and ecosystem maturity. These insights extend the concept of ecosystem embeddedness and multi-actor cooperation, as seen in recent studies (Wulf & Butel, 2017; Kapoor, 2018; Williamson & De Meyer, 2012).

Third, by focusing on the leadership and relational capabilities necessary for ecosystem success, the study situates itself within and advances the literature on dynamic ecosystem capabilities (Teece, 2017; Teece et al., 2023). These findings offer fertile ground for extending current theories of ecosystem leadership, orchestration, and coopetition (Ritala et al., 2022).

Importantly, the study lays a solid empirical foundation for future quantitative research. Identifying and categorizing the key constructs (e.g., ecosystem structure, actors' diversity, embeddedness, ecosystem trust, leadership capabilities, the role of informal interactions) creates a basis for developing initial measurement scales and conducting scale surveys. These steps are crucial for advancing toward validated, testable models of business ecosystems, which the field currently lacks. It also fills the gap in the lack of firm-level studies in BE, providing a wide range of strategic effects that BE has on a firm member.

5.3 Practical contributions

Regarding practical, managerial, and implicative contributions, the study offers actionable insights for BE participants, especially in fast-evolving sectors like IT.

First, it helps practitioners understand what constitutes a business ecosystem. Leaders of focal firms can utilize these insights to recognize and mobilize the full spectrum of actors, including those not traditionally considered partners, such as competitors or educational institutions, while fostering a shared culture and long-term vision.

Second, there are numerous applied contributions for managers and leaders in the process of strategy planning and strategy execution. The findings underscore the importance of leadership relational capabilities, especially trust, openness, and communication, as key enablers of thriving ecosystems. For practitioners, this means shifting away from transactional relationships toward intentional people management, where leadership is exercised through strategy, empathy, alignment, and a shared vision. The study guides ecosystem development and the orchestration of critical capabilities for ecosystem leaders to cultivate and prioritize, suggesting that soft skills, network development, and agility are as important as technological and financial assets. Ultimately, this study can inform internal organizational design and leadership development programs focused on BE management and engagement by providing a comprehensive understanding of how BEs impact firms, from strategic positioning to cultural transformation and talent retention.

Third and final, this study's insights regarding BE structure and actors offer stimulus for regulators and other institutional members of the ecosystem to improve their impact and activities (by improving policies and laws, regulatory framework, launching education initiatives, etc.) in the BE area as an essential part of the business and society.

5.4 Limitations and Future Research Areas

While this study provides valuable insights into the structure, functioning, and leadership of business ecosystems in the IT industry, several limitations must be acknowledged. First, the number of firms included in the study was relatively small (14), limiting the generalizability of the findings. Although the sample provided rich, in-depth qualitative data, it may not capture the full diversity of ecosystem configurations, particularly in other sectors or geographic regions.

Second, the sample comprised firms of varying sizes, from small and medium enterprises to large IT companies. This heterogeneity may have affected the comparability of their experiences and perspectives, particularly regarding resources, capabilities, and stakeholder networks. The differing positions of the respondents within the ecosystem and the varying maturity levels of their ecosystems may have also affected the consistency of the insights.

Third, the confidential and strategically sensitive nature of the topics discussed, particularly those related to internal relationships, capability development, and competitive positioning, may have led some respondents to withhold certain information or frame their responses in a more favorable light. Despite building rapport and ensuring anonymity, the possibility remains that responses were shaped by social desirability or reputational concerns.

Fourth, the study employed purposive sampling, in which participants were selected based on the researcher's judgment of their relevance and expertise. While this approach is appropriate for exploratory qualitative research, it introduces an inherent selection bias that may limit the sample's representativeness. Furthermore, the dual role of the researcher, as interviewer and primary analyst, introduces the potential for interpretive bias. The interviewer's tone of voice, energy, and personal style may have subtly shaped the responses or influenced the depth and direction of specific discussions. Similarly, the researcher's perspectives and prior knowledge influence the coding, interpretation, and thematization of the data.

The findings of this qualitative study open several promising avenues for future research. Given the study's exploratory nature and its foundation in semi-structured interviews, the insights presented here can serve as a conceptual springboard for broader empirical validation. One immediate direction for future research is to develop a structured survey instrument that operationalizes the identified business ecosystem constructs, such as actor typologies, leadership capabilities, relational mechanisms, and perceived performance outcomes. Such a survey could be distributed across a larger, more representative sample to test the generalizability of the findings and to capture variance across industries, geographies, or firm sizes.

In particular, survey-based research would enable the application of statistical techniques, which can uncover causal pathways among BE variables. For instance, future studies could test whether specific leadership capabilities, such as strategic vision, adaptability, or ecosystem orchestration, mediate the relationship between actor configuration and ecosystem performance. This would address the current gap in the literature regarding the measurable effects of ecosystem dynamics on firm-level outcomes.

Ultimately, the present study provides a valuable foundation for developing the first generation of measurement scales for the business ecosystem. Concepts such as ecosystem leadership capabilities, network capital, and ecosystem performance, which were thematically solidified through empirical interviews, can now be theoretically refined and operationalized into scalable metrics, allowing for more rigorous, comparative, and replicable studies in the future.

In short, this study invites a more structured, quantitatively grounded research agenda that complements its qualitative depth and advances the theoretical and empirical frontiers of business ecosystem scholarship.

5.5 Conclusions

This study contributes to the growing body of literature on BE by offering a nuanced and empirically grounded understanding of how small, medium, and large IT firms in a transitional economy perceive, structure, and navigate their ecosystem environments. Through a qualitative exploration of 14 purposefully selected firms, the research offers a comprehensive perspective on five critical dimensions of business ecosystems: definition, actor configuration, member relations, effects on firm-level performance, and the dynamic capabilities necessary for BE participation and success.

A key contribution of the study is to provide a grounded, practice-based elaboration of how IT leaders define and structure BEs, expanding the current BE concept with three constitutive elements: trust, functional complementarity, and shared culture. Beyond focal actors and complementors, a diverse range of ecosystem members have been identified, including commercial intermediaries, informal competitors, and non-technological collaborators, underscoring the fluidity and relational embeddedness of BEs. This finding supports the call for broader actor classification in BE literature and highlights the importance of coopetition in contemporary IT markets.

Second, the study reveals that ecosystem cohesion and performance rely less on formal governance mechanisms and more on personal leadership, social dynamics, and shared cultural values. Particularly in SMEs, informal gatherings, interpersonal communication, and vision-driven coordination offset the absence of institutional regulation. These findings complement prior work on ecosystem orchestration (e.g., Teece, 2017; Wulf & Butel, 2017) and extend it by illustrating the emotional and relational labor embedded in ecosystem leadership.

Third, the study highlights the pervasive impact of ecosystem participation on internal organizational processes, particularly in areas of talent retention, organizational culture, and strategic alignment. As respondents repeatedly emphasized, successful ecosystem engagement requires leaders to act as both strategic orchestrators and culture builders. This highlights the increasing importance of ecosystem leadership and dynamic capabilities (Teece, 1997, 2023) in complex, networked environments.

Ultimately, this study's most forward-looking contribution lies in identifying key constructs that form the conceptual basis for future measurement and modeling. The research lays the groundwork for developing ecosystem performance indicators and leadership capability scales, providing fertile ground for subsequent quantitative studies that establish causality and generalizability.

In summary, this study enhances our understanding of BEs by illustrating how firms, particularly those in the IT sector of transitional economies, experience and shape their ecosystems in profoundly human, strategic, and adaptive ways. Its value lies in addressing gaps in empirical research and offering actionable insights for scholars and practitioners committed to navigating complexity through cooperation, focus on critical capabilities, and leading with purpose.

EXTENDED SUMMARY/IZVLEČEK

Koncept poslovnega ekosistema se je v akademskem in managerskem diskurzu močno uveljavil, a ostaja empirično premalo raziskan, zlasti na ravni posameznega podjetja. Ta kvalitativna študija zapolnjuje ključne vrzeli v literaturi z raziskovanjem tega, kako vodje malih, srednje velikih in velikih IT podjetij v Srbiji razumejo svoje poslovne ekosisteme in se v njih orientirajo. Na podlagi 14 polstrukturiranih poglobljenih intervjujev raziskava preučuje, kako je poslovni ekosistem zaznan, katere vrste akterjev so vanj vključene, kakšne učinke ima na posamezno podjetje ter katere sposobnosti so ključne za konkurenčno prednost v omrežnih okoljih. Koncept poslovnega ekosistema je pretežno opisan kot sodelovalni sistem soodvisnih akterjev, usklajenih okoli skupnih ciljev, zaupanja in dolgoročne vizije, ne pa kot toga, hierarhična struktura. Ugotovitve kažejo, da se poslovni ekosistemi vzdržujejo prek neformalnih, zaupanja vrednih odnosov, ki jih vodi skupna kultura, ne pa prek formalnih mehanizmov. Vodstvene sposobnosti, kot so čustvena inteligenca, zmožnost socialnega navigiranja in usklajevanja individualnih in skupnih ciljev, se izkazujejo kot najpomembnejši dejavniki uspešnosti poslovnega ekosistema. Študija nadalje poudarja celovit vpliv poslovnega ekosistema na uspešnost podjetja. Prispevek razširja obstoječe teoretično delo o poslovnih ekosistemih z izpostavljanjem socialnih in dinamičnih vidikov vodenja ekosistema ter ponuja konkretne usmeritve za praktike, ki delujejo v kompleksnih okoljih.

REFERENCES

Adner, R. (2006). Match your innovation strategy to your innovation ecosystem. *Harvard Business Review*, *84*(4), 98–107.

Adner, R. (2017). Ecosystem as structure: An actionable construct for strategy. *Journal of Management*, *43*(1), 39–58.

Adner, R., & Kapoor, R. (2010). Value creation in innovation ecosystems: How the structure of technological interdependence affects firm performance in new technology generations. *Strategic Management Journal*, *31*(3), 306–333.

Adner, R., & Kapoor, R. (2016). Innovation ecosystems and the pace of substitution: Re-examining technology S-curves. *Strategic Management Journal*, *37*(4), 625–648.

Agerfalk, P. J., & Fitzgerald, B. (2008). Outsourcing to an unknown workforce: Exploring opensourcing as a global sourcing strategy. *MIS Quarterly*, 32(2), 385–409.

Attour, A., & Barbaroux, P. (2016). Ecosystemic capabilities and knowledge management: The interplay between firms' capabilities and their ecosystem. *Journal of Innovation Economics & Management*, *21*(3), 69–92.

Autio, E., & Thomas, L. D. W. (2022). Value creation in business ecosystems: Towards a new co-creation agenda. *Innovation: Organization & Management*, *24*(4), 1–18.

Awano, H., & Tsujimoto, M. (2021). The mechanisms by which business ecosystem members capture part of a business ecosystem's jointly created value. *Sustainability, 13*(8), 4573.

Awano, R., Tamura, M., Ohta, T., & Ishida, M. (2022). A study on the evolution of inter-organizational networks in business ecosystems. *Sustainability*, *14*(16), 10104.

Bogers, M., Sims, J., & West, J. (2019). What is an ecosystem? Incorporating 25 years of ecosystem research. *Academy of Management Proceedings*, *2019*(1), 11943.

Brandenburger, A. M., & Nalebuff, B. J. (1996). *Co-opetition*. Currency Doubleday.

Creswell, J. W. (2003). *Research design: Qualitative, quantitative, and mixed methods approaches* (2nd ed.). SAGE Publications.

Creswell, J. W. (2007). *Qualitative inquiry and research design: Choosing among five approaches* (2nd ed.). SAGE Publications.

Cui, A. S., Wu, F., & Cavusgil, E. (2022). Orchestrating innovation ecosystems: A multi-layered dynamic capabilities perspective. *Journal of the Academy of Marketing Science*, *50*(4), 663–686.

Dattée, B., Alexy, O., & Autio, E. (2018). Maneuvering in poor visibility: How firms play the ecosystem game when uncertainty is high. *Academy of Management Journal*, *61*(2), 466–498.

Den Hartigh, E., & Van Asseldonk, T. (2004, October). Business ecosystems: A research framework for investigating the relation between network structure, firm strategy, and the pattern of innovation diffusion. In *ECCON 2004 annual meeting: Co-jumping on a Trampoline, The Netherlands.*

Den Hartigh, E., Tol, M., & Visscher, W. (2006, October). The health measurement of a business ecosystem. In *Proceedings of the European Network on Chaos and Complexity Research and Management Practice Meeting (pp. 1–39).*

Den Hartigh, E., Tol, M., & Visscher, W. (2013). The health measurement of a business ecosystem. *European Journal of Innovation Management*, *16*(1), 100–119.

Dhanaraj, C., & Parkhe, A. (2006). Orchestrating innovation networks. *Academy of Management Review*, *31*(3), 659–669.

Espina-Romero, A., Guerrero-Alcedo, R., & Ossio, F. M. (2023). A systematic review of business ecosystem definitions: Multiple perspectives and future research agenda. *Journal of Business Research*, *157*, 113590.

Fathi, M., & Harandi, A. (2012). Identifying and prioritizing business ecosystem risks using a fuzzy TOPSIS method. *Procedia - Social and Behavioral Sciences*, *62*, 744–748.

Foss, N. J., Schmidt, J., & Teece, D. J. (2023). Dynamic capabilities and transaction cost economics: Theory development and business implications. *Journal of Strategic Marketing*, *31*(1), 3–19.

Franco, M., Haase, H., & Gomes, D. (2022). Orchestrating innovation through business ecosystems: The role of leadership and trust. *Journal of Innovation & Knowledge*, *7*(4), 100215.

Guba, E. G. (1978). *Towards a methodology of naturalistic inquiry in educational evaluation.*

Los Angeles, CA: CSE Monographs series.

Hou, J., & Shi, Y. (2021). Business ecosystem: Structure and strategic management. *European Management Journal*, *39*(5), 625–635.

Iansiti, M., & Levien, R. (2004). *The Keystone Advantage: What the New Dynamics of Business Ecosystems Mean for Strategy, Innovation, and Sustainability*. Harvard Business School Press.

Jacobides, M. G., Cennamo, C., & Gawer, A. (2018). Towards a theory of ecosystems. *Strategic Management Journal*, *39*(8), 2255–2276.

Kapoor, R. (2018). Ecosystems: Broadening the locus of value creation. *Journal of Organization Design*, *7*(1), 1–16.

Karhiniemi, A. (2009). Platform-based business models: Towards understanding business model design in an ecosystemic context. *VTT Tiedotteita - Research Notes*, *2491*, 1–83.

Kenichiro, B., & Naoshi, U. (2024). Business ecosystems and leadership: Exploring the integration of dynamic capabilities. *Technological Forecasting and Social Change*, *196*, 122837.

Kohtamäki, M., Parida, V., Patel, P. C., & Wincent, J. (2023). Dynamic capabilities and the microfoundations of ecosystems: An integrative framework. *Industrial Marketing Management*, *108*, 202–215.

Korovkin, V., Rogozina, M., & Eliseeva, D. (2021). Business ecosystems: Empirical analysis and managerial implications. *Russian Management Journal*, *19*(4), 365–390.

Krome, M. J., & Pidun, U. (2023). Conceptualization of research themes and directions in business ecosystem strategies: a systematic literature review. *Management Review Quarterly, 73*(2), 873-920.

Linde, L., & Sjödin, D. R. (2021). Business ecosystem innovation: Addressing dynamic and structural challenges in innovation ecosystems. *Technovation*, *105*, 102264.

Liu, Z., Li, Z., Zhang, Y., Mutukumira, A. N., Feng, Y., Cui, Y., Wang, S., Wang, J., & Wang, S. (2024). Collaborative innovation performance and business ecosystem: A meta-analysis. *Journal of Business Research*, *171*, 114235.

Lu, Y., Guo, B., Luo, Z., & Hao, Y. (2014). Business ecosystem evolution: A co-evolutionary perspective. *Industrial Management & Data Systems*, *114*(5), 690–705.

Mann, H., Bygdeson, J., & Andersson, T. (2022). The role of orchestration in business ecosystems: A capability-based perspective. *Journal of Business Research*, *143*, 89–103.

Moore, J. F. (1993). Predators and prey: A new ecology of competition. *Harvard Business Review*, *71*(3), 75–86.

Moore, J. F. (2006). *Business ecosystems and the view from the firm*. The Antitrust Bulletin, *51*(1), 31–75.

Nambisan, S., & Sawhney, M. (2011). Orchestration processes in network-centric innovation: Evidence from the field. *Academy of Management Perspectives*, *25*(3), 40–57.

Nambisan, S., & Zahra, S. A. (2016). The role of demand-side narratives in opportunity formation and enactment. *Journal of Business Venturing Insights*, *5*, 70–75.

Nambisan, S., Zahra, S. A., & Luo, Y. (2019). Global platforms and ecosystems: Implications for international business theories. *Journal of International Business Studies*, *50*(9), 1464–1486.

National AI Platform. (2023, April 11). *ICT is one of Serbia's most promising industries!* National AI Platform. https://ai.gov.rs/vest/en/435/ict-is-one-of-serbias-most-promising-industries.php

Paasi, J., Wiman, H., Apilo, T., & Valkokari, K. (2023). Value creation and governance in business ecosystems: A longitudinal study. *Technological Forecasting and Social Change*, *190*, 122378.

Palmié, M., Wincent, J., Parida, V., & Caglar, U. (2022). The evolution of the business ecosystem concept: A systematic literature review. *Journal of Business Research*, *133*, 252–264.

Parida, V., & Jovanovic, T. (2024). Governing business ecosystems: Frameworks and future research directions. *Journal of Business Research*, *161*, 113875.

Peltoniemi, M., & Vuori, E. (2004). Business ecosystem as the new approach to complex adaptive business environments. *Frontiers of e-Business Research*, *2*, 267–281.

Powell, W. W., Koput, K. W., & Smith-Doerr, L. (1996). Interorganizational collaboration and the locus of innovation: Networks of learning in biotechnology. *Administrative Science Quarterly*, *41*(1), 116–145.

Prahalad, C. K., & Ramaswamy, V. (2004). *The future of competition: Co-creating unique value with customers*. Harvard Business School Press.

Ribeiro, T. F., Nogueira, R., & Chimenti, P. (2024). Integrating business ecosystems and social networks: A case study on sustainable transitions. *Sustainability, 16,* 11045.

Riquelme-Medina, D., Crespo, M., & Espinoza-Freire, E. (2022). Dynamic capabilities in business ecosystems: A systematic literature review. *Journal of Business Research*, *144*, 438–449.

Ritala, P., Agouridas, V., Assimakopoulos, D., & Gies, O. (2022). Business ecosystem dynamics and orchestration: A qualitative study. *Technological Forecasting and Social Change*, *177*, 121502.

Rong, K., Wu, J., Shi, Y., & Guo, L. (2022). Building ecosystem strategies: A framework and application in the digital economy. *Technological Forecasting and Social Change*, *179*, 121598.

Saeed Fallah Tafti, S., Zott, C., & Amit, R. (2015). Business model design and performance of entrepreneurial firms. *Organization Science*, *26*(2), 500–521.

Saunders, M., Lewis, P., & Thornhill, A. (2009). *Research Methods for Business Students* (5th ed.). Pearson Education.

Sharma, M., Bittencourt, B., & Marques, R. P. (2023). Understanding ecosystems: A systematic literature review. *Journal of Cleaner Production*, *410*, 137182.

Shou, Z., Shi, J., & Ren, S. (2022). Ecosystem synergy and firm performance: The role of digital capabilities. *Industrial Marketing Management*, *100*, 134–144.

Teece, D. J. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, *18*(7), 509–533.

Teece, D. J. (2007). Explicating dynamic capabilities: The nature and microfoundations of (sustainable) enterprise performance. *Strategic Management Journal*, *28*(13), 1319–1350.

Teece, D. J. (2017). Dynamic capabilities and entrepreneurial management in large organizations: Toward a theory of the (entrepreneurial) firm. *European Economic Review*, *86*, 202–216.

Teece, D. J. (2023). Business ecosystems, platforms, and innovation: Strategic management and dynamic capabilities in the new era. *California Management Review*, *65*(3), 5–24.

Thomas, L. D., & Autio, E. (2014). The process of ecosystem emergence. *Academy of Management Proceedings*, *2014*(1), 14111.

Trost, T., & Bavdaž, M. (2025). *How to design a sampling strategy in qualitative research.* SAGE Publications Ltd.

Williamson, P. J., & De Meyer, A. (2012). Ecosystem advantage: How to successfully harness the power of partners. *California Management Review*, *55*(1), 24–46.

Wieninger, S., Schief, M., & Becker, J. (2019). Business ecosystem modeling: A structured literature review. *Electronic Markets*, *29*, 651–671.

Wulf, J., & Butel, L. (2021). Measuring ecosystem orchestration: A process-based approach. *Industrial Marketing Management*, *94*, 240–255.

Yu, D., Li, Y., & Zhao, X. (2011). Business ecosystem evolution: A co-evolutionary perspective. *International Journal of Information Technology & Decision Making*, *10*(5), 925–945.

Yoon, C., Moon, S., & Lee, H. (2022). Symbiotic relationships in business ecosystem: A systematic literature review. *Sustainability*, *14*(6), 2252.

Zhu, Y., & Du, J. (2023). A review on business ecosystem governance: Structures, mechanisms and implications. *Technology Analysis & Strategic Management*, *35*(1), 26–41.

Zupic, I., & Čater, T. (2015). Bibliometric methods in management and organization. *Organizational Research Methods*, *18*(3), 429–472.

APPENDIX 1: THE LIST OF QUESTIONS FOR SEMI-STRUCTURED INTERVIEW

Theme I: Firm-o-graphics

Respondent name:
Respondent position:
Firm name:
Firm size:
Firm age:
Number of years spent in a current business ecosystem(s):
Firm role in a business ecosystem:

Theme II: Business ecosystem perception, main actors, and relations

1. How would you describe the BE (business ecosystem) concept?
2. How would you describe your BE? What is the critical value it creates?
3. What kind of actors are typical within your ecosystem, and what are their roles? How are you connected? Do you manage or coordinate those relations differently than with partners before the ecosystem formed?
4. How do these relations affect your firm?
5. How does the BE affect or doesn't affect your firm's strategy and actions?
6. What resources and capabilities is your firm developing to generate competitive advantage and fill strategy objectives? Which of them will be critical in the near future?

Theme III: Understanding of main concepts

What is your first association - what do you think of when I say...

- ecosystem embeddedness
- coopetition
- predictability degree of your environment
- malleability of your environment
- the harshness degree of your environment
- capabilities
- leadership capabilities

Theme IV: Other reflections and comments.