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The governance mechanisms of business ecosystems through network-based business models

Authors

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Abstract

An ecosystem is an intentional community of interdependent actors. If a firm adopts an ecosystem perspective, its focus shifts from maximising the firm's value to creating value for the entire system. Consequently, the ecosystem governance represents a critical factor in successful value creation and capture. The aim of this paper is to understand how the governance of business ecosystems in network-based business models is configured. To this aim a cross-sectional field study was carried out. The cases selected were six Italian small and medium-sized enterprises (SMEs) with the status of benefit corporation. The findings show that the governance configuration of the business ecosystem is hybrid. It requires both centralised mechanisms, such as the definition of shared value, the creation and orchestration of an ecosystem, and the management of risks and tensions, and decentralised mechanisms, such as activities for value creation, external communication, and the definition of the rules of network participation.

Keywords Ecosystem, network-based business model, governance, benefit corporation, stakeholders

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1. Introduction

The topic of ecosystems has, over time, pervaded discussions of strategy, entrepreneurship, business models, coopetition, multi-sided markets, networks, alliances, technology innovation, and supply chains (Kandiah and Gossain, 1998; D'Souza et al., 2015; Kanda et al., 2021; Snihur and Bocken, 2022). In the managerial literature, an ecosystem is defined as an intentional community of interdependent actors (Moore, 1993; Teece, 2012). If a firm adopts the so-called ecosystem perspective, its focus shifts from maximising the firm's value to creating value for the entire system (Hart and Milstein, 2003) Consequently, a long-term vision and an open mindset are needed (Visnjic et al., 2016).

The business model approach fits well with the study of new ways of configuring value creation and capture using ecosystem perspectives (Adner, 2017). The concept of the business model requires a system-level approach (Hou, Cui, and Shi, 2020) in which the mechanisms of value creation and capture concern not only the focal firm but include an extended network of stakeholders (D'Souza et al., 2015). Scholars have emphasised a three-part typology of ecosystems, innovation ecosystem, platform-based ecosystem, and business ecosystem, from which derive as many business models (Jacobines et al., 2018), each of which is outlined in more detail below.

The first of these three stream is the innovation ecosystem. In a world of increasingly specialised organisations, a single firm typically does not possess the resources needed to develop a complex value proposition from start to finish (Appleyard and Chesbrough, 2017). Therefore, firms often need to rely on other actors in their ecosystems to introduce innovation that benefits customers. In particular, Chesbrough (2003) talked about a new business paradigm, namely, open innovation, on the assumption that firms should use external and internal ideas and internal and external paths to market. The business model derived from this new paradigm is the open business model, which involves the innovation ecosystem composed of big corporations, start-ups, universities, research centres, accelerators, incubators, and investors (Chesbrough, 2006).

The second model is the platform-based ecosystem, which is based on firms that operate as platform providers or integrate into an ecosystem governed by platforms (Hein et al., 2020; Cozzolino et al., 2021). The related platform-based business model is based on hubs or intermediaries for a network of third-party providers, developers, and users who interact with each other to create value (Ketonen-Oksi, Jussila, and Kärkkäinen, 2016; Täuscher and Laudien, 2018). In this business model, the platform firm taps into the ecosystem of producers and users to create value and capture and monetise a share of that value (Zhao et al., 2020).

In the third model, the business ecosystem, the focus is on individual firms and the community of stakeholders that impact them (Teece, 2007). Using a term borrowed from biology, Moore (1993, p. 26) defined a business ecosystem as an intentional economic community made up of 'organisms of the business world'. For Teece (2007), the business ecosystem is the environment that the firm must monitor and to which it must react. Hence, stakeholders not only consist of suppliers and customers but extend to the broader business ecosystem composed of organisations that influence the context, such

as competitors, public agencies, regulatory authorities, and investors (D'Souza et al., 2015). The related business model, namely, the network-based business model, relies on leveraging a network of users, customers, or partners to generate value (Zott and Amit, 2009; Lund and Nielsen, 2014).

The increasing complexity of the derived business models means that firms must pay greater attention to the configuration of their governance. Ecosystem governance, a critical factor in successful value creation and capture, includes the set of activities, rules, processes, and mechanisms that characterise the collaboration between the actors involved (Humbeck, Loeffler, and Bauernhansl, 2022). Moore (1996) states that the most common forms of governance of ecosystem relationships are quasi-democratic mechanisms, while Iansiti and Levien (2004) refer to a shared destiny as a governance mechanism because it involves motivating network members with a shared vision and incentive to work towards a common goal, granting them the freedom to work.

Understanding how their governance is configured enables firms to manage resources and decision-making processes more effectively and successfully achieve their strategic aims. However, as in any complex system, there is a risk of tensions (Stubbs, 2019) derived from different motivations, such as competition for funding, talent, different opinions on business models, and divergent views on strategic priorities (Van Bommel, 2018). Depending on how business actors govern tensions, this risk can have positive or negative consequences (Lewis and Smith, 2014). In detail, in open business models, the literature has highlighted a decentralised governance based on a stakeholder-centric perspective (Felin and Zenger, 2014). Instead of a pivotal firm controlling the business model, open business models are organised to involve different stakeholders, such as suppliers, customers, technology partners, institutions, and communities, to create value through the sharing of reciprocal skills, knowledge, and resources (Shaikh and Randhawa, 2022). In platform business models, the governance of the ecosystem is centralised on the platforms that assume the role of pivotal firms (Parker and Van Alstyne, 2005; Foerderer et al., 2018). The platform owner typically provides the tools, services, and infrastructure to enable these interactions while also setting the rules and policies that govern the platform (Zhao et al., 2020; Song et al., 2018). While ecosystem governance in these two types of business models is clear, doubts remain about the governance of network-based business models. Consequently, our paper aims to answer the following research question:

How is the governance of business ecosystems in network-based business models configured?

2. The network-based business model

In recent years, network-based business models have gained significant attention from practitioners and scholars alike due to their potential to promote economic growth. Therefore, in addition to developing their core competence bases individually, firms have had to become more open to network-based processes (Hoffmann, 2007). Networking between different actors is often motivated by the need to access resources and skills,

learn about technologies, markets, and customers, and access value chains (Nielsen and Montemari, 2012).

The focus of most business model research has been on individual firms. However, the definition of the business model takes into account different business actors and their roles (Timmers, 1998) and describes the position that a firm has within a network (Chesbrough and Rosenbloom, 2002). For instance, Shafer, Smith, and Linder (2005) defined a business model as a representation of a firm's underlying core logic and strategic choices for creating and capturing value within a value network. One of key elements of a business model is the inter-organisational network, which refers to a system of interdependent activities that transcends the focal firm and spans its boundaries (Zott and Amit, 2010; Komulainen et al., 2006; Westerlund, Rajala, and Leminen, 2008). Consequently, the network-based business model involves several actors that can be separated and combined (Schilling, 2000). The patterns adopted by a business are defined by their characteristics (Lund and Nielsen, 2014).

In addition to the role of network actors, studies have focused on the evolution of technology as a driver for the adoption of network-based business models. It facilitates coordination among partners and enables the exchange of information, progress tracking, and issue resolution (Lund and Nielsen, 2014). Palo and Tähtinen (2011) emphasised the dynamic nature of network-based business models and the need for flexibility and adaptability in response to changing external conditions. In the network-based business model, the individual company must adapt its business model to the network's common values. The business model of the focal firm in the network will undergo minimal changes while the smaller partners tend to be more open to considering more radical changes (Lindgren, Taren, and Boer, 2010).

However, the success of network-based business models is not only dependent on the technological advancements and adaptability of the actors but also on the strength of their governance structures (Provan, Fish, and Sydow, 2007). The lack of effective governance can lead to fragmented decision-making and limited scope for cooperation, failure, and inefficiencies; in contrast, a good capability to manage the network leads to higher benefits for all stakeholders (Rothaermel and Deeds, 2006). Despite the importance of network-based business models in the business model literature, their governance, from the structural perspective, remains under-investigated.

3. Methodological approach

This research adopted a cross-sectional field study design (Granlund and Malmi, 2002; Roslender and Hart, 2003; Lillis and Mundy, 2005). The cases selected were Italian small and medium-sized enterprises (SMEs) with the status of benefit corporation (società benefit in Italian). This particular type of for-profit firm was selected because it is based on a sustainability-driven hybrid business model that is, by definition, the main example of a network-based business model (Jabłonski et al., 2018). SMEs were selected because they have distinctive characteristics that affect governance mechanisms, such as few qualified boards (Wielemaker and Gedajlovic, 2011), centralisation of ownership and management (Mande, Park, and Son, 2011), and real-time entrepreneurship rather than managerialism (Machold et al., 2011). In addition, the literature suggests that SMEs differ from large firms in certain elements that influence governance, namely, capital structure,

entrepreneurial orientation and value creation, audit activity and disclosure, earnings management, flexibility, and predictability (Handley and Molloy, 2022).

Data were collected between June and December 2022. Firms were first identified by the AIDA (AIDA Bureau Van Dick, 2022), a database of economic and financial data on firms. We adopted the firm's name as the search criterion, and one of the following terms had to be present: 'sb', 's.b.', or 'società benefit'. Inactive (without income) and distressed (liquidation phase) firms were excluded from the sample. We then selected only SMEs (defined as organisations with an annual income less than 50,000,000 Euros and with fewer than 249 employees). Once the selection was completed, we sent emails to request interviews with the founder and/or chief sustainability officer (CSO) from each benefit corporation. Six firms agreed to participate in the research. The industries involved are beverages, manufacturing, and consulting (Table 1).

	Number of interviews	Position(s) Interviewed	B CORP certification	Year of establishment	Areas of activities	Other data sources	Main actors of the firm's network	Main activities of the network
1	1	CEO /CSO	NO	2009	Manufacturing Leather	Official website; Interviews in online media; Notes provided by the firm; Impact report 2021	University; Customers; Suppliers; Certification Agency; Research Centers; Competitors; Patent agencies	Co-creation, R&D; Training; Open innovation; External communication of value; Reporting; Promotion of Events; Dialogue con Patent Agencies; Definition of KPI; Knowledge sharing
2	1	CEO	NO	2005	Beverage Mineral water	Official website; Manifesto; Notes provided by firm; Impact report 2020-2021; Code of Ethics	Traning Institutions, University; Customers; Investors; Research Centers	Training; Certification of ethical supply chain; R&D; External communication of value; Reporting
3	1	CEO/CSO	NO	2001	Consulting Sustainable marketing communication and Events	Official website; Interviews in online media; Impact report 2021	Customers; Suppliers; Research Centers; University;	Certification of ethical supply chain; R&D; External communication of value; Promotion of events
4	2	CEO/CSO	NO	2001	Beverage Wine	Official website; Code of Ethics; Balance sheet; Impact report 2021-2022	Certification Agency; Suppliers; No-profit organizations	Product improvement; R&D; Training; External communication of value; Reporting; Promotion of Events; Assessment tool implementation; Period audit; Monitoring of suppliers

5	1	CEO/CSO	YES	2007	Manufacturing Design Items	Official website; Impact report 2020-2021; Notes provided by firm; Interviews in online media	Customers; Suppliers; Research Centers; University; Competitors; Investors; Patent agency	R&D, External communication of value External communication of value; Dialogue con Patent Agencies; Assessment tool implementation; Period audit; Open Innovation; Monitoring of suppliers
6	1	CEO	YES	1986	Beverage Wine	Official website; Interviews in online media; Notes provided by firm; Impact report 2020-2021; Code of Ethics	Certification Agency; University; Investors; Suppliers; No-profit organizations; Research Centers	R&D; Training External communication of value; Reporting; Promotion of Events; Monitoring of suppliers

Table 1. Sample Overview. Source: our elaboration

A defined protocol was used to ensure that the same topics were addressed in all interviews. The protocol was based on a business modelling perspective in terms of mission, value proposition, customer dimension, key resources, key activities, and partnerships. Interviews were performed remotely via Zoom, lasted between 50 and 60 minutes, and were recorded with the permission of the interviewees and fully transcribed. To ensure the reliability and validity of data collection, we used many data sources: interview transcriptions, documents provided by firms, news in online media, and official company websites (Yin, 2013).

The collected data were analysed using the methodology developed by Gioia, Corley, and Hamilton (2013). Data analysis was performed manually. The coding process was divided into three steps: open coding, axial coding, and theoretical coding. Initially, we used open coding to create first order codes. As the research progressed, we attempted to find similarities among categories and moved from open to axial coding. We clustered the open codes into theoretical categories, leading to second order codes, which we then grouped under aggregate dimensions (Table 2).

1st Order Concepts	*2nd Order Themes*	*Aggregate dimensions*
Case evidence	**Governance Dimension**	**Centralized/ Decentralized**
• The relationship with actors of the business ecosystem is based on the dual mission and set off values of the pivotal firm.	• Definition of Shared Value of Business Ecosystem	Centralized on pivotal firm
• The focal firm selects actors of business ecosystem based on its value proposition. • The pivotal firm bases the collaboration on transparency.	• Creation of the Business Ecosystem	
• The pivotal firm manages all the relationship with single actors of business ecosystem to realize own sustainable value proposition.	• Business Ecosystem orchestration	
• Monitoring of suppliers' sustainable processes, customer satisfaction, and internal human resources wellbeing. • Continuous raising sustainability awareness activities (i.e. training activities). • Certification to guarantee quality of products/services and processes. • Patents. • Multi-years agreements with suppliers.	• Risks and tensions management	
• Resources Management. • Co-production with suppliers and customers. • R&D carried out by sharing experiences, skills, and technologies. • Mutual aid to implement business sustainable practices. • Stakeholders participation to materiality assessment to define KPI to improve value creation practices.	• Mechanism of value creation	Decentralized on business ecosystem
• Collaborate activities to disseminate sustainable values.	• External communication of value	
• Shared agreements about roles and rules with suppliers. • Co-creation with suppliers with defined roles. • Co-creation with customers to customize the products. • A continuous dialogue with trade associations. • Collaborative decision-making process about rules of behavior within the network. • Participation of internal human resources in the decision-making process.	• Conditions of network participation	

Table 2. Hybrid configuration of governance. Source: our elaboration

4. Key insights

In this study, we focused on the mechanism of governance of the business ecosystem within a network-based business model.

Our findings showed that the value proposition of the focal firm is based on the entrepreneur's motivations, set of values, and knowledge. One entrepreneur stated that the adoption of a hybrid mission was "a change that starts from the top. [...] It is a personal vocation to become actors of change. [..] My passion and my previous knowledge about sustainability issues explain all the sustainable investments" (firm no.

3). Therefore, the past experiences of the founders drive the desire to adopt the dual mission typical of network-based business model.

The focal firm selects the actors of the network after it decides on its mission and value proposition. For example, it selects suppliers to create a certified supply chain: “we aim to choose suppliers who share our values. [...] We prefer to work with benefit corporations, although it can be challenging to find suppliers with this status” (firm no. 2). Moreover, it chooses certification agencies to improve its processes and communicate the quality of its products or services: “we collaborate with academic researchers to develop skills and [...] to find skilled managers and obtain training” (firm no. 4). Another activity is the involvement of investors to realise innovative solutions. Furthermore, hybrid firms collaborate with non-profit organisations to disseminate knowhow about sustainable practices and promote events such as conventions and workshops: “the social cooperatives help us to introduce inclusive programmes within organisations” (firm no. 5); “we organise many events with non-profit organisations to strengthen the social part of our mission” (firm no. 1).

Hence, the business ecosystem created will play a decisive role in value-creation activities. Pivotal firms share their visions and missions using company documents. The dual mission, vision, and set of values are written into the company bylaw of pivotal firms or on their sustainability reports, company manifestos, websites, and company profiles.

The focal firm has the role of network orchestrator because it undertakes a set of actions aimed not only at defining the objective of the network but also at managing the relationships between the actors and checking that the actions carried out are aligned with the set purposes. It monitors suppliers by checking their practices and checks on customer satisfaction and human resource well-being through surveys and activities aimed at raising awareness of sustainability: “we ask our customers to fill in forms and provide us with feedback periodically” (firm no. 6). Moreover, all six firms interviewed had obtained multiple certifications for their products, supply chains, environmental impacts, and even organisational models. The interviews demonstrate that the protocols behind the certifications also serve as guidelines to act correctly: “BLab [a non-profit organisation] obliges us to do everything that we declared during the BCORP certification. These are two very stringent voluntary constraints” (firm no. 5). These activities are useful to reduce risk and tensions within the business ecosystem and avoid value destruction (Snihur and Bocken, 2022).

In addition to the centralised activities carried out by the pivotal firms, the results highlight certain governance mechanisms that we can define as collaborative or decentralised, in particular, value-creation activities. Each actor in a business ecosystem has their own resources, skills, and knowhow. The value proposition of the ecosystem is realised thanks to sharing key resources: “we exchange technical knowledge and skills with suppliers and universities” (firm no. 3).

Co-creation is another key element of the network-based business model highlighted by the case studies. It involves collaborative efforts among customers, suppliers, and even competitors and has emerged as pivotal strategy. The results show that this paradigm shift transcends traditional hierarchical relationships, emphasising the collective expertise and diverse perspectives of stakeholders: “our products are created by co-creation with customers. This means working closely together to understand their

specific current and future requirements to implement the most appropriate solution" (firm no. 2).

The value creation mechanism also involves research and development (R&D) activities in terms of collaboration with industry, academia, and suppliers to facilitate the pooling of resources and perspectives: "our collaborations with suppliers foster a rich exchange of ideas, enabling a more comprehensive exploration of opportunities" (firm no. 6). Moreover, other activities that emerged from the interviews include mutual aid to implement sustainable business practices and stakeholder participation in the definition of key performance indicators (KPIs).

The benefit corporations interviewed mentioned the importance of ensuring their business ecosystem values were communicated outside the ecosystem itself. The results show that many activities are devoted to organising conventions, workshops, and study days with non-profit agencies, universities, and public institutions. For firms operating within a network, it is essential to spread the values of the network beyond the direct ecosystem: "the external dissemination of the values of my firm and my stakeholders is both a key driver for cultivating a strong corporate identity in our broader market landscape and creating awareness toward relevant values like environmental and social sustainability" (firm no. 2). Moreover, aligning external communications with the core values of the network enhances "the network's visibility and attracts other potential stakeholders that could enter the ecosystem" (firm no. 5).

The last decentralised mechanism that emerged from the case studies regards the definition of roles and the rules of behaviour for network participants. Examples of these are shared agreements with suppliers, a dialogue with trade associations and certified agencies, and the participation of internal human resources in the decision-making process.

5. Discussion and conclusions

This study aimed to increase knowledge about the governance of the business ecosystem of firms that have adopted a network-based business model. The findings presented make certain theoretical contributions to research in the network-based business model field by shedding light on the configuration of governance mechanisms. Specifically, our results reveal that the governance of this type of business ecosystem is not decentralised, as in an open business model, or centralised, as in a platform-based business model; rather, it is hybrid because it requires both centralised and decentralised mechanisms. Previous research has examined hybrid governance in relation to collaboration between public- and private-sector policies. This collaboration can be strengthened if there are shared goals among actors, even if these actors have different motivations (Buckley Biggs et al., 2021). We have analysed the governance configuration using the concept of a business ecosystem and its connected business model as an analytical lens. This approach transcends the nature of the actors involved. In detail, the focal firm plays a pivotal role in creating, sustaining, and orchestrating the business ecosystem (Fielt, 2014; Hurmelinna-Laukkanen et al, 2012). Analysis of these opportunities reveals how knowledge is exchanged in the creation of new value (Dhanaraj and Parkhe, 2006; Hurmelinna-Laukkanen et al, 2012). Other activities, in contrast, require a collaborative approach to value creation. For example, our findings

complement those of Walker, Di Sisto, and McBain (2008), who emphasised collaborative innovation as a key characteristic of the network-based business model.

From this study, we can highlight certain challenges of a hybrid governance configuration for network-based business models. One of the main challenges is balancing control and flexibility effectively. Centralised activities around the focal firm should ensure coherence and alignment with the overall strategy, while decentralised processes should guarantee the flexibility needed to adapt to stakeholder needs and emergent opportunities (Provan, Fish, and Sydow, 2007). Ensuring alignment across the network can be challenging due to this duality. Managing multiple stakeholders with varying priorities can also hinder decision-making and consensus-building processes, making them complex. Consequently, consistent with Grandori and Soda (1995), network-based business models require a robust governance structure to coordinate the activities of multiple actors and ensure the sustainable development of the entire network.

However, this hybrid governance model also offers several advantages. The blend of centralised control and decentralised autonomy enhances the network's resilience, enabling it to navigate uncertain environments and exploit diverse opportunities effectively (Ryu, 2006). Furthermore, this hybrid model promotes knowledge sharing and collaborative learning by leveraging the expertise and resources distributed across the ecosystem (Dias Sant' Ana et al., 2020). It fosters a culture of innovation among network participants (Lindgren, Taran, and Boer, 2010).

In addition to the theoretical implications, the findings have important practical implications for managers and entrepreneurs who want to implement a network-based business model. Understanding the hybrid configuration of governance is crucial for effectively managing relationships and dynamics within the network. Managers must balance maintaining control over and the coherence of the central strategy with the flexibility to adapt to emerging needs and opportunities within the ecosystem. The development of versatile managerial competencies is necessary to navigate between centralisation and decentralisation and to foster collaboration, mutual trust, and innovation within the network. Furthermore, the hybrid governance configuration highlights the need for flexible coordination mechanisms that allow the alignment of the goals of the focal firm and the various ecosystem actors, facilitating the achievement of sustainable growth.

Our research also has limitations that derive, in particular, from the methodology used. First, with six cases, our sample size could be considered too narrow for the results to be generalisable. However, according to Eisenhardt (1989), four to ten cases are fine. Second, our study only addresses firms operating in Italy. Consequently, we were not able to determine whether country-specific factors affected the governance mechanisms. Third, the most relevant data were collected through interviews with the owners and CSO of the studied firms. Thus, the answers might emphasise positive aspects of the phenomenon considered. These limitations may represent opportunities for future research on this topic. For example, further exploration could involve a deeper investigation into the specific drivers and enabling factors influencing the dynamic interplay between centralised and decentralised governance elements. Additionally, exploring the role of emerging I4.0 technologies in managing such hybrid governance structures could be a promising area for future studies. Furthermore, longitudinal

research focusing on the evolution of these governance mechanisms over time and their impact on network performance and sustainability could provide valuable insights.

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