# ARTISANAL INTELLIGENCE AND THE IMPORTANCE OF CREATING USE: AN EMPIRICAL CASE STUDY OF AN ITALIAN LUXURY FASHION NEW VENTURE

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**Abstract**

Addressing the business challenges outlined by Håkansson and Waluszewski (2007), this study explores the notion that innovation is not an isolated occurrence but a process that transcends through the developing, producing, and using settings (DPU). In the era of sustainable and digital transitions marked by advancements in artificial intelligence (AI), virtual reality (VR), and unstable geopolitical contexts, small firms are developing innovations in a challenging and turbulent business landscape. Small firms characterised by limited technological and organisational resources rely on inter-organisational interactions to establish the innovation process. A critical obstacle often encountered by small firms in developing innovation paths is the lack of effective resource combinations within the network, particularly in the 'using' setting. The survival of SMEs' business innovation in a turbulent business landscape, particularly in a non-predefined 'using' setting, has been scarcely investigated. Therefore, this study explores how small firms combine resources to unfold the innovation path in a turbulent business landscape. This research adopts the industrial network theoretical lenses and investigates an empirical case study of an Italian luxury fashion firm that combines AI and VR technologies with traditional artisanal know-how. The 4R model integrated with DPU settings forms the theoretical framework through which data have been collected and simultaneously analysed following an abductive approach. The findings underscore the critical importance of the 'using' setting in the innovation process. Furthermore, the study sheds light on how resource combining enacts a new 'using' setting, which validates and amplifies the original innovation. Contributing to the Industrial Marketing and Purchasing (IMP) literature, this study highlights the pivotal role of network dynamics and resource combinations in the survival of innovation in a turbulent business landscape.

**Keywords**: SMEs business innovation, turbulent business landscape, artificial intelligence, IMP network approach, resource combining

**JEL Classification**: M26, O31, M31

## 1. INTRODUCTION

Several modern business landscapes are characterised by environmental turbulence, which entails sudden, influential, and unpredictable external changes at a such a scale that firms' functions and survival are threatened (Wadell and Bengtson, 2023; Zafari et al., 2023). Turbulent business networks are characterised by unpredictable close-downs, bankruptcy, acquisitions, rapid technological advancements, regulatory modifications, and socio-economical disruptive changes (Wadell and Bengtson, 2023; Zafari et al., 2023).

Examples of such environments include the tech industry, where the pace of innovation is relentless, and firms must adapt continuously to survive. The rise of artificial intelligence and machine learning has transformed the business landscape in several contexts, necessitating that companies innovate to keep pace with technological developments (Darwish, 2023; Bumann and Peter, 2019; Von Kutzschenbach and Daub, 2020). Another example is the green transition, which faces regulatory uncertainties and fluctuating policies across different regions, making the landscape particularly challenging for smaller firms (Crespy and Munta, 2023).

Despite these challenges, small firms play a pivotal role in driving innovation (Mersico et al., 2023). They are often at the forefront of introducing novel products and services, owing to their agility and capacity for rapid innovation. Small firms contribute significantly to economic growth, job creation, and the development of new markets (Costa et al., 2023; Zoltan and Audretsch, 1987). However, they face a paradox in turbulent landscapes: while their innovative contributions are crucial, their survivability is threatened by the environment that demands innovation. This paradox is underlined by a lack of resources, a common challenge for small firms. Unlike their larger counterparts, small firms often have limited access to capital, skilled personnel, and technological infrastructure, which are essential for sustaining innovation in rapidly changing markets (Heller et al., 2023).

According to the U.S. Small Business Administration, small businesses account for 44% of U.S. economic activity. However, the National Bureau of Economic Research highlights that small firms face higher volatility and a higher failure rate than larger firms. Furthermore, a study by the European Commission on SMEs in the EU underscores that small and medium-sized enterprises are particularly vulnerable to external shocks, including rapid technological changes and economic downturns, primarily because of their resource constraints (Fraboni et al., 2022).

This contradiction presents a significant dilemma: small firms are essential for innovation and economic vitality, yet their capacity to thrive in turbulent landscapes is hampered by their inherent resource limitations. This dichotomy emphasises the need for a deeper understanding of how small firms can effectively recombine their limited resources with network actors to navigate and succeed in a turbulent business landscape, thereby addressing the identified theoretical gap in the literature on innovation processes.

The academic literature provides several frameworks for analysing innovation processes within firms. This study adopts the lens of the IMP network approach, which is broadly considered a highly valuable theoretical lens through which to examine the subject at hand (Håkansson and Snehota, 1995; Gadde and Snehota, 2019; Eriksson et al., 2021; Axelsson et al., 2022; Cantù and Tunisini, 2023) by its unparalleled capacity to capture the essence of innovation as it naturally occurs embedded within the complexity of the network (Sabatini et al., 2021). This approach acknowledges and emphasises the pivotal role of relationships, interactions, and the interplay of resources and activities in driving innovation, offering a rich conceptual toolkit to stretch and explore it (Håkansson and Snehota, 1995, p. 187; Håkansson and Waluszewski, 2002 and 2007).

The IMP network approach provides a suite of analytical tools designed to navigate and elucidate innovation complexity. Among these, the Activities, Resources, and Actors (ARA) model, the 4R model, the Developing, Producing, and Using (DPU) settings, and the Resource Interaction Approach (RIA) are pivotal (Håkansson and Snehota, 1995; Waluszewski, 2004; Håkansson and Waluszewski, 2002 and 2007; Baraldi, 2008; Baraldi et al., 2012; Baraldi and Wagrell, 2022; Baraldi et al., 2024). The DPU model delineates three innovation settings, emphasising the stages through which innovation must pass (Håkansson and Waluszewski, 2007). Complementarily, the ARA model sheds light on the complexity of networks by focusing on the interrelations among network actors, resources, and activities (Håkansson and Snehota, 1995). Furthermore, the 4R model offers insights into how resources are combined (Waluszewski, 2004), whereas the RIA model elaborates on how these resources interact within each DPU setting (Baraldi et al., 2012).

While existing models provide a foundational understanding of the elements and interactions that underpin innovation, they fail to offer a comprehensive tool for illustrating the dynamic recombination of actors and resources through the innovation process. This gap highlights the need for an integrative framework that acknowledges the complexity of networks and provides actionable insights into the strategic recombination of resources and actors in response to the challenges posed by turbulent environments. Therefore, the study's research question is:

*How do small firms unfold the innovation path in a turbulent business landscape through resource combining?*

To explore this topic, the study adopts a case study methodology of a small Italian luxury fashion firm. Data collection and analysis were performed using an abductive approach. The study's findings underscore the pivotal role of the using setting in the innovation process. Furthermore, the study sheds light on how resource combining enacts a new 'using' setting, which validates and amplifies the original innovation. This study contributes to the ongoing debate within the Industrial Marketing and Purchasing (IMP) literature by highlighting the pivotal role of network dynamics and resource combinations in the survival of innovation in a turbulent business landscape.

## 2. LITERATURE REVIEW

### 2.1. The Nature and Scope of Innovation

Innovation remains a central theme in business and industry development discussions due to its critical role in driving competitive advantage, economic growth, and organisational survival. The literature on innovation is vast and multifaceted, reflecting the complexity of the concept itself, which encompasses not only the introduction of new products or technologies but also the adoption of new processes, business models, and methods of engagement within and across industries.

Innovation is broadly understood as the process through which new ideas, products, or methods are implemented to create value (Schumpeter, 1934). It is a dynamic mechanism of economic and social change, emphasising the importance of both incremental and radical innovations in sustaining business and industry evolution (Tidd and Bessant, 2009). The scope of innovation extends beyond mere technological advancements, encapsulating organisational, process, and business model innovations (Chesbrough, 2003).

A significant theme in the innovation literature is the role of knowledge and networks in facilitating innovation. Håkansson and Snehota (1995) underscore the importance of inter-organisational relationships in the development and diffusion of innovation. They argue that knowledge is embedded in products, relationships, and networks that firms navigate. This perspective highlights the collaborative nature of innovation, where firms leverage external resources and capabilities through alliances, partnerships, and networks to enhance their innovation potential (Håkansson and Snehota, 1995, p. 187; Håkansson and Waluszewski, 2002 and 2007; Powell et al., 1996).

### 2.2. Innovation and Small Firms

Small firms are recognised for their agility and flexibility in the innovation process, often serving as the cradle for breakthrough innovations because of their entrepreneurial orientation (Acs and Audretsch, 1988; Costa et al., 2023). However, the literature also

acknowledges the challenges small firms face in turbulent landscapes, including resource constraints and the need for strategic networking to access external knowledge and markets (Fraboni et al., 2022; Freeman, 1982; Gadde and Håkansson, 2023; Rothwell, 1989; Sabatini et al., 2021).

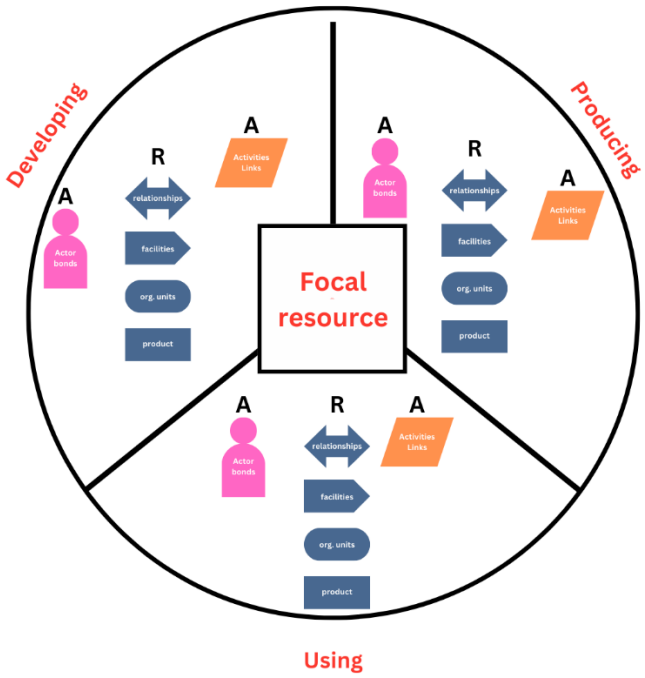
Despite the acknowledged importance of small firms in driving innovation, the literature identifies a paradox in which these entities are both vital and vulnerable to the dynamics of innovation in turbulent environments. This paradox calls for deeper insights into mechanisms that enable small firms to overcome resource limitations and capitalise on their innovative capabilities, such as through the strategic recombination of resources and leveraging network positions for innovation (Håkansson and Snehota, 1995; Chesbrough, 2003).

The literature on innovation in business and industry underscores a complex landscape in which knowledge, networks, and strategic mobilisation of resources play pivotal roles. The challenges and opportunities presented by this landscape demand a nuanced understanding of how firms, particularly small and medium-sized enterprises, navigate the innovation process. Addressing theoretical gaps related to the recombination of resources and actors in dynamic settings remains a crucial area for future research.

## 2.3. Conceptual Framework

The dynamic nature of innovation in business and industry necessitates a nuanced understanding of the interplay between networks, resources, and the innovation process. To explore this intricate landscape, we draw upon several established frameworks in our conceptual framework, integrating them into a novel approach—the Network Interaction Approach (NIA)—to address the gaps identified in the existing literature.

**Figure 1. | . Network Interaction Approach (NIA)**




*Source: Authors' elaboration*

### *Activities, Resources, and Actors (ARA) model*

The ARA model developed by Håkansson and Snehota provides a foundational perspective on the complexity of business networks. It emphasises the interconnectedness of activities, resources, and actors, asserting that the value-creation process is inherently relational and embedded within the network of inter-organisational interactions (Håkansson and Snehota, 1995). This model serves as a lens through which we can examine the multifaceted nature of networks and their roles in facilitating or hindering innovation.

### *The 4R framework*

Introduced by Waluszewski, the 4R framework delves into the mechanisms of resource combination, offering insights into how resources—rights, roles, returns, and regulations—are intertwined in the innovation process (Waluszewski, 2004). Understanding resource combinations is crucial for identifying potential leverage points within a network that can be mobilised to support the innovation process.

### *Developing, Producing, and Using (DPU) settings*

The DPU model frames the innovation process as a sequence of settings: developing, producing, and using. This model allows for a structured analysis of how innovation evolves from ideation to implementation and market introduction, highlighting the transitions and transformations that occur along the way (Waluszewski, 2004; Håkansson and Waluszewski, 2002 and 2007).

### *Resource Interaction Approach (RIA)*

Baraldi's RIA model expands the understanding of how resources are combined within DPU settings, focusing on

the interactions that take place during the innovation process (Baraldi, 2008; Baraldi et al., 2012; Baraldi and Wagrell, 2022; Baraldi et al., 2024). This model provides a granular view of resource dynamics, offering a platform for exploring the specific ways in which resources interact and influence each other within the context of innovation.

### *Network Interaction Approach (NIA)*

Building on these foundational models, we introduce the Network Interaction Approach (NIA) as an integrative framework that incorporates actors and activities into the RIA model. The NIA aims to provide a comprehensive understanding of how actors recombine resources within DPU settings, especially in turbulent business landscapes. By incorporating actors and activities, the NIA sheds light on the strategic manoeuvres that firms undertake to navigate the complexities of innovation, emphasising the active role of firms in shaping the innovation trajectory through network interactions.

The conceptual framework outlined above integrates established models with our novel NIA approach to form a cohesive analytical lens for examining innovation in business and industry (see Figure 1). By highlighting the importance of network dynamics, resource combinations, and the active role of actors and activities in the innovation process, this framework aims to elucidate the mechanisms through which small firms can effectively navigate and thrive on the innovation path in turbulent environments.

## 3. RESEARCH METHOD

The study is based on a qualitative approach, which is deemed appropriate when the research problem is complex and entails different causal relationships which cannot be easily grasped in a quantitative study (Yin, 2018). Qualitative methodology allows researchers to explore a phenomenon in depth and breadth (Voss, 2010), exploiting the distinctive qualities of the qualitative approach, such as flexibility, local meaning, holism, richness, and causality assessment (Miles and Huberman, 1994).

Through the landscape of the qualitative approach's investigation techniques, this study adopts the explorative case study methodology, which is well suited to exploring new research areas or the ones for which existing theoretical contributions seem inadequate (Eisenhardt, 1989). Indeed, the research aim of the study is to explore how small firms unfold their innovation path in a turbulent business landscape, which is a recent business context that “is calling” researchers to provide novel academic contributions to challenge previous knowledge and frameworks.

Adopting the case study methodology, researchers can explore a contemporary phenomenon (the case) in its real-world context, which is particularly useful when the boundaries between the phenomenon and context are not clearly evident, such as in the case of an innovation path. Furthermore, the contemporaneity of the case encourages researchers to collect data from multiple sources of evidence, allowing them to perform triangulation activities, which makes the case study's findings more robust (Patton, 2014; Yin, 2018). Since the innovation path goes through several episodes and is changeable over time, the study adopts a processual perspective (Langley et al., 2013; Pettigrew, 1997).

The case was selected through theoretical sampling (Eisenhardt and Graebner, 2007), giving preference to extreme cases which provide unique insights (Siggelkow, 2007) in a turbulent business landscape. Geographical proximity and personal relations with key informants were additional case selection criteria, as these peculiarities allow easy and in-depth access to data, favouring the verification of the correctness of the information collected in real-time (Yin, 2018).

According to the above-mentioned criteria, the case of a small Italian luxury fashion firm was selected (hereafter Firm A). This firm has entered the luxury fashion sector, providing a value proposition strongly rooted in innovative solutions. From the beginning, the firm competed with strong luxury brands, aiming to achieve an international market. Disruptive events such as the pandemic crisis (Covid-19) and the Russian-Ukrainian war have led to the closure of important channels for Firm A, delimiting its growth, mining its survival and upsetting its using-setting. The perception of uncertainty and a struggle for economic recovery led Firm A to reorganise its resources to find another stable using-setting where it could exploit and test its innovative solution (for further details, see the findings section).

Data collection entailed both primary and secondary data. Primary data were collected through direct observations and notes during informal meetings and Firm A’s involvement in lessons and academic research activities. On these occasions, Firm A had the opportunity to describe its history, the steps adopted for growth, the criticalities, and their strategy to cope with the recent turbulent business landscape.

Furthermore, semi-structured interviews were conducted with the three founding partners of Firm A (Kvale, 2012), which are delegated to specific functions of the firm: one manages the commercial side, one the technical and digital functions of the value proposition, and the last one presides the productive side. This methodological choice allows the study to obtain data from highly knowledgeable informants who view the phenomenon of interest from different perspectives, which is considered a good method for mitigating data collection bias (Eisenhardt and Graebner, 2007). The good relationships with Firm A’s management have allowed the research group to call them multiple times during the research period to clarify events or pursue emerging clues derived from the contextual data analysis process. Secondary data were collected through several internal annual reports shared by Firm A about its marketing strategy and business models. To contextualise the data collection

process, it was conducted from October 2019 to January 2024.

As enhanced by Yin (2018), the case study methodology benefits from the prior development of theoretical propositions to guide data collection and analysis. During the investigation, researchers are immersed in the phenomenon; therefore, they risk coming across data overload problems and collecting data which are not useful for the research aim (Chun Tie et al., 2019). To overcome this issue and recognising that no sense-making strategy is superior to others, the study adopts the abductive methodology illustrated by the 'systematic combining approach' (Dubois and Gadde, 2002).

The systematic combining approach is described as a 'nonlinear, path-dependent process of combining efforts with the ultimate objective of matching theory and reality' (Dubois and Gadde, pp. 556).

The systematic combining, being an abductive research approach, aims to conduct parallel and equal engagement with empirical data and extant knowledge (Earl Rinehart, 2021; Timmermans and Tavory, 2012). Through the systematic combining approach, researchers do not enter the field with an open mind, since they adopt a theoretical framework that sets parameters for what they are looking for, avoiding indiscriminate data collection (Alvesson and Kärreman, 2007). The theoretical framework should be designed not too tight to let the concepts emerge from the data (Miles and Huberman, 1994). According to the thoughts of Strauss and Corbin (1990), the study adopts a theoretical framework formed by the 'technical literature', which means a theoretical background that helps researchers to potentially delineate important variables and suggest casual relationships.

Specifically, the study adopts a theoretical framework which combines the developing-producing-using setting with the theoretical concepts of resource combining (fig. 1 – NIA model).

The theoretical framework designed worked as an initial general set of guidelines, but it has evolved during the study due to the empirical observations which have challenged the existing theoretical knowledge (Dubois and Gadde, 2002). Indeed, abductive research creates and develops a new theory when extant theoretical frameworks are unable to explain the empirical findings (Alvesson and Kärreman, 2007; Timmermans and Tavory, 2012). In the systematic combining approach, when the empirical data differs from what is expected from the theoretical framework developed, a breakdown occurs that inspires changes in the theoretical framework (Thompson, 2022). Specifically, systematic combing scholars search for additional theories that can account for and/or explain the breakdown that emerged. Therefore, the need for theory is created in the process, and there is no need to review all literature before entering the field (Dubois and Gadde, 2002; Strauss and Corbin, 1990). If additional theories can address the empirical findings, they are added to the theoretical framework; if not, abductive researchers create a new theory that generates a more appropriate understanding of the empirical findings (Thompson, 2022; Timmermans and Tavory, 2012). At the same time, new theories suggest new data collection to confirm emerging clues. This iterative process of going back and forth between framework, data sources, and data analysis continues until the theoretical framework can explain the empirical findings (Dubois and Gadde, 2002). This is the approach followed in this study.

Coherently to the systematic combining approach, the data analysis process was conducted through the 'abductive thematic analysis' (Thompson, 2022). The data were fully transcribed, and two rounds of coding were executed to mitigate the risk of losing elements of significance. During the coding process, the researchers have taken notes on the characteristics of the codes to identify potential relationships between them. The research team then attempted to identify themes formed by the relationships of different codes capable of explaining the phenomenon. At this point, the research team was involved in the theorisation process, which, in line with the abductive approach, begins by looking back to the theoretical framework to verify to what extent it could explain the relationship between the themes that emerged (Dubois and Gadde, 2002; Thompson, 2022; Timmermans and Tavory, 2012). When extant knowledge did not fully account for the themes that emerged or for the relationships between them, the study produced small theoretical developments (Makadok et al., 2018), leading to a change in the evolving framework adopted to conduct the research. This process was repeated until the evolving framework fully accounted for empirical data (Dubois and Gadde, 2002). A comparison of themes derived from different datasets and data display strategies was performed to provide robustness and clarity for the findings (Thompson, 2022).

## 4. FINDINGS

In navigating the complexities of business innovation, Firm A's journey, which later evolved into Firm B, encapsulates a compelling narrative of strategic adaptation and visionary foresight. This journey unfolds into three distinct phases, each marked by critical decisions and pivotal actions by the managerial founder, commercial founder, and technical founder. The transformation from Firm A to Firm B illustrates the dynamic interplay of resources, market challenges, and strategic pivots, underscoring the essence of entrepreneurial resilience and innovation.

### *Act I: the Inception of Firm A*

The origins of Firm A in 2014 marked the commencement of an ambitious venture aimed at revolutionising the footwear market. The innovation at the heart of Firm A was the introduction of a digital platform that allowed customers unparalleled customisation options for their footwear, merging this offering with entirely online services. This phase was characterised by the collaborative efforts of the managerial, commercial, and

technical founders. Their combined expertise, spanning business management, commercial strategy in the footwear industry, and digital marketing, fuelled the initial momentum, leading to the development of the digital configurator and the successful launch of the platform (table 1).

This period tested the potential of leveraging digital technology to create a novel customer experience in the footwear industry. Despite the nascent stage of their venture, the founders' strategic outreach and promotional activities garnered significant interest, laying a foundational customer base and attracting initial funding and recognition, notably through their successful participation in a renowned startup competition.

**Table 1 | NIA analysis of act I**

| NIA | Developing | Producing | Using |
|---|---|---|---|
| **Activities** | Ideation and conceptualisation of a digital platform for customised footwear. Development of the digital configurator. | Finalising the digital platform's functionality and usability. Setting up the infrastructure for online services. | Launching the platform for customer use. Monitoring and refining based on customer feedback and interactions. |
| **Resources** | Technological expertise, digital tools, and initial capital for development. | Digital infrastructure, software development tools, marketing materials. | Digital platform, customer service tools, and data analytics for customer feedback. |
| **Actors** | Managerial founder, commercial founder, technical founder, and early adopter. | Software developers, digital marketing team, initial investors. | End-users (customers), marketing team, customer support staff. |

*Source: author's elaboration*

Act I outlines Firm A's inception phase, focusing on collaborative efforts to develop and launch a digital platform for customised footwear. This phase emphasises the ideation, production, and initial use of the platform, underpinned by the synergy among the founders and the strategic use of technological and capital resources.

### *Act II: strategic reorientation and multichannel approach*

Despite its innovative edge and early achievements, Firm A faced considerable challenges in scaling up its online sales and penetrating the market more deeply. The realisation that a pure B2C model might not be sufficient to capture the market's favour prompted strategic revaluation. In response, the founders embarked on a multichannel approach, transitioning towards a B2B2C model. This strategic pivot aimed to expand their reach through partnerships with retailers, thus enhancing the visibility and accessibility of their customised footwear.

> *'The journey of introducing a novel concept into a traditional market was fraught with scepticism. We quickly learned that innovation is as much about technology as it is about understanding and integrating it into the market's fabric. Our shift towards a B2B2C model and the subsequent launch of Firm B were grounded in this understanding. It was about creating a synergy between our innovative platform and the existing market ecosystem, thereby facilitating a smoother adoption curve.' - Commercial Founder*

The introduction of a comprehensive kit for retailers represented a significant innovation in this phase, facilitating the engagement of physical stores with Firm A's digital customisation platform. This approach not only diversified Firm A's revenue streams but also positioned its offerings within premium retail environments, enhancing brand recognition and customer experience (table 2). However, the challenges of market acceptance and supply chain scepticism persisted, highlighting the ongoing struggle to fully realise the innovative potential of Firm A's business model.

**Table 2 | NIA analysis of act II**

| NIA | Developing | Producing | Using |
|---|---|---|---|
| **Activities** | Strategic assessment of market challenges and opportunities. Development of a multichannel strategy. | Creation of a comprehensive kit for retailers. Formation of partnerships with physical and online retailers. | Implementation of the B2B2C model. Engagement with retailers and customers through the new channels. |
| **Resources** | Market insights, strategic planning expertise, partnership agreements. | Retailer kits, promotional materials, training for retailer staff. | Enhanced digital platform, retailer networks, customer feedback mechanisms. |
| **Actors** | Managerial founder, commercial founder, technical founder, potential retail partners. | Retail partners, marketing and sales teams, technical support for retailer integration. | Retail partners, end-users (both direct customers and those reached through retailers), marketing team. |

*Source: author's elaboration*

Act II delves into Firm A's strategic shift towards a B2B2C model, highlighting the development, production, and usage stages of this new strategy. The focus is on the expansion of reach through retailer partnerships and the

creation of retailer kits, illustrating the firm's response to market penetration challenges.

### *Act III: the emergence of Firm B and a new strategic vision*

The advent of the COVID-19 pandemic and the ensuing market disruptions served as catalysts for a profound transformation within Firm A. The consequential shift towards remote work and the decline in demand for formal footwear necessitated a radical reassessment of the firm's strategic direction. Within this context, Firm B was conceived—a strategic evolution of Firm A's original vision, now aimed at leveraging its digital platform's core technology to serve a broader range of fashion brands through a Software as a Service (SaaS) model.

> *'We recognised early on that the path from invention to market-shaping innovation was not linear. It demanded a bold revaluation of our assets and a willingness to transform. Firm B's creation was not just about survival; it was also about envisioning a new way to deliver value in an industry at the cusp of digital transformation. This pivot was our response to a rapidly evolving marketplace, signalling our move from a product-centric to a platform-centric approach.' – Managerial Founder*

This phase underscores the recombination of resources and capabilities to address emerging market needs, particularly the demand for digital solutions in inventory management, product presentation, and e-commerce. Firm B quickly established itself as a key player in the digital transformation of the fashion industry, forging new partnerships and expanding its client base internationally. Firm B's success not only validated the original technological innovation conceived by Firm A but also demonstrated the founders' ability to navigate through turbulence and reorient their strategic focus towards new opportunities for growth and impact (table 3).

Throughout these phases, Firm A's journey to Firm B encapsulates the quintessential challenges and triumphs of innovation in the digital era. It highlights the importance of strategic flexibility, the potential of digital technologies to transform traditional industries, and the pivotal role of visionary leadership in steering ventures through periods of uncertainty and change.

**Table 3 | NIA analysis of act III**

| *NIA* | Developing | Producing | Using |
|---|---|---|---|
| **Activities** | Reassessment of strategic direction in light of COVID-19. Conceptualisation of Firm B as a SaaS provider. | Development of digital solutions for inventory management, product presentation, and e-commerce for the fashion industry. | Launch and adoption of Firm B's services by fashion brands. Expansion of client base and exploration of new market opportunities. |
| **Resources** | Strategic insights, technological assets, feedback from initial market reactions. | Technological development tools, digital marketing strategies, SaaS infrastructure. | SaaS platform, partnerships with fashion brands, ongoing market and user data analysis. |
| **Actors** | Managerial founder, commercial founder, technical founder, industry advisors. | Software development team, digital marketing experts, first batch of B2B customers. | Fashion brands as clients, end-users of client brands, Firm A as the initial end-user and tester. |

*Source: author's elaboration*

Act III captures Firm B's transformative creation from Firm A, focusing on the development, production, and use of new digital services for the broader fashion industry. This phase underscores the strategic pivot to a SaaS model, leveraging the digital innovation initially created by Firm A and expanding its application to meet emerging industry needs.

### *a. Resource Combining in Small Firms: a Pathway to Innovation*

In the context of the Network Interaction Approach (NIA), small firms' journey towards innovation is intricately tied to the strategic combination of resources facilitated by their interactions within a network (Waluszewski, 2004). This perspective shifts the focus from mere resource possession to the dynamic interaction of actors and interfaces between various resources, highlighting the significance of relational and collaborative engagement in the innovation process.

The case of our focal firm exemplifies how, despite their resource constraints, small firms can leverage network interactions to foster innovation. Initially, the firm possessed a unique technological resource – an innovative digital platform that allowed for the customisation of products. However, the realisation of its potential was contingent upon the firm's ability to integrate complementary resources within its network (Baraldi et al., 2012).

The firm embarked on a series of strategic interactions with various network actors, including suppliers of raw materials, technological partners, and marketing agencies. These interactions were not merely transactional but involved the co-creation of value through the sharing of knowledge, expertise, and market insights. For instance, collaboration with technology partners not only enhanced the firm's digital platform through advanced features but also facilitated access to new technological resources, such as AI algorithms for customer preference analysis (Heller et al., 2023; Gadde and Håkansson, 2023; Rothwell, 1989; Freeman, 1982).

Moreover, the interactions extended beyond formal partnerships to include informal networks comprising industry forums, trade associations, and innovation clusters. These forums provided the firm with access to tacit knowledge about emerging market trends, consumer behaviours, and regulatory changes, which are critical for aligning innovation with market needs.

The strategic combination of resources was further enriched by the firm's engagement with its customer base. Through interactive platforms and social media, the firm cultivated a community around its offerings, soliciting feedback and ideas that informed the iterative development of its product. This customer engagement transcended the traditional vendor-consumer dynamic, embedding customers as active participants in the innovation process (Costa et al., 2023).

These network interactions, facilitated by the firm's strategic orientation towards collaborative resource combinations, underscore the essence of the NIA model. It highlights how small firms can navigate resource constraints and foster innovation by embedding themselves within a network of diverse actors, thereby leveraging the collective capabilities, knowledge, and resources available within these networks (Gadde and Håkansson, 2023).

The case illustrates that the pathway to innovation for small firms lies not in the aggregation of resources in isolation but in the strategic interaction and integration of these resources across the interfaces of various network actors (Håkansson and Waluszewski, 2002 and 2007). This approach not only amplifies the firm's innovative capacity but also enhances its resilience and adaptability in the face of the turbulent business landscapes it navigates (Zafari et al., 2023).

### *b. Unfolding the innovation path in a turbulent business landscape*

In a dynamic and often unpredictable business landscape, the journey of innovation is fraught with challenges that test the resilience, adaptability, and strategic acumen of firms. Firm A's evolution into Firm B exemplifies masterful navigation through turbulence, underscored by strategic interactions with a diverse array of actors and a dynamic recombination of resources (Mersico et al., 2023; Zafari et al., 2023). This section delves into the intricacies of these interactions and their pivotal role in shaping a firm's innovative trajectory.

#### *The Early Challenges and Strategic Shifts*

Firm A, launched with the ambition of revolutionising the footwear industry through digital customisation, quickly encountered the volatile nature of the market. Initial enthusiasm was dampened by the realisation that the market's acceptance was not as forthcoming as anticipated. Although innovative, the digital platform faced scepticism from traditional supply chain actors who were wary of the practicalities and profitability of the "pair-by-pair" production model. This scepticism posed a significant barrier, highlighting the initial misalignment between Firm A's innovative offering and the existing market ecosystem.

#### *Engaging with a Sceptical Supply Chain*

Firm A's turning point came through its deliberate engagement with these sceptical supply chain actors. Recognising the need to bridge the gap between innovation and market readiness, the managerial, commercial, and technical founders leveraged their diverse backgrounds to initiate dialogues aimed at understanding the concerns and expectations of supply chain partners. This engagement process was not merely transactional but deeply collaborative, aiming to co-create value and align the interests and capabilities of all parties involved (Costa et al., 2023).

#### *The transition to a multichannel Model*

Faced with the challenge of expanding its market reach and overcoming scepticism, Firm A initiated a strategic pivot towards a multichannel model, transitioning from a B2C to a B2B2C framework. This shift was instrumental in broadening the firm's approach to market penetration and facilitating the introduction of a comprehensive kit for retailers. This kit served as a tangible interface between Firm A's digital innovation and the physical retail environment, enabling retailers to seamlessly integrate customised footwear offerings into their stores (Von Kutzschenbach and Daub, 2020).

This strategic reorientation was marked by a series of negotiations and partnerships with retailers, from boutique stores to major department chains. Each partnership was an exercise in resource combination, where Firm A's digital capabilities were complemented by retailers' physical market presence and customer reach. The success of these partnerships hinged on continuous feedback loops and iterative improvements to the digital configurator, ensuring that the platform remained responsive to both retailers' operational needs and end-users' customisation desires (La Rocca and Snehota, 2017).

#### *Embracing digital transformation amidst pandemic challenges*

The onset of the COVID-19 pandemic introduced unprecedented challenges but also catalysed a deeper reflection on the firm's strategic direction. The drastic shift in consumer behaviour towards online shopping and the heightened demand for digital solutions in retail presented both a challenge and an opportunity. Firm A, drawing upon its foundational digital expertise and the network of relationships built with retailers and supply chain partners, evolved into Firm B—a visionary pivot that repositioned the firm from a provider of customised footwear to a digital solution architect for the broader fashion industry.

This evolution was characterised by a strategic recombination of resources, where the firm's core digital platform was adapted to meet the emerging needs of the fashion industry for digital cataloguing, inventory management, and e-commerce integration (La Rocca and

Snehota, 2017). Firm B's emergence as a digital innovator was facilitated by its ability to harness the collective capabilities, insights, and resources of its network, embodying the principles of the Network Interaction Approach (NIA) by dynamically aligning its innovation trajectory with the evolving interfaces of actors and resources amidst the turbulent landscape (Gadde and Håkansson, 2023).

In navigating the path from Firm A to Firm B, the case underscores the critical importance of strategic flexibility, the power of collaborative network engagement, and the visionary reconfiguration of resources in steering innovation through turbulent times. The journey of Firm A to Firm B not only highlights the challenges of innovation in a volatile market but also showcases the transformative potential of strategic actor engagement and resource recombination in realising enduring innovation (Baraldi et al., 2012; Baraldi and Wagrell, 2022; Baraldi et al., 2024).

### *c. Recombining and embedding actors and resources to achieve innovation*

The transition from invention to innovation within Firm A's journey illustrates a nuanced understanding of how embedding and recombining actors and resources can catalyse significant breakthroughs (Gadde and Håkansson, 2023). This process, pivotal for moving beyond mere invention to achieve tangible innovation, was exemplified in the creation of Firm B, marking a strategic evolution where Firm A not only birthed a new venture but also positioned itself as an embedded end-user within this innovation ecosystem. This section delves into the dynamics of this transformation, highlighting the interplay of technological innovation and strategic resource recombination (Baraldi et al., 2012; Baraldi and Wagrell, 2022; Baraldi et al., 2024).

#### *The limitations of invention without user embedding*

Firm A's initial phase was marked by an inventive spirit, driven by the development of a digital customisation platform for footwear. However, the venture soon confronted the reality that invention alone does not suffice for innovation. The platform, despite its groundbreaking potential, risked remaining an unfulfilled promise without effective market penetration and user adoption. The challenge lay in transitioning from a novel concept to a market-embedded solution, a journey that necessitated a deeper integration of user perspectives and needs.

#### *The strategic formation of Firm B*

Recognising the necessity to bridge the gap between technological capability and market needs, Firm A embarked on a strategic pivot that led to the formation of Firm B. This new venture was conceptualised not just as an extension of Firm A but as a distinct entity, with Firm A as its first and foundational customer. This structure allowed for a unique dynamic where Firm A could leverage its own technological innovation while also embedding itself within the user context, thereby experiencing firsthand the challenges and opportunities of market integration (Bumann and Peter, 2019).

"In navigating the transition from Firm A to Firm B, we embraced the complexities of our business landscape as opportunities for growth and innovation. Our journey underscores the importance of agility, strategic network engagement, and the proactive involvement of end-users. As we move forward, Firm B stands as a testament to our collective vision and commitment to transforming the fashion industry through digital innovation. This journey, though challenging, has been a profound learning experience, illustrating that the essence of innovation lies in the ability to adapt, collaborate, and envision new possibilities." – Managerial founder

#### *Technological Innovation as a Focal Resource*

In the ecosystem of Firm B, technological innovation transcended its role as a mere asset to become the focal point of resource recombination. The digital platform, initially conceived as a tool for customisation in the footwear industry, evolved into a versatile foundation for addressing broader market needs. This evolution was marked by a series of strategic interactions with various actors within the network, including other businesses, technology partners, and, ultimately, the end-users themselves.

These interactions were instrumental in redefining the value proposition of the digital platform, expanding its application beyond footwear customisation to encompass a wider array of fashion industry needs. The platform's capabilities were enhanced to support digital cataloguing, inventory management, and e-commerce integration, reflecting a responsive adaptation to emerging market trends and challenges.

> *'Technology was always at the heart of our venture, but its true potential was unlocked through direct engagement with our users and partners. The feedback loops we established were invaluable, not just for refining our platform but for reimagining its application. The evolution into Firm B underscored the importance of flexible, responsive innovation practices that are attuned to the real-world challenges and opportunities our clients face.' – Tech Founder*

#### *Embedding Firm A within the innovation business landscape*

The strategic recombination of resources and the embedding of Firm A within Firm B's innovation ecosystem facilitated a profound alignment between technological capabilities and market demands (Mersico et al., 2024). Firm A, by acting as the initial end-user, provided critical insights that shaped the platform's evolution, ensuring that the technological innovation remained closely aligned with actual market needs and user experiences.

This embedding process underscored the significance of end-user integration in the innovation journey (Waluszewski, 2004; Håkansson and Waluszewski, 2002a

and 2007), where firsthand experiences and feedback become invaluable in refining and validating the innovation (Costa et al.,2023). Through this dynamic interplay, technological innovation was not just developed but was also embedded within the practical contexts of its application, enabling the transition from invention to actual innovation.

## 5. CONCLUSIONS

The study answers the research question, 'How do small firms unfold the innovation path in a turbulent business landscape through resource combining?', describing how small firms, through resource combining, can scoop and remain anchored to the using setting, where innovation has a way to be tested, developed, and disseminated.

The evolution of Firm A into Firm B, characterised by a strategic approach towards innovation and networked interactions, provides profound insights into the dynamics of innovation within complex and turbulent market environments. Drawing upon this case study, the implications for theoretical understanding, managerial practice, and future research avenues are explored, with a focus on the significance of embedding and recombining within an innovation ecosystem.

The transformation from Firm A to Firm B underscores the criticality of network interactions and the strategic embedding of actors within the innovation process, aligning with the perspectives emphasised by Snehota (1990). This case study contributes to the innovation literature by illustrating the application of the Network Interaction Approach (NIA) in real-world settings, highlighting how technological innovation, when positioned as a central resource, can facilitate the reconfiguration of business strategies, resources, and models in response to market demands (La Rocca and Snehota, 2017). Such insights enrich our understanding of innovation processes, particularly emphasising the role of strategic flexibility and networked collaborations in fostering sustainable innovation within turbulent markets (Håkansson and Snehota, 1995). Furthermore, the study points out that the innovation process needs to be firmly anchored in the using setting to be dumped on the ground and spread. In a turbulent environment, if the innovation is not yet arrived at the using setting, the small firms risk that it will not take root in the user setting because business and geopolitical scenarios might change unpredictably counteracting the diffusion of the innovation. Therefore, in developing innovation, small firms have to work having the confidence that they can rely on a responsive setting, and they can achieve this only if they have strong relationships with the using setting. In a metaphor, it is as if the small firms have to develop an innovation that they have already 'sold' to the users. Through this way of acting, small firms can almost handle the unpredictability of the turbulent business landscape. Furthermore, the study proves that resource combining allows small firm's innovation to be repositioned to find a favourable using setting, where the innovation can gain traction and be disseminated.

For practitioners, the journey of Firm A towards becoming Firm B offers valuable lessons in leveraging agility, strategic network engagement, and proactive end-user involvement. This narrative advocates for a managerial approach that views the firm as an integral component of a broader ecosystem, where collaborative partnerships can significantly enhance innovative capabilities and market penetration (Ford, Gadde and Snehota, 2003). Managers are encouraged to adopt a flexible and iterative approach to business modelling, prioritising continuous market feedback and revaluation of the firm's value proposition to maintain relevance and competitiveness in rapidly changing environments.

This case study, while offering in-depth insights, is bounded by its contextual specificity to the fashion and footwear industry, potentially limiting the direct applicability of findings to other sectors. Furthermore, the dynamic nature of technology and market landscapes necessitates ongoing reassessment of these insights (Snehota, 1990). Future research could extend this groundwork by investigating the phenomena of innovation and user embedding across various industries, enhancing the generalizability and depth of understanding regarding innovation processes in diverse contexts. A broader exploration into the roles of different network actors and longitudinal studies capturing the evolution of firms' innovation journeys could further elucidate the complex interplay of recombination and embedding over time (Håkansson and Waluszewski, 2007). The case of Firm A's transformation into Firm B not only reveals the pathways through which small firms can navigate the complexities of innovation but also opens new avenues for academic inquiry into the nuanced interplay between strategy, collaboration, and market engagement. It invites further exploration into the mechanisms of innovation, where the convergence of strategic vision, networked interactions, and market understanding can drive substantial value creation.

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