Horizontal network collaboration by entrepreneurial ventures: a supply chain finance perspective

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Abstract

Purpose – The present paper aims at understanding how horizontal network collaborations between small and medium enterprises (SMEs) can be designed and implemented to take advantage of a supply chain finance (SCF) perspective.

Design/methodology/approach – This study presents an SCF literature background identifying four literature gaps, and in response to them it adopts an action research approach. The empirical analysis is developed on a network-case study: a horizontal collaboration project between small businesses of the Italian wine industry and their supply chains.

Findings – SMEs can play an active role in developing – in terms of design and implementation – their collaborative networks by taking advantage of an SCF perspective for themselves, and their customers, based on the reorganization of relationships interface processes. Taking this perspective can be a concrete and crucial way to sustain the development of SMEs and their supply chains in an actual competitive context.

Research limitations/implications – The paper identifies the theoretical gaps in the literature, suggests new research areas that deserve to be more deeply investigated and connects case-related results to the key concepts. The empirical part presents a real case application that proposes a complete roadmap for managers and practitioners who wish to experience similar projects.

Practical implications – This network-case study storyline, presenting an overview of ten years of meetings, with related purposes, is suggesting a roadmap for design and implementation of horizontal network as managerial implications. These kinds of active research projects, with a collaborative mixed team of academics and practitioners, and involving a multilayer group of participants, are positive examples for closing the bridge between companies and academia, which enhance this network of small businesses active in trying to improve their competitiveness working together.

Originality/value – The value of the paper is to embrace a supply chain-oriented perspective for an SME, independent of the financial system and based on inventory flow management. Very little literature focuses on

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inventory-based research within the SCF framework, designed for real implementation in horizontal network collaboration by entrepreneurial ventures.

Keywords Small and medium enterprises, SME, Supply chain finance, SCF, Horizontal network collaboration, Entrepreneurial ventures, Action research

Paper type Research paper

1. Introduction

Small and medium enterprises (SMEs) play a fundamental role in the economic context: "SMEs are the backbone of Europe's economy, they represent 99% of all businesses in the EU, [. . .] play a key role in adding value in every sector of the economy, [. . .] they are essential to competitiveness and prosperity, [. . .] and resilience to external shocks" (European Commission, 2022). Moreover, since the global financial crisis of 2008, when companies found themselves looking for solutions to meet their liquidity and working capital needs in an environment with restricted access to capital, SMEs have been particularly affected (Bals, 2019; Caniato *et al.*, 2016, 2019; Gelsomino *et al.*, 2016). The COVID-19 pandemic has exacerbated this trend and emphasized how supply chain solutions are the ones that most of all can make a difference in the competition (Wittwer and Anderson, 2021). As stated in "Financial Times" (2020, 22 April), the pandemic crisis has underlined the need for suppliers and customers to work together for the vital safety of single companies and entire supply chains. It is up to the larger and/or more stable survivors, in particular, to help support the smaller/weaker components of their supply chains rather than running the risk of a system collapse. In this direction, the solutions related to so-called "supply chain finance" (SCF) represent a decisive tool of resilience for the business system in a time of liquidity crisis and fragility of supply chains (IlSole24Ore, 2022; Tate *et al.*, 2018). One of the main definitions refers to SCF as "a mix of models, solutions, and services aiming to both optimize the financial performance and control working capital within a supply chain, exploiting a deep knowledge of supply chain relations and dynamics" (Gelsomino *et al.*, 2016, p. 283). SCF services were initially introduced by large banks and characterized by a three-dimensional view of supplier-customer-bank, but new and innovative financing models have also evolved, and bank-independent solutions have been created (Caniato *et al.*, 2019). Following this direction, more attention has been given especially to SMEs and the solutions that link their suppliers and clients to sustain one another along the supply chain. The importance of SCF cannot be ignored for the development of SMEs searching for options to obtain loans to overcome their daily financing needs (Lekkakos and Serrano, 2016). As such, some SMEs are willing to adopt a specific solution for collaborative development: the collaborative network contract, which is based on a legal agreement that allows the creation of groupings of companies, not direct competitors, for mutual collaboration. Especially for SMEs that do not want to miss the opportunity for supply chain finance benefits, despite the complexity of the models, this solution consists of formally built network collaboration by entrepreneurial ventures to start implementing their innovative project. In particular, horizontal collaborations, including coopetition, can reduce the overall cost of supply chains (Massari and Giannoccaro, 2021), and businesses can improve their real-time decision-making process by adopting a suitable inventory policy (Prakash and Deshmukh, 2010). However, collaborative networking is still a challenge for SMEs that aim to develop their supply chains toward complex adaptive systems (Hearnshaw and Wilson, 2013). The present paper investigates within this context and aims at understanding how horizontal network collaborations between SMEs can be designed and implemented to take advantage of a supply chain finance perspective.

The rest of the paper outlines the theoretical background and gaps in the literature to introduce the research question and action-research methodology. The next section presents the analysis and key findings, and develops related discussion. The conclusions highlight limitations and propose some future research directions.

2. Literature review

2.1 Theoretical background

Previous researchers have discussed in-depth literature reviews on the concept of supply chain finance (SCF) (Gelsomino *et al.*, 2016; Chakuu *et al.*, 2017; Xu *et al.*, 2018; Marak and Pillai, 2019; Parida *et al.*, 2022) by underlining different focuses and investigation approaches – from both finance and supply chain disciplines – and, consequently, different corresponding definitions. Therefore, Gelsomino *et al.* (2016) attempted to systematize the literature into a framework that emphasizes two different perspectives on the study of SCF: the "financial" or "finance-oriented perspective," which acts on financial flows, and the "supply chain-oriented perspective," which acts on mainly physical supply chain flows through efficient inventory management. The first perspective is purely financial and considers the SCF approach as a set of financial solutions that generally includes trade receivables and payables and in most cases is provided by financial institutions (Camerinelli, 2009; Chen and Hu, 2011; Lamoureux and Evans, 2011; More and Basu, 2013; Wuttke *et al.*, 2013a, b). The second perspective is more extensive; it emphasizes the role of collaboration among members belonging to the same supply chain and extends the optimization of working capital to physical aspects, including inventories through practices of inventory optimization and/or inventory shifting (Grosse-Ruyken *et al.*, 2011; Hofmann, 2005; Pfohl and Gomm, 2009; Randall and Farris, 2009; Wuttke *et al.*, 2013a, b) and fixed asset financing (Gomm, 2010; Caniato *et al.*, 2019; Ronchini *et al.*, 2021). Focusing on inventory refers both to the physical stock (raw materials and components/finished products) of the individual company and to the physical flows of transfers of goods within the buyer-supplier relationship along the supply chain. Very little literature is focused on inventory-based research within the framework of SCF (Ronchini *et al.*, 2021).

Combined with the two main perspectives, there are different categories of SCF solutions based on their main characteristics: traditional, innovative and collaborative solutions (Gelsomino *et al.*, 2016). The finance-oriented perspective includes traditional and innovative solutions, while the supply chain-oriented perspective comprises collaborative solutions. Traditional solutions indicate consolidated tools in financial practice linked to commercial exchanges. Innovative solutions enable less popular tools that can be applied only because of mature information technologies and a resort to the intervention of intermediaries and IT service providers. With collaborative solutions, it is possible to optimize working capital with inventories; these indicate typical supply chain management tools that take advantage of the exchange and coordination of information between supply chain partners. These tools, in addition to looking at efficiency in order management and stock sizing processes, contribute to improving the degree of financial sustainability of the entire supply chain.

The added value of the supply chain-oriented perspective of SCF derives from assuming complementary and synergistic aspects: process aspect – SCF solutions not only concern the payment phase but also the operations of the entire relationship; relationship aspect – SCF solutions are not based on the performance of a single company but on the relationships between customers and suppliers; and, "community" aspect – SCF solutions do not focus on individual business relationships but on entire aggregated "communities" of relationships, such as entire supply chains, districts, business associations and horizontal networks (Gelsomino *et al.*, 2016; Caniato *et al.*, 2016).

Figure 1 synthesizes the theoretical background arising from the literature review and underlines the focus of the present research (marked in Figure 1 with a dashed line).

In this study, we adopt the supply chain-oriented perspective as an approach for consecutive supply chain partners to jointly optimize working capital in terms of accounts payable, accounts receivable and inventories (Wang *et al.*, 2020; Gelsomino *et al.*, 2016).

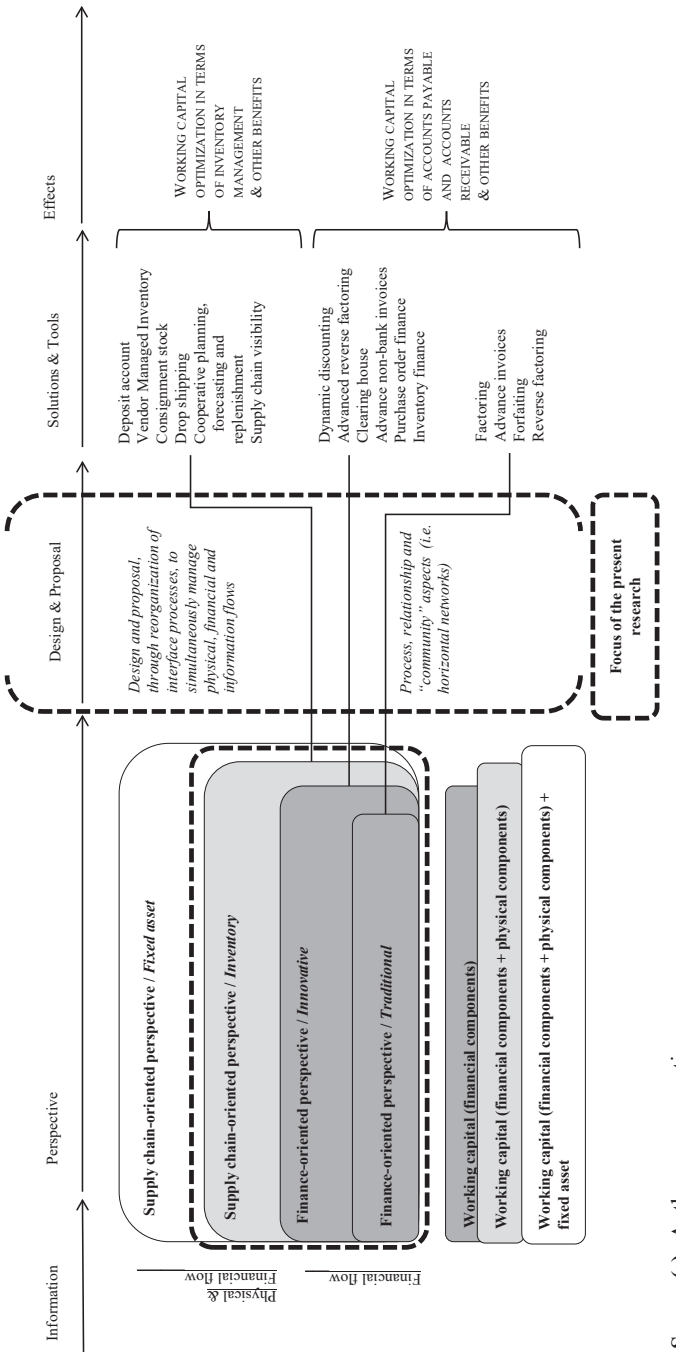

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Figure 1.
Conceptual background and research focus

2.2 Literature gaps and research positioning

Although many studies have been conducted to understand SCF from both previous explained perspectives, we identify four research gaps, that suggest our original research focus in SCF for SMEs: the SMEs' development perspective, the organizational settings' design, the horizontal network agreement and the action research case study.

The first literature gap refers to SMEs' development perspective. Gronum *et al.* (2012) examine SME performance concerning supply chain networks and find that strong ties improve firm performance. Also Ali *et al.* (2020) focus on SME performance (also in their previous studies), examining how SCF as a risk mitigation strategy influences firm performance. Song *et al.* (2018) explore the impact of SCF on SMEs accessing financing. Zhu *et al.* (2019) investigate the factors that enhance SMEs' financing ability with an enhanced hybrid ensemble machine learning approach in an SCF perspective. In 2021, Zhu *et al.* also propose research to enhance financing for SME suppliers with reverse factoring. Li *et al.* (2020) propose a more general study on the adoption of SCF by SMEs in China that highlights the determinants of adoption and some theoretical implications. de Goeij *et al.* (2021) focus on SME suppliers and how transaction cost and economic factors affect their decision, especially considering reverse factoring solutions. Some works also focus on digital solutions, blockchain and platforms, such as Liu *et al.* (2021), Song *et al.* (2021) and Yu *et al.* (2021). Yuan *et al.* (2021) discuss the relationship among the information integration, supply chain capabilities and credit quality of SMEs in SCF. Alora and Barua (2022) identify, classify and prioritize the supply chain risks faced by Indian micro, small and medium manufacturing companies and develop a comprehensive supply chain risk index. Zhang *et al.* (2022) focus on SME risk and study credit risk prediction in SCF by fusing demographic and behavioral data. To forecast the credit risk of agricultural SME investment in Agriculture 4.0 through SCF, Belhadi *et al.* (2021) propose a study with a machine learning approach. Errico *et al.* (2022) contribute to a better understanding of SMEs' financial constraints in automotive supply chains driven by large companies. Wang *et al.* (2022) study the value of multisource information fusion to predict SME credit risk in SCF in China. The main literature seems to completely neglect the active role of SMEs in the development of their own SCF implementation: that is independently from the financial system and based on the reorganization of the interface-processes by taking a supply chain-oriented perspective and not only a financial one. Therefore, this paper takes at the center of attention SMEs in developing their own project of SCF implementation that includes inventories.

The second literature gap refers to the organizational settings' design. Prior studies focus on different specific solutions of SCF (Caniato *et al.*, 2016). In particular, most academic contributions still relate a single solution, and generally, this is reverse factoring (Chen *et al.*, 2021; Zhu and Ou, 2021; Lekkakos and Serrano, 2016), even if there are few preliminary attempts to combine different solutions simultaneously (e.g. Gelsomino *et al.*, 2016, 2019). Most of the literature is mainly focused on SCF solutions that are implemented to optimize the performance of a single company and the overall supply chain (Chen *et al.*, 2021). These solutions underline the potential benefits – mainly benefits from a strictly financial point of view – and performance improvement, especially the impact on the cash-to-cash cycle, consistent with SCF's definition or in terms of sustainable performance metrics (Gomm, 2010; Pfohl and Gomm, 2009; Randall and Farris, 2009). Other benefits of SCF solutions, however, are not limited to financial performance and refer, at least, to the reduction of the risk of bankruptcy throughout the supply chain (Klapper, 2006), the support of financial institutions in risk assessment and credit evaluation (Hofmann, 2005) and the enhancement of collaboration, visibility or automation (Hofmann and Belin, 2011; Lamoureux and Evans, 2011). One of the most interesting benefits from a strategic point of view due to the optimization of working capital is that of supporting supply chain partners,

suppliers and clients, reducing the risk of bankruptcy of critical and/or strategic players in the supply chain that are financially weak. Since benefits and advantages in terms of performance are well-treated in the literature, a comprehensive model is needed to facilitate the practical implementation and development of SCF beyond the specific solutions adopted (Chen *et al.*, 2021) or theoretical issues (Wang *et al.*, 2020). The previous phase, before the application of specific solutions/tools and the optimization evaluation, is lacking. Much remains to be learned when a firm designs and implements its new structural-organizational setup to concretely pursue its SCF results' objectives (performance/benefit). Therefore, this paper explores the preliminary phase of the design and implementation (project and processes) of an organizational setting that can obtain the benefits of a SCF perspective.

The third literature gap refers to the horizontal network agreement. The literature on SCF emphasizes the importance of the relationship between actors along the supply chain, which is a crucial point that has been well developed in most contributions (Gelsomino *et al.*, 2016; Chakuu *et al.*, 2017; Cragg *et al.*, 2020; Xu *et al.*, 2018; Macpherson and Wilson, 2003; Marak and Pillai, 2019). The object of analysis has been the single actor and its relationships with suppliers and/or clients, the dyadic relationship, the supply chain and the network approach. Companies can no longer operate as "islands" but must necessarily consider the network dimensions of the entire system. This is especially true in contexts where the competition is no longer only between "single" companies but between different "supply chains" (Christopher, 2016). Some more recent contributions also propose future research directions with a focus on specific topics, such as the role of digital transformation in empowering SCF (Chen *et al.*, 2021) or introducing the business "ecosystem" concept to the SCF domain (Bals, 2019). However, even if sometimes the literature utilizes the terminology "ecosystem" or "network," it always focuses its attention on vertical networks by considering multiple suppliers and/or clients (i.e. Bals, 2019; Blundel and Hingley, 2001; Carnovale *et al.*, 2019; Li *et al.*, 2020; Thakkar *et al.*, 2008; Zhao *et al.*, 2020). Greater connectivity and information flow are innovations at the center of SCF management (Bals, 2019) that are also worth trying at the network level, which concretely valorizes "community" aspect (Gelsomino *et al.*, 2016; Caniato *et al.*, 2016). Much remains to be investigated on horizontal network agreements, between different supply chains, that have been built to benefit from SCF. Thus, this paper explores horizontal collaborative networks that aim at taking advantages from a SCF perspective.

The fourth gap refers to the methodological approaches adopted: the literature on SCF tends to often be conceptual, with limited empirical insights, and in particular, many papers propose analytical models (Wang *et al.*, 2020). There is a lack of a holistic framework and general understanding of SCF adoption (Gelsomino *et al.*, 2016; Martin and Hofmann, 2019). Very few attempts have been made to analyze the empirical adoption of SCF based on large sample empirical investigations (Gelsomino *et al.*, 2016; Wuttke *et al.*, 2013a, b) or case evidence (Moretto *et al.*, 2019; Wuttke *et al.*, 2013a, b). Xu *et al.* (2018) in their literature review on SCF also call for more empirical studies of SCF applications. Zhang *et al.* (2022) show that there are clear differences in the effectiveness of SCF for different industries: the potential benefits of SCF adoption need empirical verification, and it is interesting to investigate the role of SCF across multiple industries. Chen *et al.* (2021) suggest orienting future studies that enrich practical implications by providing more empirical analysis, for example, in-depth case studies, large-scale surveys and action research. Much remains to be learned in this methodological direction; accordingly, this paper adopts an action research network-case study. This research approach is original in this field: there are no research references (based on the systematic literature review by Alfaro-Tanco *et al.*, 2021) that use these typologies to analyze dual contributions for research and practitioners.

To fill the emerging gaps in the literature, much remains to be learned about how SMEs may develop their business through horizontal network collaboration to benefit from SCF perspective. Business development is a crucial cluster of research among that related to SMEs, and there has been little focus on the business processes concerned with supply chain management (Kumar *et al.*, 2021); this deserves to be more deeply investigated, also following the opportunities in supply chain relationships (Blundel and Hingley, 2001; Macpherson and Wilson, 2003; Thakkar *et al.*, 2008; Cragg *et al.*, 2020). As such, the present paper explores the following research question (RQ):

RQ. How can horizontal network collaboration be designed and implemented between small and medium enterprises to take advantage of a supply chain finance perspective?

To pursue this aim, the paper adopts an action research approach focused on a longitudinal network-case study.

3. Methodology and research design

This research design relies on the action research (AR) approach (Näslund *et al.*, 2010). This method fits best to respond to our research question, as it permits application in real settings to address real-world managerial and organizational problems (Näslund, 2002). Because of this qualitative methodology, both the researchers' team and organizational agents collaborate by sharing ideas and reflections. In this study, we apply AR in terms of "diagnosis" and "proposals" for two types of contributions (Alfaro-Tanco *et al.*, 2021). During the "diagnosis" phase, AR contributes to describing and analyzing a particular issue, in our case, identifying how to design a horizontal network collaboration. The AR "proposal" phase enables the AR team to recommend specific actions to practitioners to implement the collaboration that aims at taking advantage of a SCF perspective. Our research design relies on cyclical stages and adds "diagnosis" and "proposal" as relevant outputs for practitioners and for theoretical implications.

Due to the exploratory context of this original study, a case study is a useful instrument for the empirical part of the research, which facilitates an in-depth understanding of complex phenomena (Yin, 2003) and provides a better understanding of events with concrete context-dependent knowledge (Ridder, 2017). Our network-case is a horizontal network, contract based, between small partner companies, which businesses have been longitudinally followed from the network initial life cycle (since 2010), completing its analysis and planning phases. This study adopts the "supply chain-oriented perspective" (recalled in Figure 1); as such, the overall analyses include information on their downstream clients and upstream suppliers along the supply chain from a multi-tier viewpoint, as advocated in the most recent studies on the development of SCF (Caniato *et al.*, 2019).

The selected contract network (we call "Partnership-Italia," as pseudonym) belongs to the Italian wine industry; this network case has been chosen because of its interest (Stake, 2005) and relevance for theoretical reasons (Eisenhardt and Graebner, 2007). The network-case members are SMEs (now between two small businesses, Poderi Einaudi-PE and Agricola Tedeschi-AT) that were highly affected by the financial crisis, and accordingly, they can benefit from SCF solutions by adopting the supply chain-oriented perspective. Furthermore, this study chooses its applied field of research in the wine context in Italy, one of the most important business areas within the more general food sector, which represents excellence both inside and outside the country and impacts correlated activities in both business-to-business channels and markets (hotels, restaurants, cafés, catering and wine shops; modern mass market retailers; digital online channels) and business-to-consumer markets. The network-case collaboration represents the first formal "network contract" of its type signed in

the wine sector in Italy in the year of its foundation, and it is a pioneering project based on improving supply chain working capital. By addressing real-world organizations and managerial problems, AR increases the emphasis on relevance (Ellis and Kiely, 2000).

We adopt a team-based approach, which is strongly encouraged to increase reliability, through investigator triangulation (Benbasat *et al.*, 1987), with professionals as part of the case study. The top managers of wine industry SMEs, members of rising collaborative projects, actively participated during the discovery, descriptive, mapping and managing phases. The principal research team is mainly composed of five academic researchers, one consultant and three top managers (the CEOs of the two Italian wine companies investigated and another one who was inside the project at the beginning but is now no longer with the project; for privacy, we call this Company Gamma-CG). Our research team combines researchers and members of the organizations with different skills, knowledge and experience. The team has access to gaining rights of entry to information and data, with mutual trust, and are active participants while conducting the study and being part of the change (Kates and Robertson, 2004). Table 1 gives details of the research with the organizational participants, the number of meetings (30) with related purposes and timelines and other partners included (other professionals, sales force and customers). In AR, data collection covers the entire project and relies on participants generating data through narratives and field notes with ongoing commentary and journals for personal reflections and ideas. Personal notes are shared during team meetings with other investigators to find pragmatic solutions or when data analyses are actively interpreted in a theoretical framework. This flexibility in data collection, typical of AR research, takes advantage of new emergent themes to improve resultant theory (Näslund, 2002; Eisenhardt and Graebner, 2007). For 10 years, the research team collaboratively conducted multiple steps in the research process (see Table 1), in particular, refining a focus, conducting reconnaissance, reflecting on progress, planning for action, implementing and observing action, and reflecting and evaluating change (Townsend, 2013 p.19).

The empirical investigation was based on meetings within the companies; moreover, internal presentations and reports of the companies, external documents and participants' informal comments were tracked in the participants/observers notes and then examined to triangulate data and provide rigor to the study (Yin, 2003). A field analysis through active meeting participation was necessary because no other studies have specifically addressed the innovative project implemented by small companies investigating SCF projects from a supply chain-oriented perspective. We consider these documents and the meeting transcripts and participant notes to be sufficient because they are posed to those directly involved in the project. To respond to the part of the RQ related to network mapping and process design, we adopt the "IDEF" notation, which represents one of the main modeling languages of the operational flows of activities (Lee *et al.*, 2000). To respond to the part of the RQ related to SCF network implementation, the data collected were analyzed through NVivo coding (Strauss and Corbin, 1990) to highlight first-order themes, theoretical categories and theoretical dimensions. For scientific purposes, the academic researchers met regularly to theoretically interpret cyclically (Ballantyne, 2004) the overall results, as suggested by Näslund *et al.* (2010).

4. Network-case study analysis with diagnosis and proposal

The Partnership-Italia business network is an Italian collaborative network contract between two small companies: PE, with 20 employees, revenue € 2.529 mil. (2020); and AT, with 14 employees, revenue € 4.35 mil. (2020). These main network members are two of the oldest and most popular wine companies in Italy, with historically high-quality products, and they are recognized around the world for their excellent quality and are strictly linked to their own

Table 1.
Research timeline, with meetings, purposes and participants

Meetings and Events		Strategic and operative meetings with partners and professionals			Sales force meetings		Events with customers	
Time frame	Steps	Meeting numbers (tot. 22)	External participants (tot. 11)	Meeting purpose	Meeting numbers (tot. 3, about 20 partici-pants each)	Meeting purpose	Meeting numbers (tot. 5, about 80 participants total)	Meeting purpose
2010–2012	Search for a new business model	3	2010: Sales and marketing director Company Gamma-CG + CEO CG	Discovery: Search new business model				
		2	2011: consultant, sales and marketing director CG, CEO (owner) PE	Discovery: Search new business model and partnership modes				
		2	2012: Sales and marketing director CG, CEO (owner) PE, CEO (co-owner) AT, consultant	Description: Involvement of the AT and sharing the methods of collaboration with the consultant as manager of the partnership				
2013	Partnership between 3 companies	2	Managerial consultant, legal consultants (2), sales and marketing director CG, CEO (owner) PE, CEO (co-owner) AT	Mapping: Analysis of the solutions to formalize the partnership between the companies involved and, in this way, to resolve the problems of the three invoices. For this purpose, expert legal consultants were involved in the formalization procedures for the collaborations between companies	1	Relationship building = Presentation of the partnership and operation of combined orders	2	Relationship building: Presentation events of the partnership among the 3 wineries organized in two restaurants, with final customers of these companies (about 15 participants each), one in Tuscany and one in Veneto

(*continued*)

Table 1.

Meetings and Events		Strategic and operative meetings with partners and professionals			Sales force meetings		Events with customers	
Time frame	Steps	Meeting numbers (tot. 22)	External participants (tot. 11)	Meeting purpose	Meeting numbers (tot. 3, about 20 partici-pants each)	Meeting purpose	Meeting numbers (tot. 5, about 80 participants total)	Meeting purpose
2014–2017	Definition of the network contract among 3 companies	2014: 4	Managerial consultant, Legal consultants (2), Notary, Sales and Marketing director CG, CEO (owner) PE, CEO (co-owner) AT + operational staff of the three companies (3)	Relationship building = The second meeting was organized to formalize the network contract with the Notary. The third and fourth meetings were aimed at planning operational activities with the staff involved in the management of operational and interorganizational processes engineered by the managerial consultant	1	Relationship building: Presentation of the network contract and innovations regarding the management of combined orders	2	Relationship building: Presentation events of the partnership among the 3 wineries organized in two restaurants, with final customers of these companies (about 15 participants each), one in Milan and one in Rome
	Partnership management	2015–2017: 1/y	Managerial consultant, sales and marketing director CG, CEO (owner) PE, CEO (co-owner) AT	Partnership management: Meetings of the management committee to analyze the results of the partnership and plan the initiatives for the sales force and customers				

(*continued*)

Table 1.

Meetings and Events		Strategic and operative meetings with partners and professionals			Sales force meetings		Events with customers	
Time frame	Steps	Meeting numbers (tot. 22)	External participants (tot. 11)	Meeting purpose	Meeting numbers (tot. 3, about 20 partici-pants each)	Meeting purpose	Meeting numbers (tot. 5, about 80 participants total)	Meeting purpose
2018–2022	Partnership management	2018: 3	Managerial consultant, CEO (owner) PE, CEO (co-owner) AT + operational staff of the two companies	Remapping: First meeting: reschedule the partnership and operational activities. Second and third meetings, with the staff of the two companies involved to reorganize operational and interorganizational processes	1	Relationship building: Presentation to the sales network of the new organization of the partnership, after the exit of CG	1	Relationship building: Presentation event of the partnership between the 2 wineries and their final customers (about 30 participants), organized in a wine shop in Rome
		2019–2022: 1/y	Managerial consultant, CEO (owner) PE, CEO (co-owner) AT	Partnership management: Meetings of the management committee: to analyze the results of the partnership and plan the initiatives for the sales force and the customers				

Source(s): Authors own creation

specific production areas of Italy (Piemonte and Veneto). Their supply chain members are micro and small companies. The research analysis covers the network life cycle, which is divided into the following four phases: the first is to search for a new business model that responds to the context changes (2010–2012); the second phase concerns building a partnership that aims at taking advantages from an SCF perspective (2013); the third phase occurs during the definition of the network contract (2014–2017); and the fourth phase is focused on partnership management (2018–2022).

During the first phase, in the initial meetings, our analyses emphasize the main drivers of the change, which have prompted the CG to respond with a new business, answering to the following critical issues:

(1) economic recession, with lower financial capacity of customers, which limited the propensity to purchase/consume wines of a specific price range;

(2) wine market fragmentation, with the presence of many small operators, including restaurants and wine shops, and a large number of competing wineries; changes in the procurement process of the Ho.Re.Ca. (hotel-restaurant-catering) operators that is increasingly oriented toward reducing the quantities of wine purchased while asking for the same discount conditions in the purchase.

Reflecting on these problems, the CEO had to admit that it may be better to proceed together with partner companies to face this new scenario. Therefore, in 2011, two other companies (PE and AT) were invited by the researcher to join the project to try to understand how they could collaborate all together to implement a new business model. These three companies were competitors but have been convinced to meet to find financial win-win solutions. They decided to consider co-makership activities to optimize the management of short-term financial assets, cash flow, receivables and operating payables, and warehouse stocks with an approach that goes beyond the boundaries of individual companies. Much of their discussions were on how to manage innovation together by sharing resources and new interface operating processes. In 2012, they hired a business consultant as a key guide for the project.

During the second phase, the collaboration included commercial, logistics and marketing management so that our diagnosis needed to map the related processes. Specifically, the three companies began to manage combined customer orders, but the corresponding orders were managed with three separate invoices. This misalignment created problems with customers and with the sales force, which suggested a single invoice to simplify the accounting and financial management of these combined purchases toward combined order invoices. This idea represents the first solution of the collaboration between companies for the development of the "combined orders mechanism." The analysis enables the redesign of the order process into a new process with combined orders (see Figure 2), which affects other relationships with actors along the supply chain. As such, Figure 2 represents the macroprocess, mapped with the "IDEF" notation (while the single subprocesses are not reported here because they are not the focus of this paper).

The third phase shows the main organizational settings, with the decision to adopt a network contract (law-regulated in the Italian Legislative Decree 5/2009) as a formal solution of collaboration. The network contract represents the results obtained in this phase; specifically, it was shared by the partners and formalized in 2014, and currently, it constitutes the contractual basis that manages the partnership between the companies involved. This collaborative network contract aims at formalizing the partnership already started in previous years, and it is based on a network program (purposes and strategies) and a network regulation (operating activities to integrate their supply chain). It also provides for the establishment of a management committee made up of the legal representatives of the three

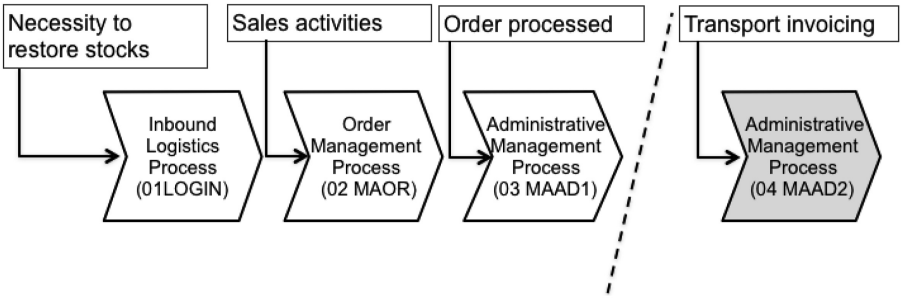
partner companies and chaired by the president of the Board of Directors of CG; the consultant assumes the responsibility for developing the project and implementing the management processes of the co-makership activities. Alongside, the following declaration, by the sales and marketing director of CG, expresses in synthesis what has been obtained with this collaborative project, from a supply chain finance perspective, between the company and its clients:

> We are witnessing too radical changes within the wine industry and the market to be faced with traditional solutions. The partnership with the other producers involved allows us to be more competitive in the market, also offering our customers the opportunity to optimize their stocks and their financial exposure.

The fourth and final phase depicts the reorganization of the business network with new interorganizational processes. The CG, which was facing intensive growth, decided to exit from this network. Their size and scope were no longer aligned with those of the other two partners. This example indicates the importance of sharing common goals for mutual benefits in network collaboration. Due to this decision, the new network composed of only two companies had to completely reorganize the interorganizational processes for the management of matching orders and related logistics with the identification of a new common warehouse. This step marked a concrete result of the collaboration between companies (see the collaborative area in Figure 3).

The new management committee was reconstituted with the assignment of the CEO of PE as chairman and the entry of the consultant as a third member of the committee. The two companies involved in the network contract are engaged in the production of the raw material (grapes), in the transformation of grapes into wines (vinification), in the refinement of wines, in the sale of the wine in different markets and in logistics handling. In Figure 4, we present the collaborative internal supply chain redesign that contributes to better managing stocks and optimizing financial flows along the downstream supply chain.

Both companies produce grapes through agricultural companies, which take care of the vineyards, the production of grapes and their sale to owned commercial companies. The supplier side of their supply chains includes 18 suppliers (12 regular and 6 occasional) that supply bottles (4 suppliers), corks (6), capsules (1), labels (1), packaging/cartons (3), packaging/wook cases (1) and logistics (2). Wine and grapes are internally produced. The demand side of their supply chain includes 513 clients as professional operators (2021 data), with 200 restaurants, 165 wine shops, 67 bar and pastry shops, 33 distributors, 15 gastronomies, 2 catering services, 13 small grocery stores, 2 ice cream shops and 18 hotels. Other customers are 9 private consumers, 88 other businesses and 1 manufacturer. The sales force network includes 61 agents of whom 28 are in partnership.



Source(s): Authors own creation

Figure 2.
Mapping the macro combined-order management process

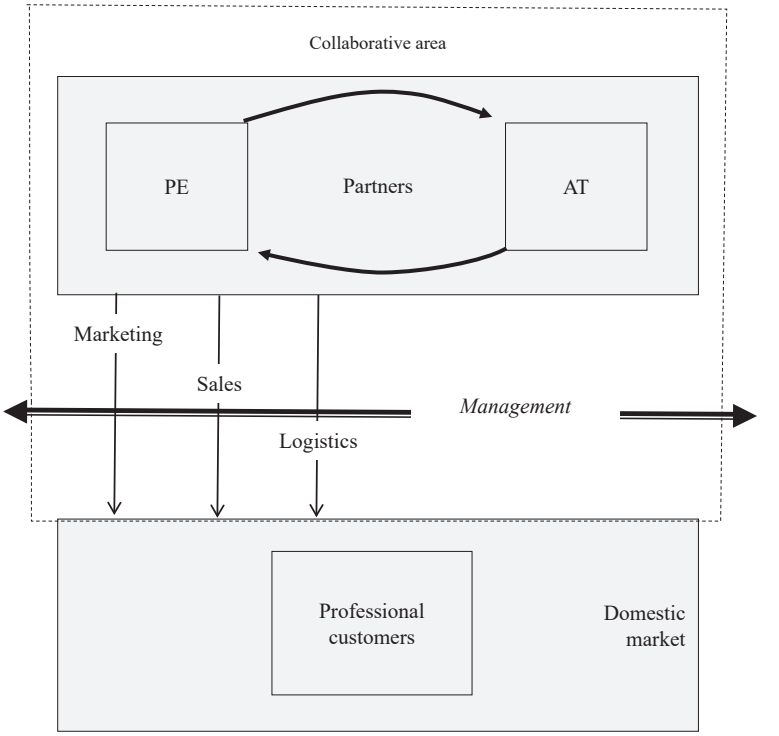


Figure 3.
Network collaborative area

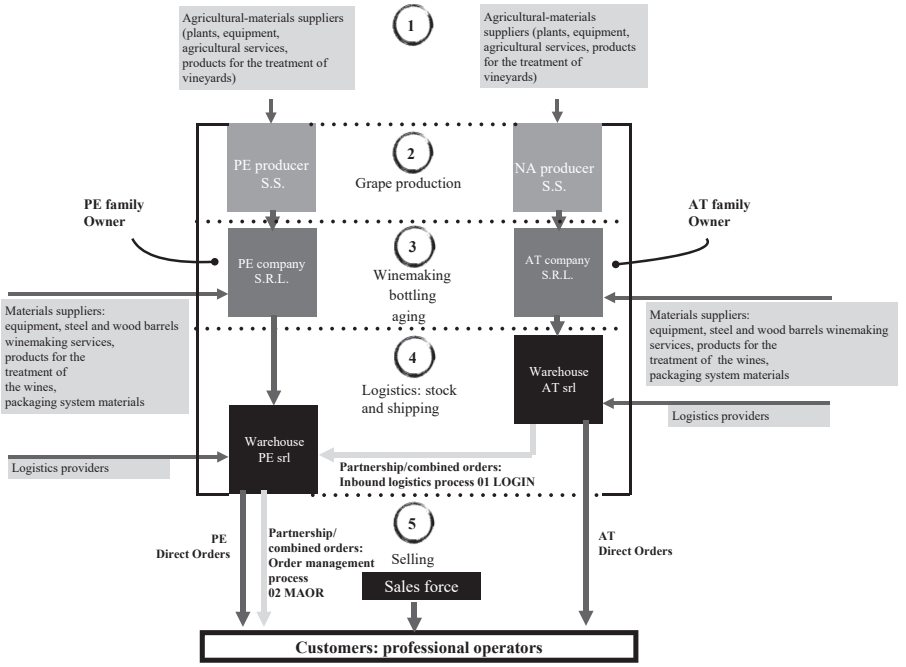
Source(s): Authors own creation

The design and implementation of horizontal network collaboration between these companies can help sustain advantages from the supply chain finance perspective for both them and their clients and customers. The companies were not able to account for and measure punctual financial benefits in their business, so the quantitative results are not measurable due to a lack of data, as the clients (small and micro businesses) were not able to trace them. However, they strongly evidenced time savings and higher flexibility in the order process. In fact, during the meetings, both partner companies and their main clients declared how this project has improved over time with tangible positive effects. The sentences captured by the companies' clients (a little restaurant and a small wineshop) express well these benefit effects:

> We are trying to minimize the costs and risks of managing our restaurant. Economic uncertainty, rising costs, limited space, liquidity needs, force us to buy less and more frequently [restaurant].

> The combined orders tool allows us to purchase the wines of two historic companies, of two important territories, without weighing down our small warehouses and our financial resources [wineshop].

Finally, the AR method, adopted as a cyclical process, enables future directions that stimulate team members to seek new and additional areas in which to collaborate, with a view to developing other interface processes and upstream vertical coordination mechanisms (Varella Miranda *et al.*, 2022). Because of the downstream experience, the integration will be expanded upstream for procurement activities. A development proposal, an example of



Source(s): Authors own creation

Figure 4.
Collaborative supply chain redesign of the partnership-Italia network

the latest results of our AR research (available upon request), has been designed involving the two companies in co-making activities in supplying barrels and packaging system, such as labels, caps, boxes and bottles. In this way, the entire procurement process between the partners (wineries and suppliers) might contribute to better managing stocks and optimizing financial flows along the supply chain.

5. Findings and discussion

This network-case analysis, together with a diagnosis and proposed actions, provides a response to our RQ on how to design and implement horizontal network collaboration between SMEs, and it aims at taking advantage of a supply chain finance perspective and addressing the academic literature gaps that emerged in our initial review. It is now possible to connect case-related results to these key concepts: the main themes that emerged have been classified as first-order codes that the researchers interpreted in different theoretical categories by identifying the theoretical dimensions related to the three main literature gaps, such as SMEs' development perspective, organizational settings' design and horizontal network agreement. Table 2 depicts the data structure summary, that is reviewed for future research in the conclusion paragraph.

The network-case study has realized a long-term contract agreement and a combined order process reengineering for the interface points of contact between partners (*how to design horizontal network collaboration between SMEs*). In realizing these design improvements, the research team has faced different implementation decisions at strategic and operative levels (*how to implement horizontal network collaboration between SMEs*). The latest solution has incorporated an added value of the SCF (*taking advantage from an SCF*

First-order themes	Theoretical categories	Theoretical dimensions
Initial critical issue (economic recession, market fragmentation, change in the purchasing process of Ho.Re.Ca. operators, less financial capacity of customers)	Collaborative analysis to understand the context and problems	SMEs' development perspectives
Options for manufacturing companies to develop co-makership activities	Collaboration modes between multiple producers	
Collaborative purchasing Combined orders management	Partnership planning and management	Organizational settings' design
Active discussion about collaboration methods and setting common goals	Collaborative discovery in search on new business models	
Collaborative supply chain process mapping Project leader for driving the change	Collaborative area	
Network program Network members' rules and responsibilities	Network governance	Horizontal network agreement
Network regulation Network results in terms of combined orders and customer satisfaction	Network contract shared benefits (marketing, commercial, logistics and strategic)	
Information sharing solutions	Future upstream collaborations along the overall supply chain	

Table 2.
Data structure

Source(s): Authors own creation

perspective) that derives from assuming three complementary and synergistic aspects (Gelsomino *et al.*, 2016; Caniato *et al.*, 2016). With the process aspect, the collaboration within this horizontal network considers the common management of the supply chain operational processes (commercial, logistic and administrative). Following the relationship aspect, this best practice is based on a collaborative dimension of sharing and finalizing a common goal for its customers. Adopting the "community" aspect, the collaboration of Partnership-Italia desires to manage supply chain relationships in the medium-long term and aims to generate a shared platform on which to base common business areas (for example, the prospective intent to expand collaboration in purchasing supply chain processes) and benefits. The main benefits can therefore be summarized into different types: marketing and commercial, logistics and strategic. Marketing benefits are linked to the possibility of increasing the value and, therefore, the effectiveness of the co-marketing activities carried out by the two companies as part of the shared development programs. Equally important is the cost savings that can be achieved by sharing certain activities carried out jointly, for example, by exploiting the economies of scope in the use of professionals dedicated to public relations or communication in general. Commercial benefits connect to the possibility of expanding markets and reaching certain categories of customers; the possibility of exploiting the preferential introduction of certain sales structures (agents, distributors, etc.) by increasing the common contractual strength creates the possibility of developing sales even in difficult market periods. Logistic benefits link to the possibility of managing the inbound and outbound activities of the combined order management logistic process in partnership, with the consequent sharing of some structural costs (common warehouse, warehouse workers, and administration of the relative active and passive cycles) and distribution logistics. Strategic benefits are linked to the economic-financial savings along the entire supply chain, in particular by enabling customers to reduce the risks of their commercial activity. Improvement of the efficiency of decision-making and operational processes is linked to a

higher degree of information sharing within the supply chain of the network partner companies.

Important implications of this study, almost neglected in the SCF literature (Parida *et al.*, 2022), are the managerial and organizational insights for designing a real and concrete implementation in horizontal supply chain network collaboration by entrepreneurial ventures. Taking the supply chain-oriented perspective of SCF, since inventory refers not only to the physical stock of individual companies but also to the physical flows of transfers of goods within the buyer–supplier relationship along the supply chain, it involves the relationship processes that are at the border between two supplier-customer organizations, upstream and downstream, that is, the procurement cycle for a customer and the order management cycle for a supplier. These interface processes between supplier and business-customer become crucial in the SCF arena: they have the potential to maximize the value of the entire supply chain and the horizontal network by simultaneously optimizing the three physical-information-financial flows. To make this opportunity concrete, it is necessary to reorganize and/or redesign the three flows from a more comprehensive supply chain-oriented perspective. This more strategic approach has effects on general efficiency gains and risk management and, most importantly, on relationship improvement and collaboration (Caniato *et al.*, 2019).

6. Conclusion

This paper shows how SMEs can play an active role in developing their collaborative networks that take advantage of a supply chain finance perspective for themselves, their clients and customers based on the reorganization of relationship interface processes. The interface processes, based on sharing information, in this action research are implemented by concrete supply chain integration and coordination, which are fundamental for effective channel alignment and consequently have a positive impact on the optimization of multiple supply chains, achieving the balance of their working capital. This study shows how SCF solutions may be developed beyond the traditional three-dimensional supplier-customer-bank view to promote an agile disaggregation and reaggregation of groups distributed on requests around shared interest and overcome old and rigid divisions, especially from a supply chain-oriented perspective that focuses on inventory management.

Theoretical implications are strictly related to our initial literature review that motivated our research design, case selection and method decisions. Our overall analyses are oriented to respond to those theoretical gaps. Our insights, depicted adopting the SCF theoretical perspective as suggested by Ronchini *et al.* (2021), are showing some opportunities for collaboration between different supply chains.

In particular, we remark that our focus is related to the SMEs focusing on the business processes development concerned with supply chain management (responding to the call of Kumar *et al.*, 2021), and as such we are contributing to the first literature gap. Companies that can design and implement SCF solutions pragmatically help sustain the smaller and weaker components of their supply chain. The implementation of these innovative initiatives, based on supply chain orientation, allows the participating companies and their customers (and in the future, their suppliers) to be responsive to the changing competitive context through a more strategic approach. Furthermore, as highlighted by Chen *et al.* (2021) and Wang *et al.* (2020), more research is needed to expand SCF studies beyond the specific solutions adopted. So, our network-case represents an example for successful design and implementation of those solutions, in this way contributing to the second literature gap. In particular, this case study indicates that benefits are not only in terms of financial flow optimization but also in terms of better management of the working capital, which has effects on general efficiency gains and risk management and, most of all, on relationship improvement and collaboration

within a horizontal network (third literature gap). The optimization of the performance of each individual company is closely linked to the capacity to integrate the information flow (Bals, 2019) and make this integration the basis of the coordination of physical and financial flows from a supply chain-oriented perspective.

This network-case study storyline, presenting an overview of ten years of meetings, with related purposes (Table 1), is suggesting a roadmap for design and implementation of horizontal network as managerial implications. In particular, the overall agenda should include discovery, description, mapping, relationship building, remapping (if necessary) and partnership management. Practitioners may also find inspiring examples reading the case's main evolution steps (depicted as first-order themes, first column in Table 2), the macro process mapping (Figure 2), the network collaborative area (Figure 3) and future collaborative supply chain design. In short, we wish that by reading this case study in detail, managers of SMEs can find useful advice, or ideas, on how they can replicate such an example in their own contexts. This action research, with application in real settings to address real world, is contributing to the fourth literature gap.

In our analyses, we found a connection between theoretical dimensions and categories (presented in Table 2) that could inspire further research. For instance, in order to expand the SMEs' development perspectives (in developing a project of SCF implementation, including inventories independently from the financial system and reorganizing interface processes by taking a supply chain-oriented perspective), our findings suggest to include collaborative analysis to understand the context and problems, and to explore collaboration modes between multiple producers. Furthermore, future action research, that would like to contribute to organizational settings' design that benefits a supply chain finance perspective, should include three theoretical elements: partnership planning and management; collaborative discovery in search on new business models; and collaborative area. Finally, future research should explore more horizontal network agreements and related SCF benefits, including the following elements: network governance, network contract shared benefits and future upstream collaborations along the overall supply chain.

Although this study has provided some original elements from the conceptual framework and from the insights from the case study, more action research should strive to extend the analyses. Main limitations are related to the specific research context and method, as case studies are subjective and do not lend themselves to generalization; however, they "facilitate an understanding of process by studying a subject within the context of its existence" (Deakins *et al.*, 2002, p. 10). Within the same network-case, it might be interesting to follow future developments along the supply chains that measure the working capital advantages and the upstream on the procurement side (Varella Miranda *et al.*, 2022), and also extend the study of the impacts on customers' customers and suppliers' suppliers from an end-to-end supply chain point of view. This type of study deserves to be better explored in future research in light of interesting developments, not least because the potential SCF market still has many open margins for the expansion of interests by both academics and practitioners.

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