Business models for Supply Chain Finance: the perspective of Logistics Service Providers

Antonella Moretto (antonella.moretto@polimi.it)
Department of Management, Economics and Industrial Engineering, Politecnico di Milano, via Lambruschini 4/b, Milano, Italy

Luca Mattia Gelsomino
Strategic Entrepreneurship Research Centre, Windesheim University of Applied Sciences, Campus 2-6, 8017 CA, Zwolle, The Netherlands

Federico Caniato
Department of Management, Economics and Industrial Engineering, Politecnico di Milano, via Lambruschini 4/b, Milano, Italy

Ronald de Boer
Strategic Entrepreneurship Research Centre, Windesheim University of Applied Sciences, Campus 2-6, 8017 CA, Zwolle, The Netherlands

Michiel Steeman
Strategic Entrepreneurship Research Centre, Windesheim University of Applied Sciences, Campus 2-6, 8017 CA, Zwolle, The Netherlands

Abstract

Literature about Supply Chain Finance presents the potential relevant role of Logistics Service Providers, but literature has not investigated how Logistics Service Providers contribute to the offering of Supply Chain Finance solutions. This paper aims at investigating the role of this actor and business models they might use. Resource Orchestration Theory is used as theoretical lens to develop the research framework and identify business models for Logistics Service Providers. Through the interviews to 29 Logistics Service Providers at the European level, the paper identified 4 potential business models, characterized in terms of resources used (financial, information, and material resources) as well as in terms of research competitive advantage.

Keywords: Supply Chain Finance; Logistics Service Providers; Business model

Introduction and literature review

Supply Chain Finance (SCF) is at the connection between Supply Chain Management (SCM) and finance, including elements of working capital management, Trade Credit, risk evaluation, etc (Hofmann and Johnson 2016). The final purpose of SCF is to align supply chain flows (i.e., financial, informational and material flows) (Caniato et al. 2016). In this perspective, SCF optimizes financing processes with a supply chain perspective; moreover, it also enhances integration among supply chain actors (i.e., customers, suppliers and service providers), in order to increase value of all companies (Pfohl and Gomm 2009) and mitigation of suppliers' bankruptcy risk by creating an alternative source of competitive advantage (Wuttke et al. 2016).

In the literature, three main definitions of SCF can be identified: (1) SCF as a combination of tools addressing the financial flows in the supply chain (Gomm, 2010); (2) SCF as a synonymous for solutions, such as reverse factoring, focused on buyer-driven payables; (3) SCF as a broader set of solutions aimed at working capital optimization and financing (Aberdeen Group report, 2006; Camerinelli, 2009). This paper embraces this third perspective and in particular refers to Gelsomino et al. (2016) definition of SCF: "*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.*"

Consistently with this definition, SCF specifically consists of a set of instruments (Hofmann 2005): the use of these SCF instruments within appropriate value creation, value proposition and value capture strategies might generate SCF driven business models. However, literature about the business model is still embryonic and still scholars do not agree on business model's definitions (e.g., Timmers, 1998; Hamel, 2000). The most recognized definition is the one proposed by Osterwalder and Pigneur (2010) mentioning business model (BM) as "*a model describing the rationale of how an organization creates, delivers, and captures value*". BMs could act as a lens to address SCF but literature is not illustrating the link between these two concepts. Moreover, literature about business model is mainly using a company perspective, neglecting the SC perspective necessary for SCF.

In this vein, it is important to consider that the implementation of SCF instruments involve several actors, that might be both primary and supporting actors (Pfohl and Gomm 2009a). Literature has investigated mainly the role of financial (Hofmann 2005) and technology actors. However, the market offer has consistently enlarged over the years by including innovative solutions, which might need the involvement of different actors, such as Logistics Service Providers (LSPs), which may play a critical role within inventory finance or asset-based lending (Pfohl and Gomm, 2009). On the other hand, the contribution of Logistics Service Providers has been neglected in current literature, although they are in better shape to provide and support financing (Pfohl and Gomm 2009a).

This paper has the purpose to investigate the contribution of Logistics Service Providers, neglected so far. In order to investigate this role, a Resource Orchestration Theory (ROT) approach was used. Through the conduction of 29 interviews with LSPs at the European level, the main Business Models for SCF were identified. The rest of the paper is organized as follows: in Section 2, the theoretical background of the ROT is illustrated. Then, research goal and research methodology of the paper are illustrated. Section 5 presents and discusses the main findings of the empirical analysis and finally section 6 presents conclusions and future developments of the paper.

Theoretical background – Resource Orchestration Theory

This paper relies on the Resource Orchestration Theory. ROT expands upon the main concepts of the Resource Based View (RBV). RBV "*examines the link between a firm's internal characteristics and performance*" (Barney, 1991). As basic concept, RBV aims at developing and maintaining a competitive advantage through an appropriate management of company's resources and capabilities (Hunt and Davis, 2008). As mentioned above, ROT starts from the ancillary concepts of RBV but move forward, focusing on the actual role of the manager to orchestrate resources strategically (Sirmon et al., 2011). A first important concept to consider pertains to resources: ROT involved a broad range of different resources, that do not pertain simply to assets or physical resources, but extend towards capabilities, organizational processes, firms' attributes, thereby including also intangible resources of the company (Barney, 1991). A second important element to take into consideration pertains to the competitive advantage: ROT aims at understanding if a proper use of resources might give an advantage to companies to develop a strategic value different from any value the company could obtain singularly or achieved by any competitors (Barney, 1991).

The ROT rotes around the two concepts of asset orchestration and resource management. Asset Orchestration pertains to the selection and search of resources, followed by a proper coordination of these resources; resource management whereas pertains to "*the comprehensive process of structuring, bundling, and leveraging a firm's resource portfolio*" (Sirmon et al., 2007). As summarized in this definition, ROT is grounded around three main concepts:

- Structuring resources: is the process to acquire, accumulate and divest resources. The process pertains to purchasing or development of resources perceived as strategic, internal strategic development of these resources with the purpose to create a future competitive advantage and finally eventually shedding firm-controlled resources (Barney, 1986; Lane and Lubatkin, 1998; Sirmon et al., 2007).
- Bundling resources: is the process to integrate different resources to create a unique combination of capabilities. Bundling resources is the combination of three different phases, with different purposes (Ahuja and Morris Lampert, 2001; Sirmon et al., 2007):
    - Stabilizing: this process aims at obtaining minimal incremental improvements in already existing capabilities, for example through training.
    - Enriching: this process has the twofold purpose to extend skills to maintain these up-to-date and to enhance in an extensive way an already existing capability. In this case, companies might either aim to learn new capabilities or to integrate into the company new complementary resources.
    - Pioneering: this process aims at developing new capabilities, unique in comparison to both competitors and previous configurations adopted by the company.
- Leveraging resources: is the process that pertains to the use of resources, appropriately bounded, to create a real value and to achieve the desired competitive advantage.

Research objective

This paper aims at identifying which the role of LSPs to SCF might be and how the ROT might identify different models to offer SCF solutions, as summarized in the following research question:

RQ: How can Logistics Service Providers offer Supply Chain Finance Solutions?

To answer this research question, the main variables were identified on the basis of the literature review.

In terms of SCF solutions, this paper considers as SCF solutions the classification proposed by Caniato et al. (2016), with a focus on inventory management, fixed asset management and account payables and receivables beyond reverse factoring.

Moreover, in order to answer this research question, the Resource Orchestration Theory was taken as theoretical lens to investigate the topic. Consistently with the definition of the ROT, addressing that not just physical resources, we decided to investigate the topic with the perspective of SCM. In this view, main resources considered pertains to the main SCM flows, because the ultimate objective of SCF is to align financial, informational and product flows (Caniato et al. 2016). Thereby, resources considered in the analysis are mainly 3:

- information resources, considering information used by the LSP about customers and about products of their customers
- financial resources, considering financial resources used by the LSP to offer SCF solutions
- physical resources, considering the collateral used by the LSP for the SCF solutions

Beyond the identification of resources, to identify the main features of business models implemented by LSPs for SCF, we used the three phases presented by the ROT, respectively structuring of firm's resource portfolio, building resources to build relevant capabilities, and leveraging capabilities to realize competitive advantage.

Research methodology

Due to the exploratory nature of the study, an interview-based methodology was selected. In particular, 29 Logistics Service Providers at the European level were interviewed in 2017 (9 Italian players, 5 UK players, 5 German players; 5 Dutch players; and 5 Swiss players). In each LSP, at least one direct interview was conducted with the responsible of either Logistics or Supply Chain department. In addition to interviews, direct data were triangulated with information collected on the company's website, examples of case studies, secondary documents, etc.

Beyond nationality, sample is heterogeneous also in terms of typology of LSPs. In particular, we included in the sample:

- LSPs offering a single service such as distribution (5 distributors);
- LSPs classified as Third Party Logistics (3PL), offering integrated services (20 LSPs),
- LSPs classified as Fourth Party Logistics (4PL), offering an advanced management of the whole supply chain (4 LSPs).

Data were collected in 2017. A semi-structured interview protocol was used to collect data in different country. Each interview was conducted by 2 to 3 researchers and were registered, upon request, to avoid information loss. After data collection, all the data were summarized through a structured process: first of all, each interview was summarized into standard paragraph, consistently with the main parts of the interview protocol. Main areas of the interview protocol were as follows: description of the traditional business of the LSP, approach towards SCF, main drivers and barriers in the adoption of SCF, main organizational models used to implement SCF. Then, different interviews were collected in a single file, to make a comparison among different companies and to perform data reduction.

Unit of analysis of the interviews was the company for the general description of the LSP; then information about SCF were asked for each specific SCF solutions, using the single solution as unit of analysis. In case the LSP was not offering any SCF solution, company was interviewed about the reasons for not implementing SCF solutions with a company rather than a solution perspective.

Findings

The approach towards SCF by LSPs

The first insights emerged by the interviews is that different approaches towards SCF are identified among LSPs. In particular, some of those (5 LSPs) are totally skeptical about the possible use of SCF within their supply chain, because perceived as too distant by their traditional operations. These LSPs addressed that SCF is not only not coherent with current business but also a threat for the traditional business, because oriented to financial management of the supply chain. This approach is heterogeneous in terms of country of origin (1 in Italy; 2 in UK; 1 in Germany; 1 in Swisse); on the other hand, 4 out of 5 are offering just distribution services, without any additional value-added service. As a matter of fact, for these companies might be strongly distant from the traditional operational model the offering of SCF solutions and perhaps also quite difficult to illustrate and present these solutions to their current customers.

Other LSPs (4 LSPs) are open to this opportunity, but they presented a critical situation in terms of cash management: thereby, they are using these instruments to streamline their financial flows and so do not see for the moment an opportunity to extend their product offer including these instruments as well. Some of those companies (3 LSPs) are pushed by their customers towards SCF and are involved in SCF programs offered by customers to their suppliers, such as Reverse Factoring. In this situation, we found 2 UK companies and 1 Italian one, all of them classified as 3PL. The fourth player (an Italian distributor) is not involved by a customer but has approaches some banks to use solutions that allow to reduce cash-in flows such as factoring. These players addressed that they might also see a future opportunity in the inclusion of SCF solutions into their product range, but at the current stage they are not strong enough to operate in this sense.

Finally, there are several LSPs (20 LSPs) that have already introduced SCF instruments within their product offering, seeing a competitive advantage in this opportunity. This sample is heterogeneous per country as well as per LSPs' characteristics, involving both 3PL and 4PL. As a matter of fact, none distributor is offering these solutions. This relevant approach towards SCF is a preliminary hint about the potential value of SCF also for LSP, a player not deeply investigated in current literature as an active role for SCF.

An orchestration resource approach to offer SCF

To answer the RQ, the analysis focused on the 20 LSPs that already introduced some SCF solutions. In order to identify different approaches towards SCF, the main steps of the ROT were followed:

- Structuring a firm's resource portfolio. To investigate this point, we tried to understand which resources (i.e., informational, financial and material through collateral) were taken into consideration to propose SCF solutions.
- Building resources to build relevant capabilities. To investigate this point, we tried to understand which combination of resources are used by the LSP to create a competitive advantage and which are the main reasons why an LSP is offering SCF solutions: stabilizing, enriching, pioneering.
- Leveraging capabilities to realize competitive advantage. To investigate this point, we tried to understand which resource is mainly used to realize and obtain the desire competitive advantage.

Structuring a firm's resource portfolio

In terms of structuring the firm's resource portfolio, LSPs' interviews allow to identify possible resources exploited to offer SCF solutions. In this case, the unit of analysis followed is not the single company but the single SCF solution offered. As a matter of fact, different resources could be exploited for different types of SCF solutions offered.

In terms of information resources, LSPs have the value to have full visibility about their customers' flows of products. On the basis of their knowledge, the LSP is the perfect actor of the supply chain to have visibility about quantity of products, state of inventory, positioning of the inventory, as well as flows of these materials. LSPs could also rely on third parties' information, such as banks or financial providers'. This approach concerns mainly information about financial data and credit worthiness of the customer.

In terms of financial resources, LSPs can decide which types of financial resources to use to offer SCF solutions. Some LSPs are mainly using their internal financial resources. This approach is mainly adopted either by strong LSPs with high cash and financial resources or by LSPs with a strong financial profile, that can have access to financial credit at a reasonable cost. Other LSPs are relying on external sources of financing, deciding to not use their personal resources but taking advantage by third parties. As a matter of fact, in some cases LSPs can decide to manage a combination of these two approaches, blending together personal and external resources.

Finally, in terms of collateral, this is strictly related to the SCF solutions that the LSP is offering. Examples of collateral might be fixed assets, inventory or invoices.

Building resources to build relevant capabilities

In terms of building resources to build relevant capabilities, interviews allow to identify common business models of LSPs, created as a combination of different resources differently orchestrated. Moreover, we also used interviews to understand the ROT approach used for the building phase, i.e. stabilizing, enriching, pioneering.

The main models are summarized in Table 1.

Table 1: Resources used to build relevant capabilities

	Extension of product offering	*Collaborator*	*New co creator*	*Independent*
ROT approach	Stabilizing approach	Stabilizing approach	Enriching	Pioneering
Information resource	Information about quantity of product (internal)	Information about inventories status, quantity, quality (internal) Information about financial situation (external)	Information about inventories and flows (internal) Information about financial situation (external)	Information about inventories and flows (internal)
Financial resources	Internal	External	50% internal 50% external	Internal
Collateral	Fixed assets	Inventories	Inventories Account payables and receivables	Inventories Account payables and receivables

Four main combination of resources are identified, as summarized in Table 1, for different purposes.

Some LSPs are mainly using SCF with a stabilizing approach, to make minor additional improvements in existing capabilities. For this reason, these companies rely on internal either informational and financial resources and used as collateral fixed assets. As a matter of fact, these assets are already strongly either controlled or used by the LSP and so it is the natural extension of the current approach, with a stabilizing approach.

Some LSPs are using SCF with a stabilizing approach too but start looking not only at internal resources but also at external ones. In order to manage these solutions, as internal resources they are willing to exploit their informational resources about products and physical flows, mainly to use inventories as collateral. On the other hand, relies on external collaboration for what concerns financial elements, either financial resources to finance the inventories or financial data to assess the financial risk of the solution.

Some LSPs are willing to use SCF with an enriching purpose, keeping skills up to date and trying to enhance their current capabilities. In this case, in the idea of enriching purpose, collateral extends beyond inventories to account payables and receivables. Resources are provided by both the LSP and the third party in terms of both information resources and financial resources. For what concerns information resources, the LSP is providing information about the status of products and materials flows whereas the third party (generally a financial partners) is providing information about the financial risk of the customers. For what concerns the financial resources, both the actors participate in the creation of a new company, respectively with 50% of the expected value.

Some LSPs are willing to use SCF with a pioneering purpose, involving the integration of acquired new resources. In this case, the LSPs is willing to pioneering SCF resources, using not only inventories as collateral but also account payables and receivables. In this case, in order to exploit and gain all possible benefits of this new business model, internal resources are used as much as possible.

Leveraging capabilities to realize competitive advantage

In terms of leveraging capabilities to realize competitive advantage, the four common patterns reported in Table 1 were investigated to understand the purpose of the model in terms of competitive advantage as well as how LSPs could leverage identified capabilities to achieve the mentioned source of competitive advantage.

The main results are summarized in Table 2.

Table 2: Competitive advantage pursued through capabilities

	Extension of product offering	*Collaborator*	*New co creator*	*Independent*
Competitive advantage	Reinforce the relationship with existing customers	Reinforce the relationship with existing customers + offering new solutions through third parties to existing customers	Achieving new costumes through the collaboration	Achieving new customers, entering into a brand-new market
Customers involved	Existing customers		New customers	

Each business model identified has the purpose to look for a different competitive advantage and different benefits for the LSP.

In the case of the extension of product offering, LSPs are mainly independent and offer the financing of fixed assets to enlarge their product offering and to improve services for their customers. Without changing in an extensive way their BMs, they are simply offering those solutions that are closer to the traditional services of an LSP: reinforcing the relationship with existing customers is so the mainly competitive advantage research. In order to achieve this competitive advantage, the LSP should mainly exploit its internal information resource, to illustrate this additional service to customers.

In the case of the collaborator, LSPs are not directly offering any additional SCF instruments yet but are simply collaborating with some financial providers to enhance the adoption for their customers through information sharing and their customers' knowledge. Again, the idea is to extensively change the business models, but to try to use the financial lever to reinforce the relationship with existing customers, moving beyond a good management of materials flows and supporting customers in optimizing also the financial flows. Financial service providers might use these additional data to offer specific SCF solutions, such as reverse factoring or inventory finance, or simply to use additional data to assess the credit worthiness of the specific customers, thereby opening up new financial opportunities or to better identify the interest rate to apply. As a matter of fact, through the partnership the LSP might also enter in contact with some potential new customers presented by the financial actors, but this is less likely. In order to achieve this competitive advantage, the LSP should mainly exploit the collaboration, relying on its internal information resources, to illustrate the value to the third party.

In the case of New-Co creator, LSPs are launching a new company devoted to offering SCF instruments with the collaboration of a financial provider. In this case the competitive advantage is the offering of totally new financial services, through a combination of LSP and financial provider's resources, in terms of both information and financial resources. Examples of SCF solutions offered through this business model might be reverse factoring or inventory finance. In this case, the New-Co works if the two actors blend together their resources and to orchestrate them in a harmonic way, to increase the knowledge about future customers, thereby reducing the financing risks. In this case, the purpose for the LSP is the identification of potential new customers, both for the financial new market but also as leverage for the traditional business.

Finally, in the case of the independent, the LSPs is expanding the offering of services, including also typical SCF instruments such as inventory finance, reverse factoring, etc. This business models exploit internal resources in an independent way, considering both financial and information resources, with the purpose the extend the focus in terms of collateral. This business model could be realized in 2 alternative ways: either the LSP is providing these additional services through the standard company or the LSP is creating a spin-off, totally devoted to financial services. The two models are not really different in terms of resource orchestration, because similar sources of resources are used, but are different in the presentation to customers. In the first case, the same LSP is simply extending the product offering, with the same brand and under the same company; in the second case, the customer is entering in contact with a new company, devoted to management of financial services for customers of the LSP but also beyond.

Conclusions and future developments

This paper has investigated a topic still not deeply explored in the academic literature, the contribution of LSPs for SCF. The paper has the goal to investigate how LSP could offer SCF solutions. To identify LSP business models, the ROT was used as theoretical lens and 29 interviews at the European level with LSPs as empirical basis. Through the analysis, four business models were identified, characterized in terms of financial resources and information resources used as well as in terms of collateral adopted for offering the SCF solutions. Each business model is also characterized in terms of competitive advantage search by the LSP through the model.

Although quite preliminary, results offer contributions to both research and practice. For the former, the paper extends existing literature about SCF, considering the role of a new actor (LSP), deeply investigated in SCM literature but neglected in SCF one so far. Moreover, this paper is a first attempt of use of ROT for SCF: this result has a twofold contribution. From a theoretical perspective, this hints a new potential application area of this theory; from a SCF literature perspective, this sheds additional lights on about potential theoretical lens to use to tackle SCF.

In terms of managerial contribution, the paper provides a classification of existing BMs for LSPs useful for company managers willing to introduce SCF. As a matter of fact, managers have mainly investigated financial providers to SCF solutions, but results of this paper addressed the real value of an additional actors to take into consideration in the decision-making process. Moreover, for managers already operating with LSPs, this paper provides a useful tool to compare different LSPs and select the most appropriate model on the basis of needs and expectations. On the other hand, results of the paper are useful for LSPs managers that are evaluating if introducing SCF into their offer as well: they have a clear view about possible models to adopt, consistently with the research competitive advantage. Finally, this paper gives insights also to financial managers, that might find a new approach to implement some innovative SCF solutions, for example inventory finance, relying on external sources of information to reduce their level of risk.

This paper has also some limitations, that open to opportunities for further research. The paper is based on 29 explorative interviews with LSPs, without taking into considerations other actors of the supply chain. Further research might involve in the empirical analysis also actors of the supply chain (e.g., potential customers) or financial providers involved in the implementation of the business models. Secondly, the four business models are identified through a qualitative survey, without any statistical validation. Future developments might validate through a larger sample the validity of the four business models identified. Thirdly, the four business models are investigated in terms of resources as well as in terms of research competitive advantage, but without any quantification of costs or benefits for single actors: further research might aim at quantifying potential benefits as well as costs for different actors involved.

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