



Outsourcing of logistics operations is, nowadays, a common practice among companies. The concept of Supply Chain Management has greatly evolved to the point of exploiting the significant competitive advantage of companies which core business is logistics services.

The logistics service provider as financial service provider

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ABSTRACT

Outsourcing of logistics operations is, nowadays, a common practice among companies. The concept of Supply Chain Management has greatly evolved to the point of exploiting the significant competitive advantage of companies which core business is logistics services. However, the last 5 to 10 years have modelled a new economic and financial landscape that, through a reduction of access to finance and liquidity, has created stress on companies and consequent pressure towards working capital reduction. Among other outcomes, this has led to the development of Supply Chain Finance (SCF) solutions, which aim at optimising the management of financial flows through collaboration among supply chain partners. Although it might seem straightforward that Logistics Service Providers (LSP) would take the lead in providing inventory-oriented SCF solutions to their customers, evidence of this happening is still scarce. The aim of this paper is to analyse relevant and insightful SCF solutions offered by LSPs in Europe, with a specific focus on the Netherlands. This is a first step towards the mapping of SCF solutions that can be used by different types of LSPs, depending on the characteristics of both the LSPs and the SCF solutions.

Supply Chain Finance is one of the key themes in the Dutch 'KennisDC Logistiek'. This article shows that attention in the field of SCF is shifting from 'traditional' SCF instruments, like Reverse Factoring, towards more multidimensional and innovative SCF instruments.

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Introduction

48 The last 50 years have seen a strong evolution of logistics and supply chain management (SCM) within companies: from a set of product-flow oriented, disconnected, activities to an integrated process managed across echelons and products (Ballou, 2007). SCM underwent a paradigm shift from the execution of cost minimization objectives into businesses' core strategy (Melnik et al., 2009). This evolved landscape led many businesses to seek the strategic outsourcing of logistics activities to external parties, called third-party Logistics Service Providers (LSP), to exploit their significant competitive advantages in managing such operations (Lai, 2004). As a response to this trend, LSPs have greatly changed in the last years, with a shift from traditional warehousing and transportation activities to more complex services (Hertz and Alfredsson, 2003): evolution of traditional services (e.g. secondary assembly, label printing, fleet management or freight forwarding), technology-based services (e.g. EDI linkages, RFID and barcode technologies), information management, integration and sharing, consulting, direct inventory management, demand forecasting and customer relationship management (Klump, 2016; Lai, 2004; Min, 2013). Such transformation affects the way LSPs interact with their customers and other players in the supply chain (Hertz and Alfredsson, 2003), requiring new capabilities and strategies that can assure even higher value creation and competitive advantages for their customers (Prockl et al., 2012). The phenomenon of strategic outsourcing of logistics operations (sometimes addressed as 'contract logistics') is significant: studies value the LSP market at 141 billion dollars in the US in 2011 (Min, 2013) and 876 billion € in Europe in 2014 (Ecorys et al., 2015).

On the other side, the economic and financial difficulties that afflict businesses since 2008 forced corporates to face a series of financial and economic difficulties that strongly increased their risk of bankruptcy. In fact, recent years have seen a considerable reduction in the granting of new loans, with an increase in the cost of corporate borrowing (Ivashina and Scharfstein, 2010). Such collapse of the asset and mortgage-backed markets dried up

liquidity from industries (Cornett et al., 2011). This trends contributed considerably to the need and spread of solutions and programs that optimise the net working capital, such as Supply Chain Finance (SCF) (de Boer et al., 2015; Gelsomino et al., 2016; Lekkakos and Serrano, 2016).

SCF can be defined in many ways: from a pure financial perspective, it is defined as a set of financial arrangements (More and Basu, 2013; Wuttke et al., 2013) focused on optimising accounts payable along the supply chain, with a specific focus on Reverse Factoring, a specific solution by which large creditworthy buyers allow their suppliers to sell approved invoices to financial institutions based on the buyer own credit rating (Dello Iacono et al., 2015; Wuttke et al., 2013). From an SCM point of view, SCF is a way to optimise working capital or fixed assets and, more generally, improve the financial performance of a supply chain, focusing on collaboration among supply chain players rather than on financial products (Gomm, 2010; Hofmann, 2005; Pfohl and Gomm, 2009; Randall and Theodore Farris, 2009). For the purpose of this contribution, SCF can be defined as the optimisation of the flows and allocation of financial resources in a supply chain with the aim to increase value, requiring the collaboration of at least two primary supply chain members, possibly facilitated by external service providers. Benefits of SCF come from a better management of financial flows at the supply chain level. Such better management is translated in reduced cost or need for finance: a valuable framework in this sense is the "SCF cube" (Gomm, 2010; Pfohl and Gomm, 2009), describing the positive impact of SCF in terms of reduction in volume, duration and cost of financing needed. Still within the financial dimension, recognized benefit are the reduced risk of bankruptcy along the SC (Klapper, 2006) and an easier access to liquidity for small-high risk suppliers (Berger et al., 2004; Klapper, 2006; Tanrisever et al., 2012). However, SCF presents additional benefits: it increases visibility on supply chain members, as well as enhancing further information sharing, integration and collaboration (Hofmann and Belin, 2011; Lamoureux and Evans, 2011; Pfohl and Gomm, 2009).

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Despite an initial attention to the role that non-financial institutions, such as LSPs, might have in providing SCF solutions (Hofmann, 2009, 2005; Pfohl and Gomm, 2009), more recent literature has neglected such aspects, focusing most of its effort on bank-led SCF solutions (Lekkakos and Serrano, 2016; Liebl et al., 2016; Wuttke et al., 2016). Non-financial SCF providers, and LSPs specifically, however, are found to be in the correct position to offer SCF solutions, especially when focusing on inventory financing. The topic of financing inventories has received attention in literature, even before the development of the SCF topic (Buzacott and Zhang, 2004; Holdren and Hollingshead, 1999), from a conservative, bank-led perspective. Nevertheless, in recent years authors started to investigate the role that LSPs could play in facilitating or even providing innovative inventory-related SCF solutions (de Goeij et al., 2015), with specific attention to inventory financing constructs (Chen and Cai,

2011; Hofmann, 2009). Despite this initial seminal contributions on the topic, empirical evidence on the role of LSPs in facilitating or offering SCF solutions is still extremely scarce in literature. This paper aims to map SCF solutions for LSPs, thereby taking a first step towards analysing objectives, antecedents and impediments for adoption of these solutions for LSPs.

Objective and Methodology

The objective of this paper is to investigate LSPs offering SCF solutions to their customers or suppliers. This analysis aims at providing a broad understanding of which, why, how and to whom LSPs offer (or do not offer) SCF solutions. The methodology implemented is a multiple-case study composed of several interviews with LSPs the Netherlands. Case study methodology has been chosen as it is the best way to proceed in the early and exploratory phases of investigation (Yin, 2003). Moreover, we selected multiple cases to capture a variety of perceptions and meanings about a complex, innovative and multidisciplinary concept (Dubois and Araujo, 2007), as SCF solutions offered by LSPs. The case study design implemented in this paper includes LSPs who either offer or do not offer SCF solutions. The samples of companies selected present homogeneity in the operations of the LSPs and in their geographical locations, while they present heterogeneity in terms of industry served, size and approach to SCF. Such cases are explorative in nature, and the unit of analysis is the company itself. Data is being collected in 2016 and 2017. Interviews are conducted on site when possible, otherwise by phone. Each interview is conducted by multiple researchers who share their perceptions and impressions, thereby assuring internal validity. A common and standard interview protocol is used to increase reliability. Interview protocol for the first sample includes the following sections: general company description, approach to SCF solutions, internal and external governance and vision and expectations.

Consistently with Gibbert et al. (2008), cases were conducted by paying attention to internal validity, construct validity, external validity, and reliability, as follows:

- to assure internal validity, different bodies of literature (SCM, SCF and information management in organisations) were used to develop a consistent framework of main variables affecting the adoption of SCF solutions;
- to assure construct validity, triangulation of data was performed, by using multiple interviews, secondary data about the company provided by the interviewee or by secondary sources and direct observation.
- to assure external validity, multiple cases have been performed. In particular, multiple cases were performed with LSPs from different industries, operating at different stages of the supply chain.
- finally, to assure reliability, a common protocol was used for performing all the interviews and an online case database has been created.

The sample includes 6 LSPs operating in different industries. As stated above, these case studies have an explorative nature, aimed at gaining insights into the SCF practices implemented, expectations or reasons for not implementing. Customers of the LSP, as well as other involved companies such as financial service providers, were not included in the sample at this stage of the research. The empirical sample is described in table 1.

Table 1 Case studies sample

Case	Main industry of operations	Main logistics operations	Turnover mln. €, 2016	SCF Solution
1	Food and beverages	Forwarding, warehousing	25-50	Inventory finance
2	FMCG	Forwarding, transportation	25-50	Reverse Factoring (accepted buyer offer)
3	Engineering	Forwarding, warehousing	100-150	Fixed asset financing
4	FMCG	4PL, Forwarding, warehousing	50-100	Forms of working capital management
5	Food and beverages	Forwarding, warehousing, multimodal	100-150	Fixed asset financing
6	FMCG, Automotive, Retail	Forwarding, warehousing, transportation	900 - 1250	Reverse Factoring (offering to suppliers)

Financial futures for service logistics

The collected cases show a variety of strategies, structures and models adopted by LSPs to provide financial value-added services to their customers. This section presents the most relevant cases collected among interviews, to provide a clear picture of the most innovative services offered by LSPs.

Inventory financing

Case 1 has implemented a model aimed at financing inventories of customers, as reported in Figure 1. More specifically, the LSP offers such services to exporters outside of Europe operating in the food and beverages market, serving retailers in Europe. Upon reception

of goods in the European warehouse of the LSP, checks are performed on the quality and document accuracy of what has been delivered. Upon confirmation of the correct delivery details, the LSP transfer such information to its partner bank, that in turn transfer funds to the exporter, in the measure of 40% to 75% of the value of the goods delivered. The exact percentage depends on the level of trust and the track record between the LSP and the bank and, on the other side, the exporter. Once the exporter has closed a purchase agreement with a retailer, the goods concerning by the purchase are delivered from the LSP warehouse to the retailer premises. Upon reception of the payment of the full value of the goods by the retailer, the bank transfers the remaining part of the payment to the exporter, less a service fee which is calculated in terms of annual interest rate, thus depending on the length of time the goods have been stored in the LSP warehouse.

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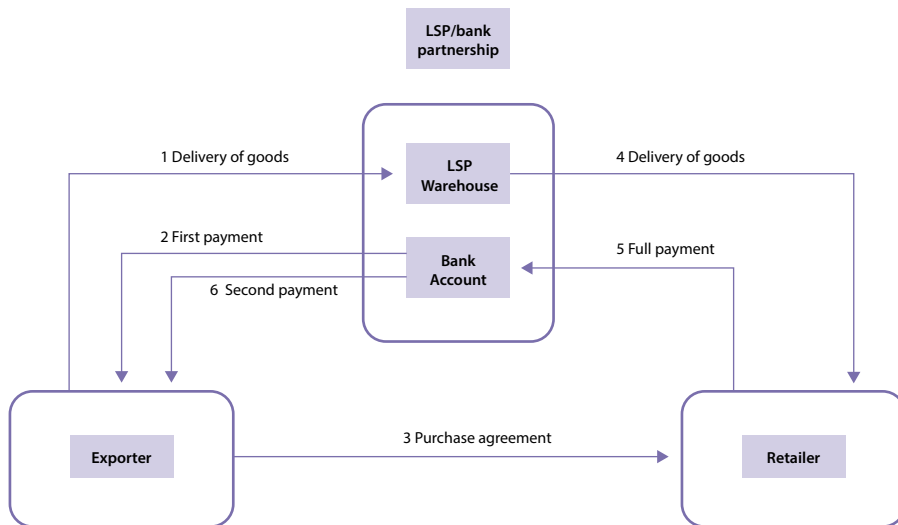


Figure 1 case 1 SCF structure

The structure suggested by the LSP is in line with existing literature on the topic (Chen and Cai, 2011; Hofmann, 2009), even if it is considered to be a “traditional” inventory financing model, since the LSP does not obtain legal ownership of the goods throughout the transaction. The structure presents several risks: price volatility, financial frauds and the default of the exporter when goods are still located within the warehouse. To mitigate risks, all the exporters that want to access the service are required to insure the goods through the insurance service provided by the LSP and the LSP has developed remarketing capabilities that will allow, in case of default, to resell the goods already stored in its warehouse to another exporter. To further mitigate risks, the LSP is currently involved in the implementation of a blockchain-

based platform that can provide increasing reliability regarding the exchanged data.

In inventory finance the LSP itself can be the one fully responsible for providing the pre-financing, or this can be done in collaboration with a bank. If LSPs would do this by themselves they need to have increasingly robust balance sheets to take the strain. More likely is that funding would be provided in partnership with a bank like or together with other financiers such as pension funds or hedge funds, or the capital markets. The LSP's role in a sense then reverts to its traditional core service function, but they will be leveraging the supply chain data that the financiers need for the provision of finance.

Fixed asset financing

SCF solutions, however, are not necessarily limited to working capital benefits. The LSP in case 3, for example, introduced a fixed asset financing structure with a major customer. This allowed for higher operative performance and lower financial risk, while at the same time reduced fixed capital expenditures for the LSP. In this case the customer asked the LSP to do extra volume, but the LSP did not want to buy new trucks for this extra volume due to the low financial rating of the customer. The LSP wanted to avoid a situation wherein they will lose this extra volume while they already invested in extra trucks which they cannot put to use anymore. That's why the customer bought the trucks for the extra volume, while the trucks were physically located on the premises of the LSP. The LSP signed a contract with the customer which stated that he gets the trucks at the end of a contract term of 8 years. If the customer bankrupts within those 8 years, the LSP already gets the trucks earlier. Trucks can only be used by the LSP for that one customer. That is how the customer ensures a higher service level.

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A similar structure, but with inverted parties, has been implemented in case 5. A subcontractor for inland sea transport of the LSP experienced financial difficulties in the late 2000s, leading the LSP to buy the new ship required to renew the current ship-fleet of the subcontractor. The subcontractor operates the ship in relation to transportation done on behalf of the LSP only, within a four-years contract. At the end of the four years, the subcontractor will be able to purchase the ship from the LSP, at its initial price less amortisation quotas. If the subcontractor defaults within the four years, the LSP will keep the ownership of the ship.

Executing payment on behalf of buyer

Case 4 presents a peculiar operating model in its 4PL activities. The 4PL company arranges transportation and other logistic services for their customers by working with many different LSPs. Instead of the customer having to pay all the LSPs separately, the customer only pays the 4PL, and the 4PL takes care of the payment of LSPs. This allows the 4PL company to operate as a true working capital financing party: it modulates payment terms when negotiating with customers, allowing them to deal with payment terms not only to a single com-

pany (the 4PL) but on their entire logistics operations all at once. This also provides the customer with a competitive advantage in terms of reduced costs for administrative process.

LSP offering Reverse Factoring

Reverse Factoring (RF) is an arrangement through which a buyer, with the help of its financier, offers a supplier credit against the credit rating of the buyer for the period of the payment term (Demica, 2007). The bigger the difference in creditworthiness between buyer and supplier, the more a supplier can enjoy lower short-term financing costs. Often a buyer introduces RF together with a payment term extension. After the credit crisis RF became a popular instrument. The majority of companies with revenues of over €1 billion euros has a SCF solution in place, by far the most used solution is RF (PwC & Supply Chain Finance Community, 2016). In recent years also smaller companies started offering RF to their suppliers, also LSPs. Case 6 is an example of an LSP offering RF to suppliers, among them many subcontractors in transportation. They initiated RF and at the same time extended payment terms for working capital benefits. Case 2 is an example of an LSP who accepted an RF offer of one of their buyers. There were only little working capital benefits for this supplier, keeping a good relationship with the buyer was their main reason to accept the offer.

Conclusion

This article provides an overall picture of the role of LSPs in the SCF landscape and of main factors affecting their choice to offer SCF solutions. Starting from the existing literature on value added services and value creation from LSPs (e.g. Prockl et al. 2012; Hertz & Alfredsson 2003; Lai et al. 2004) this is a first step towards providing an exploratory-based framework highlighting main SCF solutions effectively adopted by LSP to provide value added services to customer.

From a practitioner point of view, the article provides a clear understanding of some of the most relevant SCF solutions offered by LSP in Europe. This is especially important considering the market interest towards SCF solutions in the last years; an interest that arguably cannot find its answers in accounts payable-based programmes only. It is crucial for managers to access information on different and innovative SCF solutions that can provide value to their business, being them LSPs or corporates. In this sense, this article highlights how a new “playing field” lies ahead of logistics providers that are willing to extend the scope of their business to financial constructs, leveraging their knowledge of markets and their visibility on transactions and inventory status.

From an academic point of view, the article contributes to literature on SCF, providing a better understanding of the LSP role in this field. Most of existing literature on the topic of

SCF is focused on bank-related solutions (among which most of the attention is devoted to Reverse Factoring). However, seminal contributions on the topic highlights how SCF is actually broader, in terms of solutions, actors, levers and, more in general, scope (Hofmann, 2005; Pfohl and Gomm, 2009; Randall and Theodore Farris, 2009). Focusing on the role of LSP with an empirically based contribution serves the purpose of extending current literature investigating the overlooked topic of LSP and SCF, while filling the existing gap of empirically grounded studies. Moreover, the article provides a first contribution towards connecting existing literature on logistics outsourcing and value added strategy by LSPs with financial literature concerning SCF. By highlighting the applicability of SCF solutions as value added strategy by LSP, this article advocates a new joint research effort that merges those two existing field, developing standard models and investigation of logistics-finance value added strategies. Hopefully future research efforts will cast a light on these overlapping, promising, domains.

Moreover, and in conclusion, this research is part of a pan-European research project involving several countries that aims at cross-compare the adoption of SCF solutions among LSP in Europe. Through the cross-country comparison we aim at providing a theoretical framework which can cast a light on the main factors affecting the adoption of such solutions, including supply chain characteristics, industry, product and information flows, collaboration among primary and secondary members. Ultimately, the research aims at fostering adoption of SCF solutions offered by LSPs, complementing existing theory and progressing theoretical and empirical-based research on this interesting and challenging topic.

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