Logistics service providers (LSPs) can create a more strategic position in supply chains for themselves or increase margins, by offering or supporting financial instruments.

The development process of financial services offered by logistics service providers

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SUMMARY

Logistics service providers (LSPs) can create a more strategic position in supply chains for themselves or increase margins, by offering or supporting financial instruments. There is a scarcity of literature in Supply Chain Finance (SCF) on how financial instruments are developed before they are adopted, and on the LSP perspective. Via exploratory research using case studies we aim to give insights on how financial services are developed by LSPs, and what the enablers and inhibitors are in different phases of development.

Link to Knowledge Distribution Centre (KDC)

Supply Chain Finance (SCF) is one of the core subjects within the Knowledge Distribution Centre for logistics. Windesheim is working on SCF solutions for suppliers and buyers (both SMEs and large companies), logistics service providers and financial service providers. Whereas a substantial amount of research has been done on post-shipment SCF, especially on the role of the buyer in the adoption phase, this paper highlights several new perspectives relevant for the KDC and the Topsector Logistics. This paper focuses mainly on SCF solutions in the pre-shipment or in-transit phase, meaning before shipment or during shipment. Furthermore, it focuses on the perspective of LSPs, and on the development phase instead of the adoption phase of SCF solutions.

Introduction

LSPs have significantly changed in the last decades. The shift of manufacturing and industrial buyers towards more and more outsourcing of non-strategic functions has driven LSPs towards a more strategic role within modern supply chains (Ballou, 2007). This is mostly noted in the introduction and development of more and more complex figures among companies offering logistics services, starting with the so-called 3PL (third-party logistics providers), 4PL (fourth-party) and even 5PL (fifth-party). Large buyers look for more and more possibilities to outsource logistics activities (so-called contract logistics), to the point that nowadays is not only the logistic processes that are outsourced, but most of the activities that are traditionally categorized under supply chain management (SCM) (Lai, 2004).

Despite such a strong development of the industry, logistics services are still characterized by very low margins, which increase the relevance of identify and develop new services that might meet their customers' increasingly complex needs, and at the same time improve the overall profitability of the logistics business. It is in this framework of industrial development that LSPs have started to develop financial services as part of their offer. Large players, such as DHL, SwissPost and UPS are all offering different types of financial arrangements to customers, within the framework of what literature calls 'Supply Chain Finance' (SCF). Most notably, these actors offer the so-called 'inventory financing' (IF), a type of financial arrangements in which (in its more innovative interpretation), an LSP takes the role of financier for the flow of inventories between a buyer and supplier, for which it is already offering traditional logistics services, by obtaining ownership of the good flow from the supplier and returning it to the buyer after the logistics operations have been completed (Chen and Cai, 2011; Hofmann, 2009; Li and Chen, 2018). The increased visibility on the flow of goods allows LSPs to reduce their risk in providing financial solutions with respect to a more traditional financial player (Hofmann, 2009). Some of the LSPs involved in this offer IF or other SCF solutions through some form of collaboration with a traditional player form the financing industry (Moretto et al., 2018).

The involvement of LSPs in developing new financial services is of extreme interest for both practice and academia. From a practical perspective, entering the financing industry can extend the LSPs service portfolio, increasing their competitiveness. However, such actors are likely new to this field, and insights into the effective development of new financial services can aid them in developing their own strategy.
From an academic perspective, such field provides the unique ad unexplored opportunity of investigating the development of new services from a cross-industrial perspective, that is, with an actor that faces the issues of developing a service that lies outside of the boundaries of its 'original' industry. The most recent rumors about difficulties of LSPs in developing IF can only confirm the relevance of such a topic: although literature is clear on the benefit of LSPs offering SCF services, both for themselves, their customers and the SCF industry as a whole, the process through which LSPs can effectively develop those services is far from clear. Whether traditional new service development perspectives apply to cross-industry context is far from being understood, and the enablers and inhibitors that might allow an LSP to cross such boundaries are surely of great interest.

It is for this reason that this paper has as objective the investigation of LSPs that are in the process of developing SCF services for their customers. This exploratory research setting will investigate two cases and identify enablers and inhibitors that might limit its effective development.

Literature review

The LSP perspective in SCF

In papers about SCF mostly the perspective of the large buyer is taken who is usually the focal company in the supply chain (e.g. Wuttke et al., 2013; Caniato et al., 2016; Wandfluh et al., 2016). Also, the perspective of the financial service provider, mostly a bank, is often taken (e.g. Silvestro & Lustrato, 2014; Martin & Hofmann, 2017; Song et al., 2018). Recently also the supplier perspective gained attention (e.g. Liebl et al., 2016; Lekkakos & Serrano, 2016; Martin & Hofmann, 2018).

Some initial contributions in the field of SCF gave attention to the role that LSPs can take in providing SCF solutions (Hofmann, 2005, 2009; Pfohl and Gomm, 2009). However, more recent literature has neglected the role of LSPs by focusing most of its effort on one specific instrument, which is Reverse Factoring, with a buyer-supplier-FSP focus (Lekkakos and Serrano, 2016; Liebl et al., 2016; Wuttke et al., 2013). LSPs, 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), however, this was from a bank-led perspective. Hofmann (2009) and Chen & Cai

(2011) investigated the role that LSPs could play in facilitating or even providing innovative inventory-related SCF solutions, with specific attention to inventory financing constructs. Furthermore, there is some attention in literature for the role of LSPs in fixed asset financing (Gelsomino et al., 2017) and offering administrative services like freight payment services (Hofmann, 2005; Wetzel & Hofmann, 2018). Despite the initial seminal contributions on the topic, and some recent endeavors, empirical evidence on the role of LSPs in facilitating or offering SCF solutions is still extremely scarce in literature.

The development phase of financial instruments

There is an increasing amount of papers in SCF on the adoption of financial instruments (e.g. Wuttke et al., 2013; Liebl et al., 2016, Wuttke et al., 2016). For example, Wuttke et al. (2013) use the innovation adoption stage model of Rogers (2003), wherein an initiation and an implementation phase are described, in the context of adoption of RF. However, there is a scarcity of literature on how these instruments are developed before they are initiated and how involved actors collaborate in these stages. Research on this pre-adoption phase exists to a limited extent for buyers (for example Wuttke et al., 2013), and for suppliers (for example De Goeij et al., 2016). This often results in an overview of antecedents, objectives and/or impediments of financial instruments, which give buyers and suppliers insights into the feasibility of actual adoption. However, they do not give much insights in the steps taken by different actors in developing the financial instrument.

The perspective of LSPs offering financial services in the supply chain did not receive much attention yet. There is a limited amount of LSPs of whom we already know they offer financial services, for example DHL, APL Logistics and Swiss Post (Hofmann, 2009). Because there is a certain level of complexity to offering financial services like inventory financing and little standardized knowledge LSPs who are interested in financial services can't directly start implementing. For them it would be insightful to see how other LSPs develop these financial services before implementation.

New service development

New service development (NSD) is the 'overall process of developing new service offerings' (Johnson et al., 2000). It is about all of the stages from the idea phase in the start to the actual launch (Goldstein et al., 2002). Johnson et al. (2000) recognize four stages in new service development, which can be seen in figure 1.

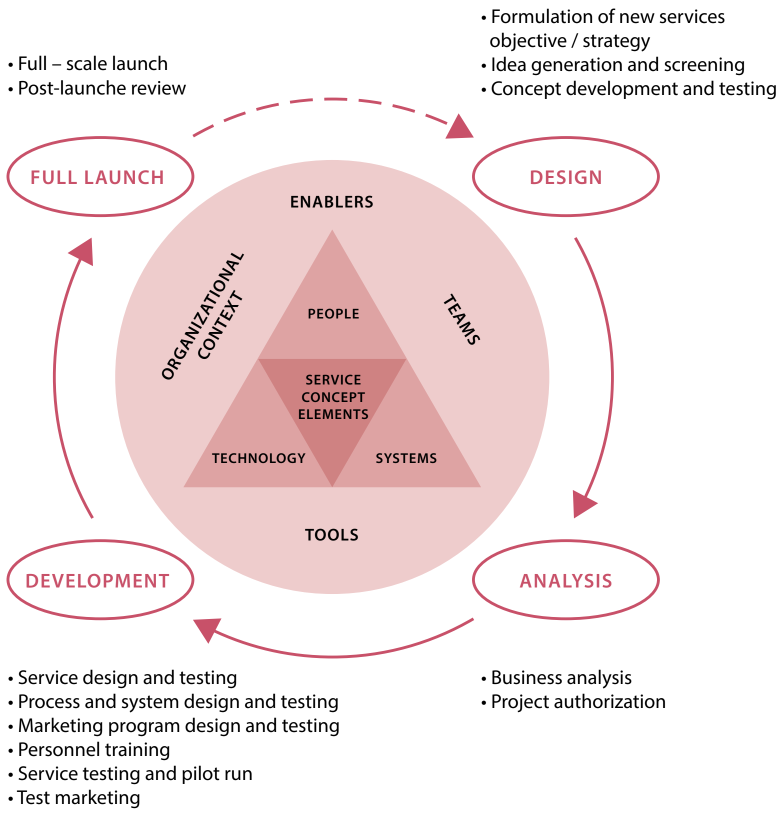

Figure 1 New Service Development Process Cycle
Adapted from Johnson (2000)

The process cycle in figure 1 shows a cyclic succession of activities, suggesting a typical NSD process is iterative and non-lineair. Johnson et al. (2000) mention the design and analysis stage are dedicated to planning, when internal resources, market viability and capabilities have to be considered. The development and full launch stage are referred to as execution phases, with attention for design and testing the service, personnel training and pilots. In the middle of the picture broad categories for enablers of successful NSD can be seen, referring to people, technology and systems.

Frequently mentioned enablers and inhibitors for NSD are related to:

- Organizational factors, like senior management involvement, a clear understanding of involved employees and collaboration between involved departments
- Sufficient resource allocation for NSD, in terms of time, money and people (Edgett, 1994)
- Formalization or structuring of NSD activities, for example by having a key person in the organization responsible for a new service or having a structured idea generation process in place.

- Market acuity. This refers to 'the firm's ability to see the competitive environment clearly and to anticipate and respond to customers' evolving needs and wants' (Menor & Roth, 2008, p. 267)
- Business/financial analysis. This analysis should be realistic and there should be a clear understanding of the objectives before the analysis is done (Edgett, 1994)
- IT experience. IT experience refers to 'the use of information technology for facilitating or improving inter- and intra-organizational coordination of activities and information processing in the NSD process' (Menor and Roth 2006, p.829).
- Co-design. Involving the customer or other parties in developing the service.

The role of these enablers and inhibitors differs in different stages of NSD. NSD theory seems to be fitting financial services well, since financial services are by far the most frequent covered types of services in NSD literature (Papastathopoulou & Hultink, 2012).

Objective and Methodology

The objective of this paper is to investigate the enablers and inhibitors of LSPs in different stages of the development process of financial services. We aim to include both LSPs who already fully launched a financial service and LSPs who are still in the design, analysis or development phase according to the NSD process phases shown in figure 1. Given the overall objective of the paper the following Research Question (RQ) can be devised. It aims at addressing the most relevant literature gap in this topic, providing empirical evidence on the practical development of financial services offered by LSPs:

RQ: What are the enablers and inhibitors in different phases of development of financial services by logistics service providers?

The methodology implemented is a multiple-case study composed of interviews with LSPs in 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). We select multiple cases to capture a variety of perceptions and meanings about a complex, innovative and multidisciplinary topic (Dubois and Araujo, 2007), as financial instruments offered by LSPs. The research is in a preliminary stage, until now 2 cases have been investigated. The case study design implemented in this paper includes 2 LSPs who are in different development phases. The LSPs selected in this preliminary stage present homogeneity in their operations and in their geographical locations, while they present heterogeneity in terms of size and approach to SCF. Such cases are explorative in nature, and the unit of analysis is the company itself. Data is collected in 2019. Each interview is analyzed by multiple researchers who share their perceptions and impressions, thereby assuring internal validity. A common and standard interview protocol is used to increase reliability. The interview protocol for the first sample includes the following sections: general company description and approach to financial instruments. After that the same questions, related to internal organization, process focus/resource allocation, market acuity, external collaboration/co-design and IT, are repeated for different development phases to see which enablers and inhibitors are the most relevant in different phases.

Consistently with Gibbert et al. (2008), cases are 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 are 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 interviews and an online case database has been created

In this preliminary stage of the research 2 LSPs have been interviewed. In table 1 the case study sample can be seen.

Table 1 Case Study Sample

	Case 1	**Case 2**
Main industry of operations	Food and beverage	Food and beverage
Main logistics operations	Forwarding, Warehousing	Forwarding, Warehousing, Customs Services
Investigated financial service	Inventory Financing	Inventory Financing
Stage of development	Design	Development

Preliminary results

Case 1: Inventory Financing - design phase

Case 1 (LSP1) is an LSP which tried to develop inventory financing in collaboration with a bank, but is currently stuck in the design phase. They don't want to finance inventories themselves, but would like to play a facilitating role by providing the bank with the right information to finance inventories. The most important reason why LSP1 is interested in inventory financing is to get a fee from this which increases their margin, which also fits the general strategy of the company. Also for them it's important to deliver extra value in this way to their customers to strengthen relations, their customer must benefit from this in the form of working capital benefits. Idea generation and screening took place on a high management level, with both the CFO and CEO of LSP1 involved, to actively explore the opportunities. Some resources have been allocated in exploring the idea further, first a meeting between experts and management of LSP1 took place, after which an intern was hired to look at opportunities for financial instruments like inventory financing. There was previous experience inside the company with Reverse Factoring, because this was offered to LSP1 by multiple buyers. This experience helped them in thinking about offering financial instruments to supply chain partners themselves.

LSP1 mentions not spending time yet on evaluating the market potential of inventory financing for them. The company doesn't have a clear idea yet about which customers would be interested in the service, which is why they didn't involve customers yet. According to LSP 1 they need more work on developing a business case first:

> *'What we want before going to a client is a more concrete business case, what's the benefit for us, and what can we give to our customers with inventory finance.'*

Also, LSP1 mentions there is not much contact yet with banks. LSP1 is convinced that with the information they can provide about the inventories of their customers, they can deliver value for the bank in the form of information which makes banks able to make a better estimation of risks involved in inventory financing. However, they do not have a clear idea yet if banks are really willing to develop these types of services with them.

> *'We need a better idea about the role of the bank. Is the bank willing to actually lower costs when they have more or better information? If we know more about this we can go to our customers with a better idea or proposal.'*

Case 2: Inventory financing - development phase

LSP2, just like LSP1, tried to develop inventory financing. The main reason for wanting an inventory financing solution is to provide value for customers, in the form of working capital benefits, and in this way strengthen customer relationships.

In the design phase there was involvement of the CEO and the financial director from the start. The company had previous experience with another financial service which is escrow (in escrow LSP2 acts as a third person who makes transactions between suppliers and buyers safer by making sure both parties live up to their obligations). They see inventory financing as a similar service, and mention that having positive experiences with escrow was a clear driver of starting to develop inventory financing. Another success factor was finding a customer very soon in the development process, for whom inventory financing would be suitable. There was a collaborative approach with this customer from the start. They did not check what the market potential for inventory financing could be, not in the design phase but also not in any of the following phases.

After the design phase a process and system analysis was made to map the steps in inventory finance and whether the IT systems of LSP2 could handle this. Resources were allocated to make this analysis, and to have a supply chain engineer from within the company assigned to do a check on this, and in a more concrete way check which adaptations in (IT) processes and systems should be made. In this stage the company got a government grant to develop inventory financing with their customer. After this analysis phase the CEO gave the authorization to go ahead with the development.

In the development phase resources were made available to make the necessary IT adaptations. A pilot with the customer went live which according to LSP2 was a success. A not too complex administrative design was seen as a success factor. In this phase, the company also mentioned to benefit from their experience with escrow.

Table 2 Enablers and inhibitors in different phases

		Enablers	Inhibitors
Design	LSP1	• Higher management involvement • Clear idea about objective with the new service • Previous experience with similar financial service	No evaluation of market potential • No collaboration/co-design with customers or banks yet • No clear business case yet to show to potential customers • Limited allocation of resources (time and money)
	LSP2	• Higher management involvement • Experience with similar financial service • Finding suitable customer soon / co-design	• No evaluation of market potential
Analysis	LSP2	• Allocation of resources (people) • Government grant for development • Thorough process analysis • Internal collaboration finance with operations	• No evaluation of market potential
Development	LSP2	• Allocation of resources (IT investments) • Not too complex administrative design	• No evaluation of market potential
Full-launch	LSP2		• Not finding other customers who want inv. financing • Non-cooperative attitude of bank • Attention needed for training people • Resources needed for smoothening IT processes

After a successful pilot, wherein a small volume of inventory of a customer was financed by LSP2 without the involvement of a bank, the new service development has been put 'on hold'.

LSP2 mentions that if they wanted to scale up the solution after the pilot, they have to include a bank, and not finance inventories themselves but take the role of information provider. LSP2 dedicated an internship to this task, but didn't succeed yet. They mention that collaboration with the bank is the most important inhibitor for further development:

> *'The bank has 'cold feet' and is not cooperative in thinking about collaborating with logistics service providers in inventory financing'*

Furthermore, they mentioned that they didn't spend much time on figuring out which other customers, besides the customer involved in the pilot, would be interested in inventory financing. Also, they see training of employees and smoothening of IT processes to make administrative changes possible as necessary steps which has not been taken yet to further develop inventory financing.

Discussion

The preliminary results show that there is no standardized way for developing financial services like inventory financing for LSPs yet. For both LSPs the development of the financial service is currently 'on hold', because of the inhibitors they face in the beginning of their development process (LSP 1), but also the inhibitors faced after trying a full launch (LSP 2). With this research results we gave practical insights into success and fail factors in the development of financial services by LSPs. In this way LSPs who are thinking about offering (more or other) financial services themselves can be better informed and prepared.
Both LSPs mention higher management involvement and previous experience with a similar financial service as enablers in the design phase. The main reason why LSP 1's financial service is 'on hold' already in the design phase, and why LSP 2 was more successful in these early phases is that LSP 1 did not find a customer yet who needs this service and whom to collaborate with to create the service, while LSP2 did. This customer of LSP2 was actively involved in the design of the financial service.

For both LSPs a reason why inventory finance is currently 'on hold' is because they didn't do a thorough analysis of market potential yet. LSP 2 did succeed to do a successful pilot, mainly because of finding a customer early and having experience with a similar financial service, but in later development stages also because of a thorough process analysis, substantial allocation of resources and good internal collaboration.
Important inhibitors for both LSPs are difficulties in the collaboration with the bank. For LSP2 this was the main reason why, after a successful pilot, they didn't succeed (yet) in a successful full launch. A possible solution might be for multiple LSPs who are all interested in inventory financing to go to the bank together, so that the volume involved for the bank is larger, and there are economies of scale in the development process of the bank.

With this empirical research we aim to contribute to filling in the research gap in SCF literature about the LSP perspective. By building on both seminal work – e.g. (Lekkakos and Serrano, 2016; Santos and Escanciano, 2002; Van Der Vliet et al., 2015) – we provide further findings on the perspective of LSPs in SCF. Furthermore, we aim to contribute to filling in the research gap in SCF about the development phase of financial instruments, by focusing on this pre-adoption phase instead of the adoption phase itself. By using NSD literature we provide possibly valuable insights for the relatively new field of SCF, wherein new financial instruments are still being developed. At last, our research gives insights into new forms collaboration between different types of service providers, both financial and logistics service providers.

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