

# **SUPPLY CHAIN FINANCE**

*A Buyer-Centric Supplier Payables Financing Initiative*

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Lund, 2015



## Acknowledgment

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*Martin Jemdahl*

## Abstract

With an increased importance of working capital management and supply chain risks, supply chain finance has gained an increasing interest from organizations across the world. A buyer-centric supply chain finance solution can create a 'win-win' situation for buyers and suppliers, by allowing buyers to extend payment terms and suppliers to get payments in advance. This allows both buyers and suppliers to free working capital, and potentially provides financing at favorable rate for suppliers.

It is shown that supply chain finance can increase the economic value added by buying companies adopting supply chain finance, illustrated by the EVA measurement. Supply chain finance is by no means a 'fit-all' solution that enables every firm to release working capital with low costs and few risks. However, for companies with adequate supplier bases, supply chain finance can be a relative 'simple' way of improving working capital, releasing cash and decrease supply chain risks.

For a successful supply chain finance initiative, three crucial critical supply chain finance project factors have been identified, namely: (1) The right banking and platform provider partner(s); (2) Internal sponsorship and top-management support; and (3) Degree of automation and order-to-pay process alignment.

It is difficult to find generic and objective criteria to tell whether supply chain finance is suitable for a focal firm. Differences in motivation, numerous potential benefits, differences in need for process changes, and the difficulty with defining supplier relations makes every SCF case different. Whether SCF is suitable for a buying firm is heavily dependent on their specific situation, with the most obvious factors being the credit rating in relation to suppliers (making credit arbitrage plausible) and that supplier spend is substantial enough and reoccurring (to yield a large pay-off from increased terms).

This thesis provides a framework for a supply chain finance project. The framework suggested divide a supply chain finance project into three phases: *Initiation, Evaluation and Action*. The initiation phase highlight the importance of a thoughtful and relevant motivation. In the evaluation phase a thorough pre-study is recommended and the relevant aspects that should be considered and analyzed before making a supply chain finance decision are elaborates on. Furthermore, the strategy for the supply chain finance initiative should be defined at this stage. The last phase, action, concern the implementation and supply chain finance program management.

The purpose of the framework is to act as a guideline, and not to be followed exactly. Ultimately, the focal firm need to evaluate its expected benefits with the expected costs and risk, in order to make a supply chain finance decision.

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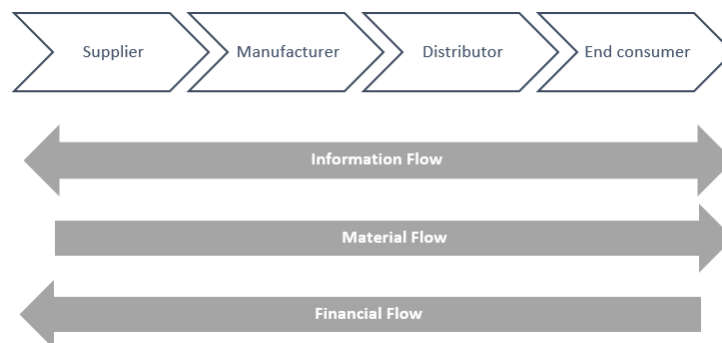
# 1 Introduction

*The chapter provides the reader with an understanding of the project and context. The chapter starts with a general introduction of financial issues in a supply chain context and is followed by a problem description and delimitations which leads to a purpose formulation for the project together with defined research questions. At the end of the introduction, an overview of the thesis structure is presented.*

## 1.1 Background

In the past decades, there has been a distinct shift in what is vertically integrated into corporations. The – arguably – largest shift is outsourcing of manufacturing to contractors, allowing firms to focus on their core competences and leverage other firms' competitive advantages in production. As a result, firms face increased reliance on collaborate partnership to ensure demand is met and acceptable quality. In general, the focus in supply chain management has been on traditional intra-firm logistic functions such as quality control, transportation, warehousing, and inventory control. However, given the large amount of capital that is moving between the firms, there is potential to widen the scope on how firms can benefit by collaborate measures. One of these areas is financial management within the supply chain.

A supply chain is generally considered to be a network of external and internal partners that supply material, manufactures products and parts, transports goods and material, assembles, provide services (such as warehousing), and distributes products to end customers (Mentzer, et al. 2001). It can be defined as the alignment of firms which are part in the making of products or services and bringing them to the market. Reviewing literature on Supply Chain Management (SCM), three distinct categories for the flows along the supply chain are evident: Materials and services, Information, and Financial (See figure 1). The financial flow of monetary resources is generally reversed from the flow of goods and services.



*Figure 1 – Supply chain flows (adopted from Hofmann & Belin, 2011)*

In the SCM field, there is a clear need of addressing financial issues related to the flow of goods. The financial flow along the chain effects cash flow for up-stream and down-stream players in the supply chain. The financial flows have direct impact on working capital management and business performance.

Hofmann (2005) presents a holistic view of the financial supply chain (figure 2), emphasizing that operating and financial activities are interdependent and closely connected. Only considering operational or financial activities alone is sub-optimal, as there are benefits in collaboration and alignment between them. Hofmann emphasis that even when considering institutions, financial functions and instrument of supply chains in collaboration, SCF is still part of a more complex system.



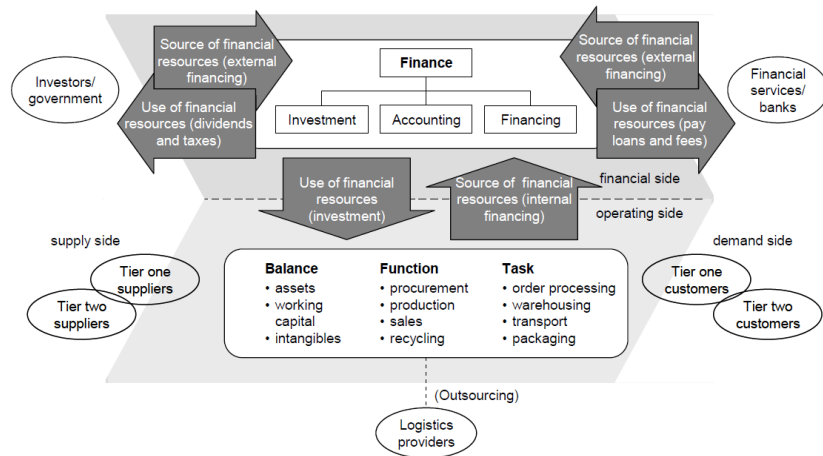


Figure 2 – Supply chain and finance (Hofmann 2005)

Hofmann and Belin (2011) highlight the importance of including the management of information across the supply chain into SCF. Documents, data and other information, such as Purchase Orders (POs), invoices, and payment approvals support the financial and material flows along the supply chain and are essential for functioning financial and operational activities.

The ideas of financial and operating activities in the supply chain can be extended further by defining two separate, but heavily interconnected, supply chains (EBA, 2014). The physical supply chain (PSC) and the financial supply chain (FSC). Events in the FSC are generally driven by triggers in the PSC. The PSC includes information, activities, people, organizations and resources affecting the creation and transfer of a product or service from the supplier to the buyer. Activities involves the value added operations that create finished products from raw materials and the PSC is the underlying economic functions creating product value by providing the right product at the right location in adequate time. Thus, financial activities are necessary to compensate the different values added, and as a result, the FSC must support the PSC activities. FSC is the management and transactions that facilitates purchase, sales, and payment of products and services. It includes contractual frameworks such as general purchase agreements, distribution of POs and invoices, the matching of goods, POs and invoices etc. The general flow can be seen in Figure 3, and the most common financing points related to it.

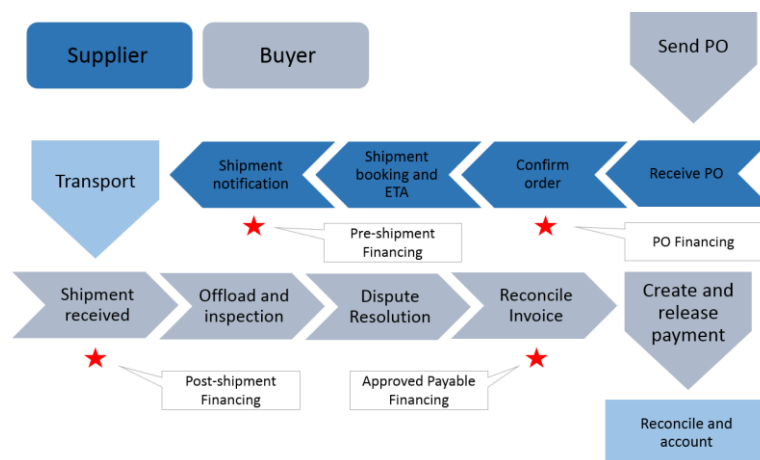


Figure 3 – General supply chain flow and the most common invoice approval points

Gomm (2010) suggests three main fields in SCF, order cycle management, working capital management, and fixed asset financing where the first two are discussed throughout the thesis. Order cycle management contains all activities related to purchase orders, invoicing, and payment processes and is heavily dependent on IT systems. Working capital management is the efforts to reduced fixed capital, for example in inventories, receivables, and payables.

The SCF concepts discussed above can be seen as a general definition for SCF. In practice, specific solutions are utilized to adopt financial approaches to the supply chain. One of the more common approaches is a buyer-centric suppliers payables financing solution, which is often referred to as Supply Chain Finance (SCF) in the industry. This is an invoice settlement solution functioning as factoring in reverse. The idea is to utilize a buyer's financial strength relative to suppliers', as is it common that supply chain actor have different credit ratings, access to credit and cost for financing.

Different credit ratings and costs of capital in the supply chain is an issue that has been known for long. There has been many ideas on how this can be leveraged to share profits from a collaboration. A buyer-centric SCF initiative is a straight forward and intuitive solution, which can be easy to introduce into a competitive setting, without transfer of profits based on theoretical findings and complex agreements. With the financial institution as a partner, it is generally viewed as a simple way of arranging access to credit will transferring the risk for the bank onto the buyer. The SCF market developed in the early 1990s, but SCF was not widely recognized until after the economic crisis 2008 (McKinsey, 2015). Initially large corporations started to implement SCF as it required a large amount of spend to pay off. Today, technological development has made SCF possible for smaller organizations and SCF offerings are more standardized, reducing costs. Simultaneously, the range of SCF offerings is broader, making it attractive to a larger set of corporations.

## 1.2 Problem description

Within a supply chain involving more than one company, there is dilemma between different supply chain actors working to obtaining the same type of financial improvement (Hofmann and Kotzab, 2010). For example, extending payment terms transfers cost of capital and risk to other actors in the supply chain. While the buyer may experience lower credit risk, the supplier needs additional financing to cover the lengthened period without payment for their delivered goods and services. In situations where suppliers have restricted access to short-terms financing, the shifting costs can lead to serious consequences for the supplier and the buying company. Less stable suppliers result in increased supplier base risk as suppliers can be forced to delay their purchasing, cut back on inventories and hold back on service levels and quality processes (Hofmann and Kotzab, 2010). Eventually, increased costs and reduced quality for the suppliers will likely be included in the buying firm's cost for purchased goods.

There is a general trend where payments from customers takes longer and ties up capital in receivables. At the same time demand for short lead times and high service levels ties up capital in inventories. Increasing global competition create price pressure, lower demand and decreased gross margins in many industries. For firms to stay competitive and profitable, there is a need for investments in new innovative products and increased efficiency. As a result, firms are looking to find capital internally and trying to understand how the physical supply chain is impacting cash flow and working capital management.

Even well-managed firms are forced to focus on effective working capital management (PwC, 2009), and in a survey conducted by Aberdeen Group, over 70 % of respondents expressed that their companies consider working capital optimization as a high priority (Aberdeen Group, 2008). At the same time, Supply Chain Risk Management has emerged as the second largest challenge for supply

chain executive (IBM, 2010). Thus, there is a simultaneous need for sustainable business process and a stable supply base that has led to a rising interest in supplier financing solutions (PwC, 2009). Effective working capital management needs to be embedded with sustainable processes in order to achieve financial improvements while ensuring that related risks are minimized across the supply base.

According to McKinsey (2015) payables in SCF programs has grown with 20 percent per year since 2010 and is expected to grow by 15 percent per year the next five years. At the same time, SCF providers see a growing interest from SMEs with many implementing a SCF solution.

The increasing demand in SCF means increased need for corporations to analyze if and how a SCF fit their business. SCF is a broad field, including as the name suggests, the supply chain dimension as well as a financial dimension. This is often two areas within organizations that are separated from each other, making a SCF evaluation difficult to approach.

### 1.3 Delimitation

In contrast to the academic literature, financial institutions, industry practitioners and consultant firms predominantly refer to SCF as the narrow definition presented by Templar et al. (2012) (See section 3.1). As the thesis is conducted in collaboration with Axis Communications, who are looking into a buyer centric supplier financing approach, the term SCF generally refers to the narrow definition throughout the rest of this paper.

There are other possibilities of collaborate financing solutions within the supply chain, but these are not considered in this study. Innovations such as Dynamic Discounting are often more complex than an initiative with a single provider. The reason is the need for simplicity and a program that to a large extent runs itself. With dynamic discounting for example, there is a need to constantly alter the discount rates, which takes up resources. Furthermore, the risk of suppliers viewing dynamic discounting as a way of squeezing them on their liquidity need in order to get cash discounts is considered a large disadvantage. There would be another dimension for disputes, and for a medium sized company with a low experience from financing initiatives as Axis, such solutions are often too complex to gain approval from management.

Thus, the thesis focus on the first natural step in introducing an innovative financing solution within the supply chain.

### 1.4 Purpose

SCF is commonly described as a 'win-win' solution for the focal company and suppliers (see for example ACCA (2014) and Hofmann & Belin (2011)). It allows the buyer and its suppliers to reduce tied up working capital which can creates substantial benefits for all involved.

For a financially stable buyer, a buyer-centric supply chain finance initiative can enable it to leverage its financial position and reach efficiencies in cash flows and working capital management while also cultivating supplier relations by offer similar benefits to them. Released working capital allows for more financial room to manoeuver and decrease the reliance on external financing for operational activities and investments.

Working capital management (WCM) is a central component in corporate strategies to create shareholder value (Shin and Soenen, 1998). It can have a significant impact on both the liquidity and the bottom line for a company managing working capital efficiently. WCM, as suggested by the definition of WC, involve managing the relationship between a company's short-term assets and liabilities. The objective is to ensure ability to continue the ongoing business and operations with

adequate cash flow satisfying maturing short-term debt and upcoming operational expenses. Thus, WCM can be summarized as management of short term financing requirements in a company. Although WCM's importance is clear, McKinsey (2014) highlights that it is often undermanaged despite improving WC performance generates value-creating opportunities as well as insights that can improve other business aspects.

Given WCM's aim (amongst other) of reducing tied up capital and optimizing advanced payments and deadlines for payments, by refining interfaces between information and material flows, it is obvious that SCF can play a vital part in improving a company's WCM.

The thesis is expected to provide insights on relevant aspects for a company considering a buyer centric SCF solution. Today, the knowledge general knowledge of the process evaluating whether SCF can be suitable for a firm limited; the thesis will shed light and give insight on SCF's potential and a buying firms SCF initiative's process. The thesis contributes with insights on both quantitative effects on key financial metrics and value creation, and qualitative implications. Moreover, the work will form the basis for a decision on whether Axis should implement a SCF program, and if so, provide them with guidelines on implementation and program management.

## 1.5 Research Questions

### *Research Question One (RQ1)*

For a firm interested in SCF, a natural first question is 'what is the relevance of SCF for us?'. Reviewing literature and reports regarding SCF, many list potential benefits without a further explanation or elaboration on the benefits implication for the organization. A few academic researcher examine specific benefits in more detail. Thus, there should be interest in a holistic approach on the relevance of SCF, tying together benefits and its implications for the focal firm in focus. Thus, the first research questions is formulated as:

**RQ1** - What is the relevance of SCF for a buying firm

### *Research Question Two (RQ2)*

With the growing interest in financial aspects in the supply chain in general and buyer-centric payables solution (SCF) getting more attention, the question 'what factors are essential for a successful SCF initiative' is obvious. Belassi and Tukul (1996) argue that many of the general success factors presented in literature and various lists does not relate to specific projects and initiatives, and are therefore not (necessarily) the most adequate considerations to affect the outcome specific projects in practice. Furthermore, for specific projects, critical aspects might not be listed in the general literature. Thus, it is of interest to examine general critical success factors and specific SCF success factors in literature, as well as empirical data, in order to suggest the most important critical success factors. The second research question is formulated as:

**RQ2** - What are the Critical Success Factors for SCF

### *Research Question Three (RQ3)*

For a firm interested in SCF, the process from the insight that SCF could be beneficial for a buying firm until a live program, is crucial. The firm need to evaluate SCF in order to make a business decision, conduct a successful implementation, and ensure adequate project management, in order for SCF to function. The third research question is formulated as:

**RQ3** – What is a rational SCF project process and lessons learned on;

- a) What aspects need consideration before implementation
- b) How can these aspects be analyzed
- c) What are some general guidelines for implementation and program management

## 1.6 Target Audience

First and foremost the target of the thesis is Axis. The result is the foundation for their SCF decisions and of great interest for their overall business. Secondly, the thesis target organizations that considering a SCF solution. The thesis should also be of interest to supply chain and finance practitioners without knowledge and understanding of SCF.

## 2 Methodology

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*In this chapter, the type of research is presented together with the research approach. The research approach's connection with the overall process and data collection is explained to give readers an understanding of how results and conclusions are derived. Furthermore, the chapter aims at providing a critical evaluation of the methodology and present potential shortfalls, in order for the reader to have a nuanced approach toward the thesis.*

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### 2.1 Case Study

With a case study, the research is focused on a real-world setting with a defined set of boundaries. The boundaries are set based on the rationale for the research, which can be an organization, a particular industry, or a specific type of operation (Ellram, 1996). Case studies aim at exploring, describing and/or explaining a phenomenon or the implications of the phenomenon. It is commonly used for understanding how the context of the phenomenon affects the outcomes. Case studies are often used in qualitative research as it allows for a holistic examination within the boundaries (Bryman & Bell, 2005).

“A case study is an empirical enquiry that (1) investigates a contemporary phenomenon within its real life context, especially when (2) the boundaries between phenomenon and context are not clearly evident” (Yin, 2003). As a case study considers the contextual factors which limit the extent of the analysis, it provides a comprehension of indistinct and disordered issues allowing for in-depth insights. The strength of the case study is that it addresses ‘how’ and ‘why’ questions within the course of research (Yin, 2003 and Ellram, 1996).

### 2.2 Quantitative, Qualitative, Inductive and Deductive approaches

#### 2.2.1 The Inductive Qualitative Path

The left side of figure 4 illustrates the inductive qualitative approach. It is used with to understanding the phenomenon subject to research in its own terms. According to Golicic et. al. (2005), researchers adopting a qualitative approach take interest in the experiences from the informant's perspective through first-hand learning, based on the assumption that “knowledge is in the meaning people make of it; knowledge is gained through people talking about their meaning” (Creswell, 1998). As a result, the first step with the qualitative approach is data collection where the researcher observe the phenomenon in its natural setting, typically by several field visits.

The second stage is to describe the phenomenon from the informants' point of views. The descriptions are generated by examining multiple sources and asking open-ended questions (Hirschman, 1986) where the research and data design evolves as the researcher gets a better and more holistic understanding of the phenomenon.

The next step is generating a substantive theory from the descriptive data. The qualitative data is analyzed inductively, using the detailed findings in the data to generate a general perspective (that can be called categories, themes, dimensions, codes etc.). A substantive theory is developed by capturing the dynamic nature of the phenomenon, allowing the researcher to a deeper understanding of the phenomenon and exhaustively present a single idea (Creswell, 1998 and Golicic et. al., 2005).

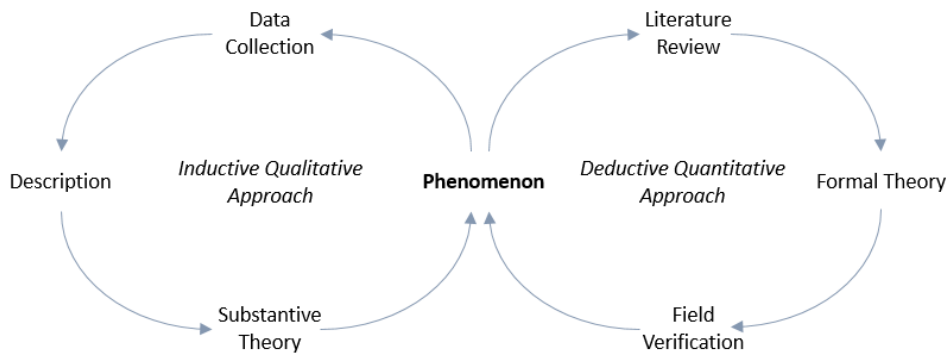


Figure 4 – The Balanced Approach Model (Golovic et al., 2005)

### 2.2.2 The Deductive Quantitative Path

The quantitative deductive path (right side of figure 4) starts with a literature review in order to specify relevant variables and anticipated relations in a conceptual framework (Bickman & Rog, 1998 and Golovic et. al., 2005). Based on the findings, a formal theory is created in the next step that should be able to generate predictive outcomes that can be tested with real-situation data. Before the data is collected and applied, the researcher form a hypothesis based on the theory that is generated through a deductive approach, beginning with the general view and moving to the detailed data and findings.

The third step, data is collected through designed measurement instruments in experiments or field surveys with the purpose of verifying the formal theory.

### 2.2.3 The Balanced Approach

Golovic et. al. (2005) suggests that by alternating back and forth between quantitative and qualitative approaches leads to a balanced research program. The inductive approach is adequate for understanding and generating substantive theory about complex phenomenon whereas the deductive approach is suitable for developing and testing formal theory. Thus, the research should advance around the circles in figure 4, repeating previous circular paths as well as crossing over to the other approach.

## 2.3 Coding

The purpose of coding is to enable fragmentation and sorting of information and data. As there is no general way of coding, it should be implemented based on the research’s purpose and requirements (Bryman & Bell, 2011).

## 2.4 Research Process

There are two levels of case studies in this thesis that are interrelated as findings within the respective level affect the outcome for both levels. The first is the case study considering the specific buyer-centric SCF solution in which its relevance and a framework for evaluation and implementation is presented. The second level is the case study on Axis, where it is evaluated whether SCF is suitable for Axis and if they should pursue a SCF initiative (not presented as it contains sensitive information). Lessons learned from the practical case study is incorporated into a revised framework, adding a practical perspective to the answer to RQ3. For the construction of the conceptual framework, the study is exploratory. The framework is applied in a real-world setting which in terms provide feedback back to the framework in order to revise it. Figure 5 describes how the balanced approach has been incorporated with the empirical research and the literature research.

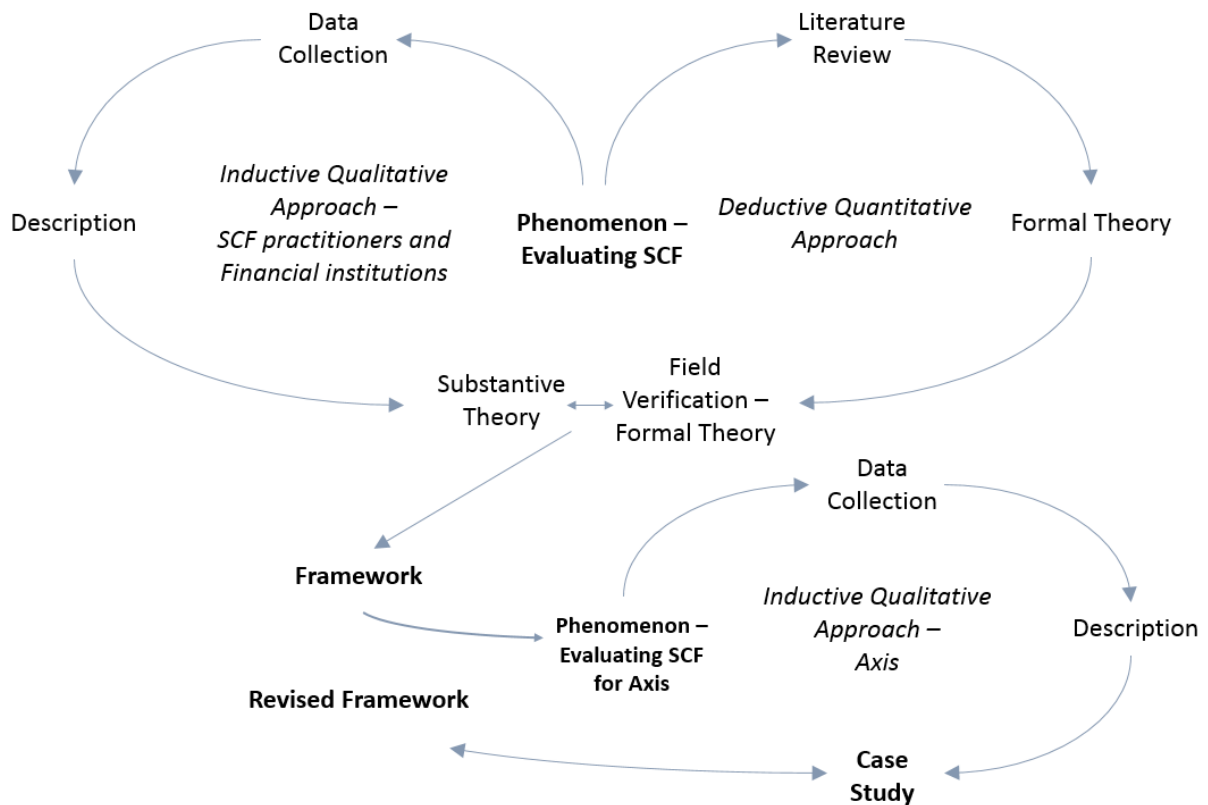


Figure 5 – Research process

To obtain a balanced result, the inductive qualitative approach is combined with the deductive quantitative approach. The formal theory developed with the deductive approach is verified with the substantive theory from the inductive approach. The findings are combined to create an initial framework. The analysis section provides a compilation of the formal and substantive theories.

Data is gathered and utilized with the framework in the Axis case study through an inductive qualitative approach. This is used to revise the framework with the understanding gained from the research process.

#### *Presentation of SCF practitioners*

SCF practitioner 1: Previously responsible for the SCF program at a large company in the automotive industry. The company was one of the first to adopt SCF. Suppliers are not being on-boarded at a high pace.

SCF practitioner 2: SCF manager at a large Swedish firm in the engineering and manufacturing industry. Has been involved with the pre-study, implementation and program management. The company SCF program went live about a year ago. Suppliers are still being on boarded at a high pace.

#### *Presentation of Financial Institutions*

Bank 1: One of the world’s largest banks with a worldwide presence.

Bank 2: One of the largest Nordic banks with a strong market position in Sweden.



## 2.5 Data use and gathering

The contextual setting and the framework for evaluating SCF's suitability for a buying firm is developed by combining:

- i) Literature review
- ii) Semi-structured interviews with SCF practitioners from buying firms having a buyer-centric SCF program and with financial institutions providing SCF solutions
- iii) Key insights from conducting an evaluation on the suitability of a buyer-centric SCF program at Axis communications

The literature review is combined with semi-structured interviews with persons involved in key areas from a supply chain finance context, is the foundation of the framework, in which one should be able to determine whether a buying company satisfies condition indicating that a SCF solution can improve their business. In-depth interviews was conducted with two large Swedish firms that have implemented SCF, as well as discussions with a few additional Nordic firms. For the literature review and first-hand empirical observations, categorization is conducted to present the areas covered. This form the basis in understanding relevant key aspects and to further elaborate on these.

The framework comprise the basis for the analysis on Supply Chain Finance suitability at Axis. The analysis is extended beyond the output from the framework and combined with additional information from the semi-structured interviews and the literature review to form a case study regarding Axis' opportunities and requirements for a successful SCF initiative.

The single case study on Axis communications is based on the developed framework, quantitative data from Axis' enterprise system and qualitative data obtained through semi structured interviews at Axis.

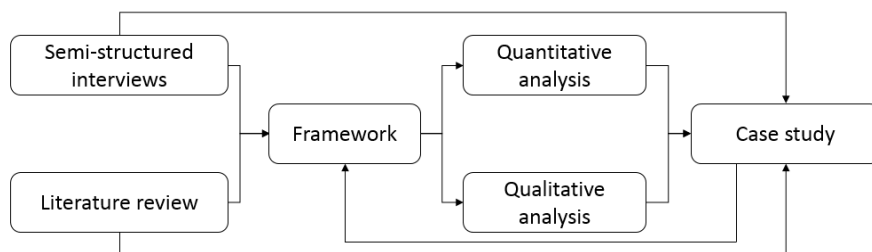


Figure 6 – Data gathering and compilation

## 2.6 Research validity

Creating a holistic framework for a SCF initiative's project process and for evaluating the suitability for a buying firm, is the prospective of the research process. For the framework to be generic to a certain extent, the research accounts for validity, reliability and representativity, as suggested by Rosengren and Arvidson (2002). By using several sources of data and multiple method of data collection it is ensured that the thesis' key propositions are consistent with previous results, and from the different perspectives that are relevant.

The main sources of data, allowing for data triangulation are the following:

- Academic literature
- Trade publications
- Consultancy reports
- Reports from SCF providers

- Interviews with SCF providers
- Interviews with SCF practitioners at buying firms
- Internal interviews at Axis

With regard to the specific focus on Axis communication as a buying firm, information is collected from the organization throughout the study in order to apply the framework in a manner rational from Axis' perspective.

To ensure internal validity, several interviews with key informants at Axis was conducted. By interviewing people from different functions such as: supply chain development, procurement, sourcing, treasury, accounting, legal and IT the study's validity increase, as several opinions and perspectives can be triangulated to reduce bias. For SCF this is especially important as a SCF initiative generally require cross-functional teams consisting of these functions. Furthermore, finance and operation's top manager's perspectives were collected.

## 2.7 Potential shortfalls with case study and the research process

Case studies as scientific method is criticized for subjectivity. As the thesis is conducted in collaboration with Axis communications, the influences from Axis may lead to biased results and conclusions. Furthermore, the suggested SCF evaluation tools are not proven empirically to be superior to potential alternatives. However, some of the underlying sources of information do provide an empirical foundation for the benefits of considering certain aspects.

As SCF is not implemented at Axis the results and predictions from the evaluation cannot be verified. This leaves an uncertainty regarding the presented frameworks comprehensiveness. A verification on whether any key aspects have been left out would have been preferable. This is however mitigated with literature covering the relevant areas of the framework, in which some have analyzed SCF cases that have been realized, as well as the interviews with SCF practitioners.

## 2.8 Rational for case study as main method

The strong cooperation between theory and practice in case study research is indeed suitable for this thesis. The current literature is either very theoretic (e.g., Hofmann (2005), Pfohl and Gomm (2009)), analyses specific company cases (e.g., Wuttke et al. (2013)), lack of detail on how to evaluate a SCF prospective (e.g., McKinsey (2010), PwC (2009)), or discuss specific SCF aspects without a holistic approach (e.g., ACCA (2014), Seifert and Seifert (2011)). Consequently, there is a large amount of theory and value propositions, regarding SCF. In order to create practical frameworks however, the available theory must be incorporated with a practical perspective.

The parallel work evaluating SCF for Axis gives the thesis a practical perspective and help focus the research process on the research questions that are of a practical nature.

## 2.9 Rational for the firms involved in the empirical study

The reasons for choosing the SCF practitioner firms is that they, and the professionals interviewed, has extensive experience from SCF, one recently implementing SCF. Thus, the first firm has seen SCF evolve over a long period of time, and can be able to draw conclusions in retrospect. The second firm has recently experience the problems and issues with implementation and initial onboarding. Furthermore, the professional from firm two has recent experience from the evaluation phase. Firm two has recent experience from the critical initial phases, in contrast to firm one that has seen the result of a program transforming from initial onboarding into a steady phase. For company 1, SCF was an initiative that was initially initiated by purchasing managers. For firm 2, it was an executive initiative.

The financial institution was included based on Axis' preferences. Both have several years of experience from being the financial partner and platform provider. Size wise and from a geographical perspective they differ, allowing for different customer bases which allows a broader perspective on SCF when including both banks.

#### 2.10 Objectivity and criticism of chosen data sources

The academic papers are all peer-reviewed, and efforts have been made to select the papers from journals that are considered holding up to a high standard. It should however be pointed out that a few of the academic researchers are active in communities and organizations promoting SCF, indicating that there could be a small bias.

Consultancy reports and industry associations have influenced the context of the thesis as well as the result. These firms and associations have an incentive to create an interest for SCF as it generate business opportunities. However, they still have to be objective to a certain extent in order to keep trust with current and potential customer and ensure that their clients are satisfied with their work.

Financial institution have an obvious bias. They want to promote SCF and their SCF in particular as it is a source of revenue. However, they still have to remain good relations with current and potential clients.

### 3 Theoretical Framework

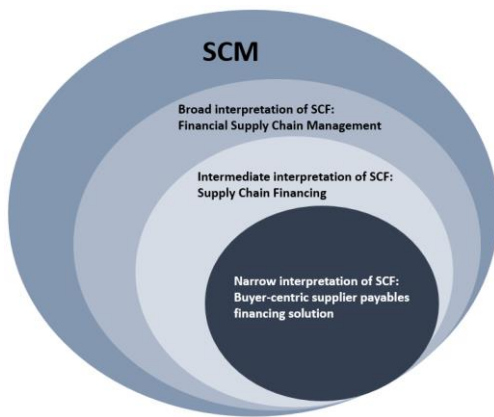
*The chapter presents a theoretical background on SCF and the different interpretations of what SCF. Different definitions are presented for the reader to understand that the term SCF is not unambiguous. The buyer-centric payables finance solution concept is presented and explained in detail. The chapter includes frameworks that are utilized in the analysis and appropriate for evaluation of SCF's suitability for a buying firm. The two basic central concepts, Working Capital, and the Cash Conversion Cycle (CCC) with its components, are presented in Appendix A and B. Some of the presented theory's connection to SCF is not immediately obvious, but should be clear once the reader progress to later chapters. At the end, a literature review summary is presented, allowing the reader to explore further areas and tie the theory with analyses.*

#### 3.1 Supply Chain Finance definition

As table 1 suggests, there are many different definitions for SCF. Templar et al. (2012) discuss the problem of defining SCF. The different factors: model, discipline, technique, product, and program, are highlighted, which make the nature of SCF difficult to define. To clarify the different definitions, they present a framework where SCF is positioned as a part of the broader SCM concept. SCF is categorized in three categories, from a broad to narrow perspective: SCF as financial supply chain management, SCF as supply chain financing and SCF as a buyer centric supplier financing solution for payables. Each category is a sub-set of the pre-sequent category as illustrated in figure 7. For each of these categories the interpretation of SCF differs.

*Table 1 – SCF definitions from literature*

Author	Definition
Hofmann (2005)	"SCF is an approach for two or more organisations in a supply chain, including external service providers, to jointly create value through the means of planning, steering, and controlling the flow of financial resources on an inter-organisational level"
Hofmann & Belin (2011)	"This study views SCF ... namely that financial flows are in contrast to physical flows and their related information flows along the C2C cycle. Thus, the optimization of a company's SCF can be considered equivalent to working capital optimisation"
Camerinelli (2011)	"SCF is the name attached to the collection of products and services that financial institutions offer to facilitate the physical and information flow of a supply chain"
Euro Banking Association [EBA] (2014)	"the use of financial instruments, practices, and technologies to optimize the management of the working capital and liquidity tied up in supply chain processes for collaborating business partners"
Gomm (2010)	"The main fields of SCF are order cycle management, working capital management, and fixed asset financing"
Seifert & Seifert (2009)	"Supply Chain Finance (SCF) represents an innovative opportunity to reduce working capital. Its underlying mechanism is reverse factoring making the technique buyer- rather than supplier-centric"
Grosse-Ruyken et al. (2011) following Camerinelli (2009) and Pfohl & Gomm (2009)	"an integrated approach that provides visibility and control over all cash-related processes within a supply chain"
Wuttke et al. (2013)	"Our definition takes an upstream supply chain perspective and focuses on the organizational structure to be implemented between the involved parties to achieve visibility and control and to recurrently take cash flow optimizing actions as outlined by the definitions presented above"



Interpretation of SCF	Description	References
Financial Supply Chain Management	SCF is broadly described as the management of the financial flows in the supply chain: financial processes (transaction processes, data processing, invoice matching etc.) and SC financing techniques.	Hofmann and Belin (2011) Hofmann (2005) Pfohl and Gomm (2009) Gomm (2010)
Supply Chain Financing	SCF is a set of supply chain financing instruments, then included in financial SC management. Different fields can be encompassed in this definition mainly: <ul style="list-style-type: none"> <li>• Trade financing</li> <li>• Fixed asset financing</li> <li>• Working capital financing</li> <li>• Supplier financing</li> </ul>	Aberdeen Group (2006) Sunshine (2007) Atkinson (2008) Camerinelli (2009b) Keifer (2008) Camerinelli (2010a) BAFT-IFSA (2010) ACT (2010)
Buyer-centric supplier payables financing solution	SCF or supplier financing is described as a buyer-driven payables solution, mainly referring to any types of reverse factoring solutions, supported by the appropriate IT technology. This is an invoice settlement option at the very end of the financial supply chain.	Hartley-Urquhart (2000) Demica (2009) Dyckman (2009) Kerle (2009) PWC (2009) Sugirin (2009) Kramer (2010) McKinsey (2010) Moran (2010) Jacquot (2011)

Figure 7 – SCF as a subset of SCM

### 3.2 Supply Chain Finance (SCF) – A buyer centric approach

Within the trade financing industry, the buyer centric supplier financing approach is often referred to as simply Supply Chain Finance (SCF). It is established as a structure where the buying firm agrees with a bank that suppliers can obtain credit for invoices approved by the buyer during the payment term period with the buying firm’s credit rating (Wuttke et al., 2013). The idea is that suppliers have the option to sell receivables as ‘true-sales’ (financing ‘off balance sheet’) once they are approved by the buyer. When approving invoices, the buyer takes full responsibility for paying the full amount to the bank, regardless of whether the supplier fulfill its obligations. In return, the buyer often extend its payment terms. The difference from a transaction without SCF is illustrated in figure 8.

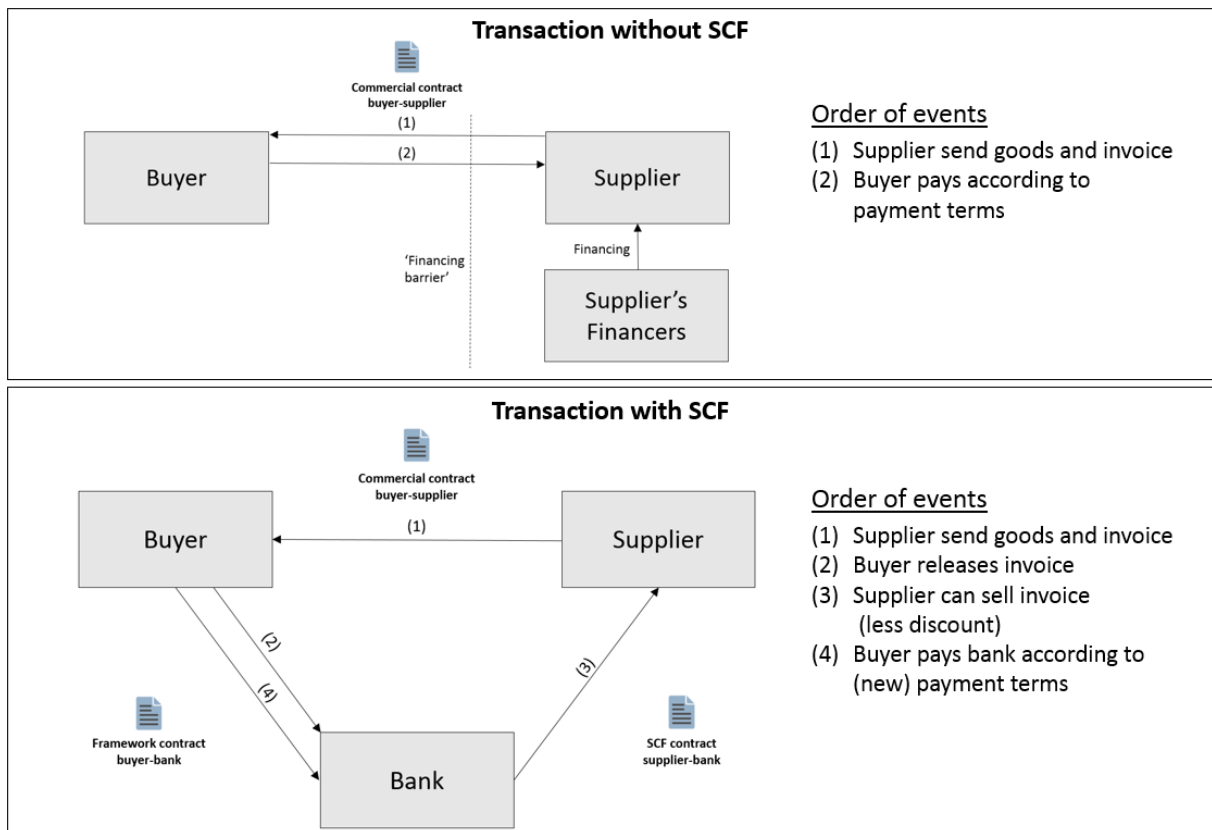


Figure 8 – Transaction with and without SCF

### 3.3 Transaction without SCF

In a non-SCF situation, buyers and supplier has to finance its operations and the gap between expenditures and sales independently. Without collaboration between the buyer and supplier, there is no possibility to take advantage from differing cost of capital within the supply chain. A finance barrier occur, where banks base their credit decisions on information provided by either the supplier or buyer and the risks associated with having a single counterparty.

#### 3.3.1 Factoring

Factoring is a financial transaction where the supplier sells its invoice(s) to a third actor at a discount. It involves three parties, the supplier, the factor who buy the invoice(s), and the debtor with the liability to pay the owner of the invoice. Thus, the factor is essentially buying the legal right to collect payment from the debtor. The sale of the invoice can be either with 'without recourse', where the factor take the loss in case of non-payment, or 'with recourse' in which the supplier bear the loss (the factor can collect payment from the supplier). Typically, the factor retain a percentage of the invoice value to cover the risk of returns and invoice errors until it has been paid in full at due date.

### 3.4 Transaction with SCF

Seifert and Seifert (2009), highlight three major differences with supply chain finance (also called 'reversed factoring as the underlying mechanism is fundamentally factoring):

- 1) Factors (the financial institution) do not have to evaluate credit risks for diverse buyer portfolios

- 2) For buyers that are investment grade companies (high creditworthiness), the factor carry less risk
- 3) As buyer's participate and approves the invoice, factors obtain more and better information and can release fund earlier (and without the risk of invoice disputes as the buyer takes full responsibility for approved invoices)

*SCF order of events*

- (1) Supplier send goods and invoice

The contracts structure is unchanged. To avoid that the SCF set-up is considered as a financial settlement from an accounting perspective, it does not mention SCF and the agreement regarding it. The change in the contract is often only with the payment terms and conditions.

- (2) Buyer approve and release invoice

The focal company takes responsibility for paying the bank in full on due date and appoints the bank to act as a paying agent for the focal company.

- (3) Supplier can sell invoice (less discount)

The supplier can get payment for the invoice at any time between the approval and due date. The sale is a true-sale, and not considered as a loan. Thus, the suppliers are paid for their goods from a balance sheet perspective. The contract between the supplier and the bank describes the terms and conditions for the supplier to sell receivables on a true-sale basis. As the bank's risk is toward the focal company, the discount is based on the buyer's credit worthiness. The financial institutions acts as 'payment agents' for the focal firm, handling payments to suppliers, in order to avoid reclassification of payables to debt.

- (4) Buyer pays bank the full invoice value on due date according to (new) payment terms

Figure 9 describes the financing effect with SCF and increased terms for the supplier.

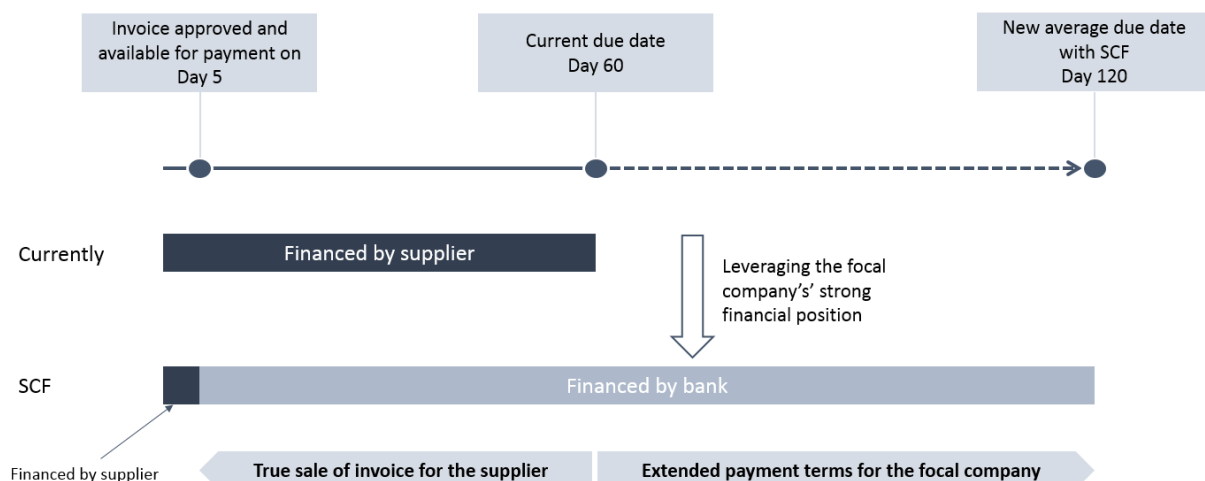


Figure 9 – Financing effect with SCF

### 3.5 SCF with independent platform and multiple funders

There is also the possibility of using a third party platform provider as a layer between financial institutions and the buyer a supplier. A common set-up is presented in figure 10.

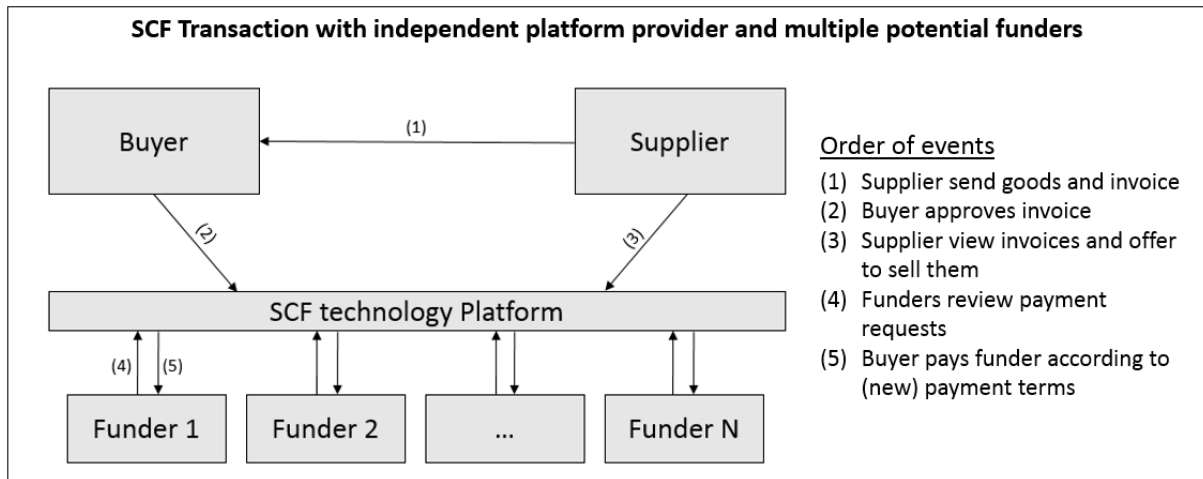


Figure 10 – SCF with several funders and independent platform provider

#### Order of events

(1) Supplier send goods and invoice

(2) Buyer approves invoice

Buyer release approved invoices to the SCF platform

(3) Supplier view invoices and offer to sell them

Suppliers view their approved invoices in real-time and can offer to sell them for early payment before due date

(4) Funders review payment requests

Funders can review early payment requests and provide funding to the supplier with a discount based on the buyer's risk profile

(5) Buyer pays funder according to (new) payment terms

At due date, the buyer is requested to pay the funder as instructed by the SCF platform (or supplier if the invoice was not sold for early payment)

### 3.6 Working Capital improvements

Unlocking tied up capital by increasing working capital efficiency can be vital for a firm, enabling it to better manage financial shortfalls and reduce the need for external funding (BCG, 2008). For companies in distress, cash can act as an important lifeline (McKinsey, 2014). Financial stable firms on the other hand can reinvest the cash in opportunities that more directly create value, such as growth initiatives, R&D or efficiency improvements. Figure 11 illustrates the working capital effect for a buying firm extending its payment terms. A supplier getting paid in advanced, see the same effect but with a decrease in its accounts receivables.



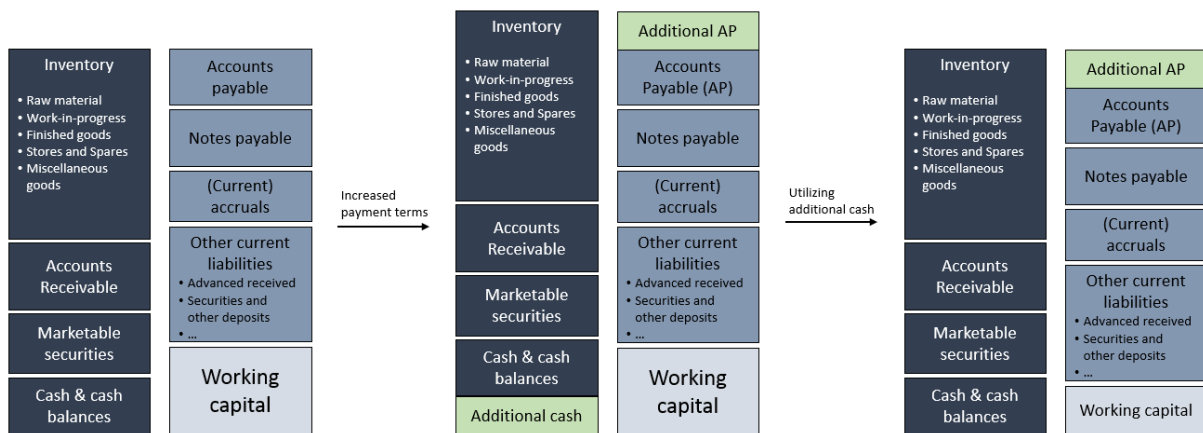


Figure 11 – Working capital effect for buyer with SCF

A unsatisfactory working capital ratio signals financial inefficiency (Business Innovation Observatory, 2014). Working capital tied up in invoicing processes can introduce financial strains to organizations and financial stakeholders consider working capitals as core metrics in gauging the performance of a firm. Working capital is vital for supporting operational activities and expansion strategies. Aberdeen Group conducted a survey asking companies about the reasons for increased focus on working capital optimization (presented in figure 12). It is however important to differentiate the factors that make up working capital. An increased portion of cash support working capital requirements whereas accounts receivables are tied up. When the respondents in figure 12 express a shortage of working capital, they are referring to working capital that can be utilized (such as inventory and cash to support operational activities, and cash to support expansions). Thus, the effect of releasing tied up working capital decrease the shortage.



Figure 12 – Reasons for the increased focus on working capital optimization (Aberdeen Group, 2007)

Furthermore, a working capital improvement initiative can highlight opportunities in areas such as sales, supply chain management, operations, procurement and finance (McKinsey, 2014). For obvious reasons (consider for example the extreme of a supermarket reducing inventory to zero) not all working capital reductions are positive.

### 3.7 Payment terms

Seifert and Seifert (2011) has investigated financial research on payment terms and interviewed around 30 corporate managers regarding the issue. Credit terms vary across industries and geographical regions. For buying firms, terms often vary between their suppliers. From the financial research they highlight three of the most prominent reasons why trade credit is offered on the supply- and demand-side respectively (table 2). Seifert and Seifert emphasis on credit rationing as a particularly strong argument against a uniform reduction of credit terms throughout the supply

chain. As firms' credit constraint vary, they value trade credit compared to purchasing incentives, such as price reductions (increases), differently.

Table 2 – Payment terms arguments

Payment terms arguments	
<b>Supply-side theory</b>	<b>Description</b>
Competitive pressure	Firms have to offer trade credit because competitors do
Credit information	Firms have better information on buyers than banks
Price discrimination	Firms use trade credit when direct price discrimination is prohibited or damaging
<b>Demand-side theory</b>	<b>Description</b>
Transaction pooling	Buyers demand trade credit to pool payments and reduce cash balances
Control protection	Buyers prefer trade rather than bank credit because suppliers are less likely to liquidate
Credit rationing	Buyers cannot obtain bank finance and therefore turn to suppliers

SCF provides a basis to negotiate improved commercial terms with suppliers. Simply increasing suppliers' payment terms can back-fire in terms of higher prices, or sending out a signal of distress to the market (McKinsey, 2014). In a buyer-supplier relation with asymmetric dependency, the focal company might be able to enforce longer payment terms onto suppliers. In such situation, suppliers are providing a costly net funding to the buyer, anxious that not concurring with the buyers proposed terms could decrease their sale volumes (Hofmann and Belin, 2013). The funding of the buyer's working capital provides no net network benefits (Hofmann and Kotzab, 2010), but increase the risk level in the supply chain affects the buyer. The key point is that simply extending payment terms is generally not a viable long term strategy. By adopting a SCF approach however, suppliers are offered an appealing alternative of early payment from a financial institution, and better cash flow visibility and control, in return for increased terms.

### 3.8 Supply Risks

Krajlic (1983) developed his famous two-by-two matrix, the Krajlic matrix. He argues that a company's supplying strategy should be based on two factors:

- i) Profit impact

Profit impact is "determined in terms of the volume purchased, percentage of total purchased cost, or impact on product quality or business growth"

- ii) Supply risk

Supply risk is "assessed in terms of availability, number of suppliers, competitive demand, make-or-buy opportunities, and storage risks and substitution possibilities."

This provides a tool to assess supplier risks, as it considers risks in combination with its potential order of magnitude.

### 3.9 Order to Payment Risks

Approving an invoice is part of the financial flow and is triggered by physical events. From the time an order is placed until goods are received and controlled, the associated risk with the purchase decreases. Thus, the risk of approved invoices depends on when they are approved, as illustrated in figure 13. Each sub-point where information is shared and transferred between the process owners,

so that it is available to the focal company, results in increased visibility – and improved possibility of control – that decrease the level of inherent risk.

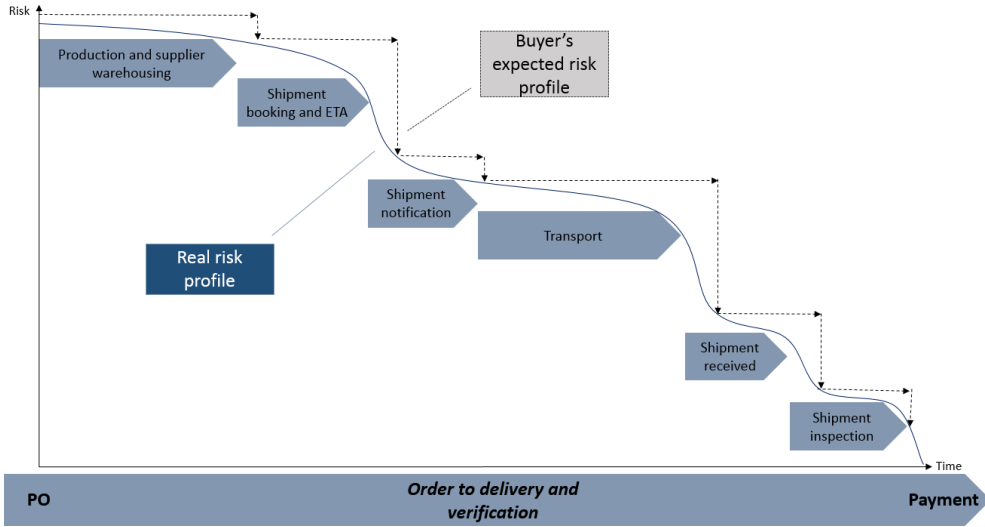


Figure 13 – Risk profiles in the order to payment process. Proportions are not exact. (Adopted from EBA, 2014)

### 3.10 Buyer-Supplier relationship

Van Weele (2014) propose five types of buyer-supplier relationship types (figure 14). They stretch from arm’s length relations that are characterized by short term contracts and supplier competition for each order to collaborative relations characterized by joint efforts to create value (such as R&D projects, integrated systems and extensive information sharing). In arm’s length relations there is often reluctancy to share information between the actors and lack of trust. As relations evolve toward a collaborative type, the trust improves and the inclination to share information increase. The buyer-supplier commitment is strenghtend with a higher degree of dependency.

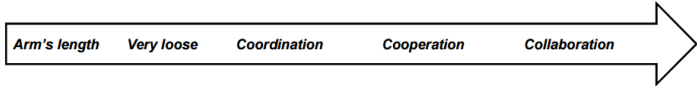


Figure 14 – Buyer-Supplier relationship types (van Weele, 2014)

The level of relationship sophistication is often considered from an integral perspective which is aligned with the relationship types van Weele propose. Arm’s length relations are of a transactional nature whereas collaboration relationships are fully integrated. Liker and Choi (2004) presents the ‘Supplier-Partnering Hierarchy Pyramid’ arguing that great supplier relations are built by following the distinct six steps in the pyramid (figure 15). It is obvious that as buyer-supplier activities move upward in the pyramid, the relation moves to the right in figure 14 with the proposed relationship types.



Figure 15 - The Supplier-Partnering Hierarchy Pyramid (Liker & Choi, 2004)

Maloni and Benton (2000) provides five relationship elements (Table 3), and propose that the strength of an integrated relation can be evaluated through these characteristics. They also suggest potential benefits from a strong relationship, presented in table 4.

Table 3 – Definitions of relationship elements (Maloni & Benton, 2000)

Relationship element	Description	Integrated relationship characteristic
Commitment	Feeling of being emotionally impelled to maintain a long-term relationship	High level of commitment
Conflict	Disunity caused by competitive or opposing action	Low level of conflict
Conflict resolution	Ability to mitigate disunity through mutual solutions	Strong ability to resolve conflict
Cooperation	Association of mutual benefit through joint effort	High level of cooperation
Trust	Confidence in honesty and integrity of partner	High level of trust

Table 4 – Benefits from strong Buyer-Supplier relationships

Category	Aspects
Reduced Uncertainty for Buyers in:	<ul style="list-style-type: none"> <li>• Material costs</li> <li>• Quality</li> <li>• Timing and lead times</li> <li>• Availability and responsiveness</li> </ul>
Reduced Uncertainty for Suppliers in:	<ul style="list-style-type: none"> <li>• Market</li> <li>• Understanding of customers need</li> <li>• Product/material specifications</li> </ul>
Reduced Uncertainty for Both in:	<ul style="list-style-type: none"> <li>• Convergent expectations and goals</li> <li>• Reduced effects from externalities</li> <li>• Reduced opportunism</li> <li>• Increased communication</li> <li>• Shared risk and rewards</li> </ul>
Cost Savings from:	<ul style="list-style-type: none"> <li>• Economies of scale in <ul style="list-style-type: none"> <li>– Ordering</li> <li>– Production</li> <li>– Transportation</li> </ul> </li> <li>• Decreased administrative costs</li> <li>• Decreased switching costs</li> <li>• Integration of processes, technologies</li> <li>• Improved asset utilization</li> </ul>
Enhanced Responsiveness from	<ul style="list-style-type: none"> <li>• Joint production and process development</li> <li>• Faster time to market</li> <li>• Improved cycle times</li> </ul>

Whipple and Frankel (2000) researched 92 supplier-buyer pair, finding that the five factors perceived as most important in influencing the success of a relationship (table 5). The order differed slightly in how important suppliers and buyers perceived the factors, but the top five factors was identical with respect to buyers and suppliers.

Table 5 – Relationship Success Factors (Whipple & Frankel, 2000)

<b>Relationship Success Factors: The five factors that influence success</b>
Trust
Senior Management Support
Ability to Meet Performance Expectations
Clear Goals
Partner Compatibility

3.11 Buyer-supplier power

Caniëls and Gelderman (2005) explores literature on buyer-supplier power and dependence and its effect on buyer-supplier relationships and propose variables that constitute buyer’s and supplier’s dependence (table 6). Buchanan (1992) conceptualized how differences in perceived value from the relationship form power-dependence imbalances. In a balanced relationship, neither party dominate its counterpart. Kumar et al. (1995) view the difference in dependence as interdependency asymmetry, where symmetrical interdependency occur if there is equal levels of dependency between the supplier and buyer. Asymmetric interdependencies are characterized by more dysfunctional relationships as one part can exploit its relative power. According to Anderson and Weitz (1989) imbalanced relationships demonstrate less cooperation and more conflict.

Table 6 – Variables constituting buyer dependence and supplier dependence (Caniëls & Gelderman, 2005)

Buyer dependence	Supplier dependence
Logistical indispensability	Financial magnitude
Need for supplier’s technological expertise	Need for buyer’s technological expertise
Availability of alternative suppliers	Availability of alternative buyers
Switching cost	Switching costs
Overall buyer’s dependence	Overall supplier’s dependence

In Michael E. Porters (1979) famous paper ‘How competitive forces shape strategy’, the well-known framework ‘Porter’s five forces’ is presented. As Porter describes, the bargaining power between suppliers and buyers impacts the profitability and viability of participants in certain industries. The framework is intended to analyze specific industries and to stake out positions in it that are less vulnerable to attacks. Two of the forces are Supplier Power and Buyer Power, and although Porter’s framework is intended for groups of suppliers and buyers, the aspects to analyze within these two areas can be used analogues for specific buyer-supplier power relations. Citing Porter (1979): “The power of each important supplier or buyer group depends on a number of characteristics of its market situation and on the relative importance of its sales or purchases to the industry compared with its overall business.” The characteristics are presented in table 7.

Table 7 – Buyer-Supplier power (adopted from Porter, 1979)

The buyer (group) is powerful if:	The supplier (group) is powerful if:
They are limited in number and/or large in size, relative to supplying firms	They are limited in number and/or large in size, relative to buying firms
Their spend is a high proportion of suppliers' revenue	The volume purchased by the buyer is not important to the supplier
Products and services are undifferentiated, or there are substitute products	There are few substitute products and/or the product is highly differentiated
The product accounts for a significant amount of the buyer's total costs	The switching cost for buyers is high
The product does not save the buyer money and/or the buyer is very price sensitive	The switching cost for buyers is high
The product is unimportant to the buyers end products quality	The supplier's product is an important component in the buyer's business
There is potential for 'backward integration'	There is potential for 'forward integration'

### 3.12 Critical Success Factors (CSFs)

Hoffer and Schendel (1978) defines key success factors as “those variables which management can influence through its decisions that can affect significantly the overall competitive position of the various firms in an industry.” With this definition and considering SCF it can analogues be as the variables management can influence which significantly affect the outcome of a SCF initiative.

Belassi and Tukul (1996) presents seven lists of project CSFs developed in the literature. Table 8 lists the factors from Belassi and Tukul's compilation, that are in two or more of these studies based on my coding. My coding is presented in the left column in table 8.

Table 8 – Critical success factors from literature

Coding	CSFs
Clear goals	<ul style="list-style-type: none"> <li>• 'Define goals' (Martin, 1976)</li> <li>• 'Clear goals' (Baker et. al., 1983)</li> <li>• 'Project objectives' (Morris &amp; Hough, 1987)</li> </ul>
Sufficient resources	<ul style="list-style-type: none"> <li>• Allocate sufficient resources (Martin, 1976)</li> <li>• 'Financial support' and 'Facility support' and 'Manpower and organization' (Cleland &amp; King, 1983)</li> </ul>
Project management	<ul style="list-style-type: none"> <li>• 'Select project organizational philosophy' and 'Require planning and review' (Martin, 1976)</li> <li>• Appoint competent project manager' and 'Progress meetings' (Locke, 1984)</li> <li>• 'Project schedule' (Cleland &amp; King, 1983)</li> <li>• 'Select project team'</li> <li>• 'Project manager's competence' and 'Scheduling' (Sayles &amp; Chandler, 1971)</li> <li>• 'On-site project manager' and 'Adequate project team capability' (Baker et. al., 1983)</li> <li>• 'Characteristics of the project team leader' (Pinto &amp; Slevin, 1989)</li> </ul>
Top management support	<ul style="list-style-type: none"> <li>• 'General management support' (Martin, 1976)</li> <li>• 'Project authority from the top' (Locke, 1984)</li> <li>• 'Top management support' (Cleland &amp; King, 1983 and Pinto &amp; Slevin, 1989)</li> </ul>
Control techniques	<ul style="list-style-type: none"> <li>• 'Provide for control and information mechanisms' (Martin, 1976)</li> <li>• 'Set up control mechanisms (schedules, etc.) (Locke, 1984)</li> <li>• 'Control systems and responsibilities' (Sayles &amp; Chandler, 1971)</li> <li>• 'Planning and control techniques' (Baker et. al., 1983)</li> </ul>
Feedback and review	<ul style="list-style-type: none"> <li>• 'Require planning and review' (Martin, 1976)</li> <li>• 'Project review' (Cleland &amp; King, 1983)</li> <li>• 'Monitoring and feedback' (Sayles &amp; Chandler, 1971)</li> </ul>
Communication channels	<ul style="list-style-type: none"> <li>• 'Set up communications and procedures' (Locke, 1984)</li> <li>• 'Communication' (Pinto &amp; Slevin, 1989)</li> </ul>
Commitment	<ul style="list-style-type: none"> <li>• 'Make project commitments known' (Locke, 1984)</li> <li>• 'Continuing involvement in project' (Sayles &amp; Chandler, 1971)</li> </ul>

	<ul style="list-style-type: none"> <li>• “Goal commitment of project team’ (Baker et. al., 1983)</li> </ul>
Politics	<ul style="list-style-type: none"> <li>• ‘Power and politics’ (Pinto &amp; Slevin, 1989)</li> <li>• ‘Politics’ (Morris &amp; Hough, 1987)</li> </ul>

Belassi and Tukul (1996) argue that the factors should be grouped into four categories in order to overcome some of the problems with generic CSFs:

- “factors related to the project
- factors related to the project manager and the team members,
- factors related to the organization, and
- factors related to the external environment.”

By grouping the factors, it is easier to identify whether the success is related to the project manager and/or the project and/or the external environment. These groups are collectively exhaustive as factors can be placed in one of the groups, but it is not mutually exclusive, as a factor and its considerations can be related to more than one of the categories. The factors within the groups are interrelated, as for instance top management support is related to the organization which is affected by the external environment (for instance the overall economy). By analyzing the interrelation between the categories and factors, it is easier to understand the drivers for success.

### 3.13 Literature Review summary

Different definitions and interpretations of SCF is presented in the introductions, and provides a basis for where to find relevant literature.

Randall and Farris II (2009) presents how managing financing in supply chains collaboratively with suppliers and accounting for differences in buyer’s and its suppliers’ cost of capital and Weighted Average Cost of Capital (WACC). They base their analysis on the CCC and suggest that “by taking advantage of the comparative strengths of each firm, the network generates profit previously foregone by operating independently. Balanced communication, focused through a supply chain financial management relationships embraced by all trading partners, may help ensure supply chain profits for the whole are not sub-optimized to the benefit of one firm in particular” (Randall and Farris II, 2009)

Hofmann and Kotzab (2010) presents a supply chain approach to WCM and the CCC, comparing a single company perspective with a collaborate approach. They conclude that a buyer minimizing its CCC cycle does not add value to all members. A strong firm can leverage its relative power and take all the working capital improvements in a supply chain which could be problematic in the long-term. From a ‘network perspective’, companies with the lowest WACC should see extended CCC while allowing shorter CCC’s for firms with high WACC, for the optimal network CCC.

A buyer-centric SCF initiative with extended payment terms for suppliers can be seen as the opposite of what Hofmann and Kotzab suggests as the optimal network CCC. However, on the contrary, SCF allows suppliers to decrease its CCC by giving them the opportunity to reduce their DSO to near zero, while shifting some of the benefits to the buyer.

Gomm (2010), Hofmann and Belin (2013) and Hofmann and Kotzab (2010) discuss SCF’s relevance from an EVA perspective.

Literature covering areas relevant to the practical aspects of SC are reviewed and summarized in the following tables. In table 9 coding has been used, displaying the different areas covered where

papers and reports has to include and elaborate on the area rather than just mentioning it, in order to be considered as covering the area.

*Literature review summarized in tables*

Focusing on papers and reports considering a buyer-centric SCF initiatives, table 9 presents the different areas covered. Coding is used for the different areas, where papers and reports including and elaborate on the area, rather than just mentioning it, is considered as covering the area. The potential benefits for the buyer and suppliers are further elaborated on in table 10 and 11 where four reports discussing benefits in-depth are included. The critical success factors identified in the papers covering it are presented in table 12. The motivations and reasons for firms looking into (and implementing) SCF differs. To get an understanding of why firms pursue SCF, the motivation for previous studied companies are presented in table 13. This gives an indication of why SCF can be advantageous for a buying firm, and most importantly, provides insights on reasons for a firm to investigate SCF.

*Table 9 – Areas covered in specific papers and reports*

Source	Areas covered						
	SCF benefits	Costs related to SCF for the focal firm	Risks for the focal firm associated with pursuing a SCF initiative	Critical success factors	Enablers and Inhibitors for SCF	Implementation	Company case studies
McKinsey (2010)	X						
PwC (2009)	X						
CGI (2007)	X						
ACCA (2014)	X	X	X		X		
Aberdeen Group (2006)	X						
EBA (2014)	X						X
Hofmann (2013)	X					X	X
Hofmann & Belin (2011)	X		X		X		
Wuttke et. al (2013)				X		X	X
Gomm (2010)	X						
Templar et al. (2012)	X				X	X	X
Seifert & Seifert (2009)	X			X			

Coding explanation:

- SCF Benefits – Explore and describes benefits for the buyer and/or the supplier with SCF
- Costs related to SCF for the focal firm – Explore the cost drivers for the buyer with a SCF initiative from the evaluation stage until the active management of the program
- Risks for the focal firm associated with pursuing a SCF initiative – Self explanatory
- Critical success factors – Explicitly and/or implicitly discussing the most critical aspects for a SCF evaluation and/or implementation and/or SCF program to be successful
- Enabler and inhibitors for SCF – Covers factors that makes SCF adequate for a firm and potential issues and requirement with a SCF initiative
- Implementation – Covers factors explicitly related to the implementation of SCF and onboarding of suppliers
- Company case studies – Company case studies are presented in the paper or report



Table 10 – In-depth review on benefits for the buyer

Source	Potential benefits to the buyer									
	Improved commercial terms / improved DPO / Reduced WC	Improved relationship with key suppliers	Reduces payment processing costs	Enables better cash flow management	Reduced Supply Chain risks	Increases end-to-end visibility across the Supply Chain	Reduce the cost of goods purchased	Potential to reduce other debt / Freed up credit lines	Reduced currency risk	Increased dividend and investment capacity
McKinsey (2010)	X	X	X	X	X					
PwC (2009)	X				X	X				
CGI (2007)	X	X			X	X	X			
ACCA (2014)	X		X		X			X	X	

Table 11 – In-depth review on benefits for suppliers

Source	Potential benefits to suppliers						
	Improved DSO / Reduced WC	Potential to reduce other debt / Freed up credit lines / Reduced cost of financing	Reduced Supply Chain risks	Enables better cash flow management	Provides visibility into payment processes and facilitates faster dispute management	Offers more predictable cash flows	Strengthened relation to buyer
McKinsey (2010)	X	X	X	X	X	X	
PwC (2009)	X	X		X		X	
CGI (2007)	X	X		X	X	X	
ACCA (2014)	X	X		X	X	X	

Table 12 – Critical Success Factors

Source	Critical Success Factors (CSF)									
	Selecting the right banking partner	Internal sponsorship and top-management support	Focal company in charge of the initiative	Degree of automation and process alignment	Scope of suppliers	Internal acceptance of changes in job designs and processes	Performance measures	Good Supplier Relations	Excellent Project Management	Internal Alignment
Wuttke et al. (2013)	X	X	X	X	X	X	X			X
Seifert & Seifert (2009) (Implementation CSFs)	X	X								
EBA (2014)	X	X		X	X	X	X	X	X	X

Seifert and Seifert (2011) conducted an empirical study on corporations with SCF, and ask respondent about the critical success factors that distinguishes a successful SCF implementation. Wuttke et al. (2013) does not explicitly discuss critical success factors, but conclusions can be drawn from the case studies and conclusions in their paper. EBA (2014) provides an exhaustive list of CSFs without much further elaboration. As a result, they suggest several CSFs that are not explicitly mentioned in table 12.

Table 13 – Initial motivation for firms' to pursue SCF

Source	Company	Main initial motivation for SCF
Templar et al. (2012)	TelCo	Cash Management
	PharmCo	Supplier Relationship Management
	ChemCo	Global Working Capital Initiative (Payables strategy)
	AutoCo	SC risk management
Wuttke et al. (2013)	Alpha	Sustainable business practices
	Beta	Working capital improvements
	Gamma	Part of a holistic working capital initiative
	Delta	Stable supply base
	Epsilon	Sustainable working capital reduction with respect to suppliers
	Zeta	Sustainable CCC reduction
EU – Business Innovation observatory (2014)	Multimedia Company X	Increase company valuation
	Technology Company Y	Mitigate supplier continuity risk
	Technology Company Z	Free up working capital

## 4 Empirical findings

The chapter provides areas covered in the empirical research, provides findings and a presents the relation to the literature review.

The findings are presented in table 14, 15, 16, 17 and 18. For a further explanation of the tables, refer to the previous section with the summary of the literature review.

Table 14 – Areas covered in the empirical study to complement the literature review

Source	Areas covered						
	SCF benefits	Costs related to SCF for the focal firm	Risks for the focal firm associated with pursuing a SCF initiative	Critical success factors	Enablers and Inhibitors for SCF	Implementation	Company case studies
McKinsey (2010)	X						
PwC (2009)	X						
CGI (2007)	X						
ACCA (2014)	X	X	X		X		
Aberdeen Group (2006)	X						
EBA (2014)	X						X
Hofmann (2013)	X					X	X
Hofmann & Belin (2011)	X		X		X		
Wuttke et. al (2013)				X		X	X
Gomm (2010)	X						
Templar et al. (2012)	X				X	X	X
Seifert & Seifert (2006)	X			X			
<b>Bank 1</b>	X		X	X	X	X	
<b>Bank 2</b>	X		X	X	X	X	
<b>SCF Practitioner 1</b>	X	X	X	X	X	X	
<b>SCF Practitioner 2</b>	X	X	X	X	X	X	

Table 15 – Benefits for the buyer mentioned and discussed in the empirical study

Source	Potential benefits to the buyer									
	Improved commercial terms / improved DPO / Reduced WC	Improved relationship with key suppliers	Reduces payment processing costs	Enables better cash flow management	Reduced Supply Chain risks	Increases end-to-end visibility across the Supply Chain	Reduce the cost of goods purchased	Potential to reduce other debt / Freed up credit lines	Reduced currency risk	Increased dividend and investment capacity
McKinsey (2010)	X	X	X	X	X					
PwC (2009)	X				X	X				
CGI (2007)	X	X			X	X	X			
ACCA (2014)	X		X		X			X	X	
<b>Bank 1</b>	X	X			X	X	X	X		
<b>Bank 2</b>	X	X						X		X
<b>SCF practitioner 1</b>	X	X			X	X	X	X		
<b>SCF practitioner 2</b>	X	X	X		X	X		X		X

Table 16 - Benefits for the supplier mentioned and discussed in the empirical study

Source	Potential benefits to suppliers						
	Improved DSO / Reduced WC	Potential to reduce other debt / Freed up credit lines / Reduced cost of financing	Reduced Supply Chain risks	Enables better cash flow management	Provides visibility into payment processes and facilitates faster dispute management	Offers more predictable cash flows	Strengthened relation to buyer
McKinsey (2010)	X	X	X	X	X	X	
PwC (2009)	X	X		X		X	
CGI (2007)	X	X		X	X	X	
ACCA (2014)	X	X		X	X	X	
Bank 1	X	X	X	X	X	X	
Bank 2	X	X	X	X	X	X	X
SCF Practitioner 1	X	X	X	X	X	X	X
SCF Practitioner 2	X	X	X	X	X	X	X

Table 7 – Initial motivation for firms involved with the empirical study

Source	Company	Main initial motivation for SCF
Templar et al. (2012)	TelCo	Cash Management
	PharmCo	Supplier Relationship Management
	ChemCo	Global Working Capital Initiative (Payables strategy)
	AutoCo	SC risk management
Wuttke et al. (2013)	Alpha	Sustainable business practices
	Beta	Working capital improvements
	Gamma	Part of a holistic working capital initiative
	Delta	Stable supply base
	Epsilon	Sustainable working capital reduction with respect to suppliers
	Zeta	Sustainable CCC reduction
EU – Business Innovation observatory (2014)	Multimedia Company X	Increase company valuation
	Technology Company Y	Mitigate supplier continuity risk
	Technology Company Z	Free up working capital
Thesis	Company 1	Mitigate effects from increased sales terms
	Company 2	Part of a corporate working capital initiative
	Company 3	Combination of: Working capital improvements, terms alignment and supplier stability

Table 18 – The most critical success factors according to firms involved with the empirical study

Source	Critical Success Factors (CSF)									
	Selecting the right banking partner	Internal sponsorship and top-management support	Focal company in charge of the initiative	Degree of automation and process alignment	Scope of suppliers	Internal acceptance of changes in job designs and processes	Performance measures	Good Supplier Relations	Excellent Project Management	Internal Alignment
Wuttke et. Al (2013)	X	X	X	X	X	X	X			X
Seifert & Seifert (2009) (Implementation CSFs)	X	X								
EBA (2014)	X	X		X	X	X	X	X	X	X
Bank 1	X	X		X	X		X	X	X	X
Bank 2	X			X	X		X	X	X	X
SCF Practitioner 1	X	X	X	X	X	X	X	X		X
SCF Practitioner 2	X	X	X	X	X	X	X	X	X	X

# 5 Analysis

*The chapter provides an analysis on SCF's relevance, answering RQ1, for the reader to understand the effect examples are used as illustration. Risks and costs associated with a SCF initiative are analyzed so that the benefits can be put in relation with potential downsides. At the end, the most critical success factors are identified in a SCF context answering RQ2. The analysis incorporates the literature and consultancy reports on SCF and the empirical findings as well as practical experience from conducting the pre-study at Axis.*

## 5.1 Supply Chain Finance Relevance

### 5.1.1 Working capital improvements

*Working capitals effect on returns on invested capital*

To quantify the effect of WC improvements, Seifert and Seifert (2011) find that an average company decreasing working capital by 30 percent leads to a 16 percent increase in after-tax returns on invested capital.

*Increasing need for working capital efficiency in a growth company*

As the CCC indicates the number of days the company has to finance its working capital, the measurement can be used to estimate additional need of financing with regard to WC. Consider company A (table 19); next year they would require a 250 MSEK injection in WC to accommodate for the growth. In a 10 year period with constant growth rate, a total injection of approximately 5 BSEK is required. (See calculations in Appendix D).

Table 19 – Example: growth company

Company A	
Cumulative Average Growth Rate (CAGR)	15 %
Cash Conversion Cycle (CCC)	60 days
Sales	10 BSEK

The increased working capital requirement is a linear function of the CCC; decreasing the CCC reduce the need of financing it. Furthermore, there is often a correlation between a buyer's and its suppliers' growth; thus suppliers also face a need of working capital injection where early payment lower the need for working capital injections.

### 5.1.2 Economic Value Added (EVA)

To understand how SCF can add value to an organization, the financial changes within the supply chain need to be related to profitability and the effect on the value added by the firm. Lambert and Pohlen (2001) suggests that most supply chain metrics are of an internal nature measuring logistic efficiencies, not capturing the higher level of supply chain improvements relevance.

The Economic Value Added (EVA) measurement captures the economic profit. With EVA, value is added when the business net cash flow exceeds the cost of the capital utilized to create the operating profit. Figure 11 (page 21) describes how SCF reduce working capital for the buyer, and

figure 16 illustrates the direct impact on the components of EVA which generates value for the buying organization from the reduced working capital. The figure does not consider the effect from the use of the additional cash, these would be indirect effects.

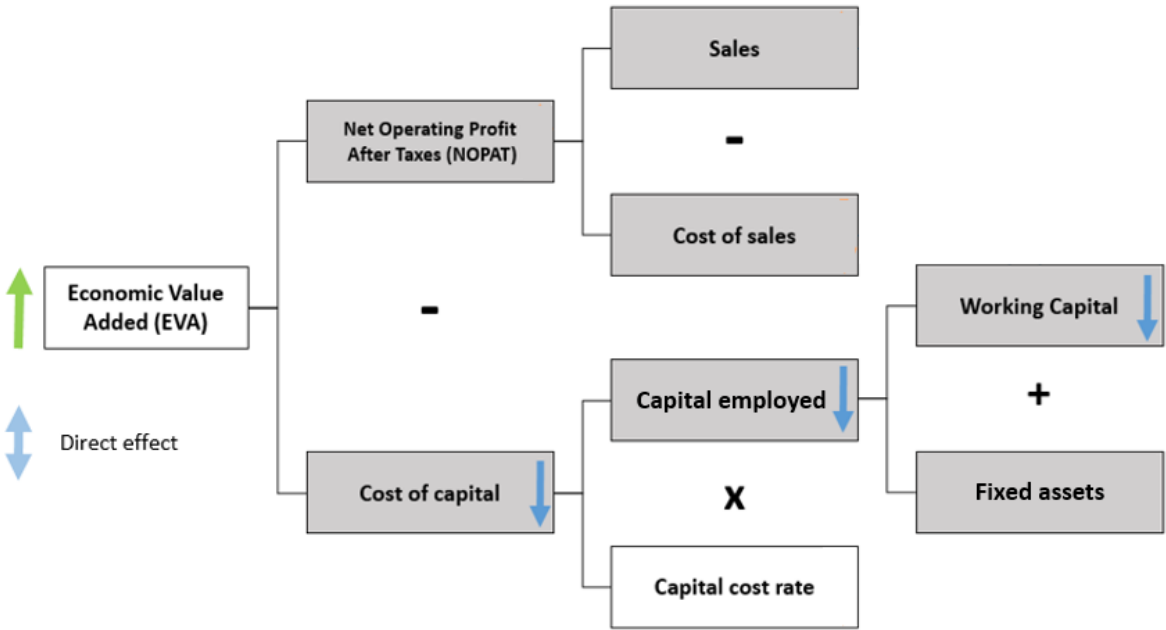


Figure 16 - EVA value-driver and direct impact for the buyer from SCF's working capital reduction

5.1.3 Cash Conversion Cycle (CCC) improvements

Decreasing CCC means changing some or a combination of its components, DPO, DIO and DSO (abbreviations explained in table 20). However, changing these component, ceteris paribus, likely have certain implications. Decreasing DSO may result in lower sales and profits, as customer value is weakened when their credit is limited. Decreasing DIO by lowering inventory levels is associated with a risk of losing sales and reduced service levels and customer satisfaction. DIO could also be improved by reducing lead-times but it is generally associated with large investments. Increasing DPO pose a supply risk. Extending terms shift costs and financing needs to suppliers, creating a more financially unstable supply base. The advantage of SCF is clear; DPO can be increased, with working capital improvements as a result, while mitigating the risks of a traditional forced payment extension.

Example

Table 20 – Example: CCC without SCF

Company A – W/O SCF	
Supplier spend	5 BSEK
Current terms	60 days
Days Payables Outstanding (DPO)	60
Days Inventory Outstanding (DIO)	75
Days Sales Outstanding (DSO)	45
<b>Cash Conversion Cycle (CCC)</b>	<b>60 days</b>

Table 21 – Example: CCC with SCF

<b>Company A – with SCF</b>	
SCF spend	2,5 BSEK (50 %)
Terms with SCF	120 days
Days Payables Outstanding (DPO)	90
Days Inventory Outstanding (DIO)	75
Days Sales Outstanding (DSO)	45
<b>Cash Conversion Cycle (CCC)</b>	<b>30 days</b>
<b>CCC decrease</b>	<b>50 %</b>

#### CCC impact on enterprise valuation

Hofmann and Belin (2011) suggests that a 25% reduction in the CCC increase enterprise valuations with 7.5% according to academic studies.

#### 5.1.4 Credit Arbitrage and WACC Savings

With a SCF initiative, payables assets can be isolated and financed at a rate either significantly below the suppliers WACC or below their marginal cost of debt. When the SCF financing cost is below the supplier's marginal cost of debt there is a credit arbitrage opportunity. Furthermore, the freed up cash can be used by the supplier to repurchase expensive equity or debt, and as a result, lower the overall cost of debt. Figure 17 displays the volatility over a 10 year period based on credit ratings. It is evident that there are clear discrepancy in the cost of capital depending on credit rating. Thus, there is often potential for credit arbitrage, and for a lower rated company to access financing based on a (the buyer's) higher credit rating means less risk as the volatility over time decreases. Figure 18 display the credit spread the last five years for three of Moody's credit ratings (Baa1, Ba2 and Ba3). Obviously, the spread is greater between, for example, Aaa and Ba3.

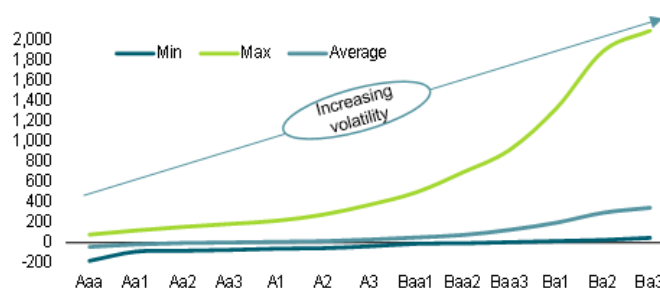


Figure 17 – Increased interest rate volatility over time for lower credit ratings (Moody's, 2015)

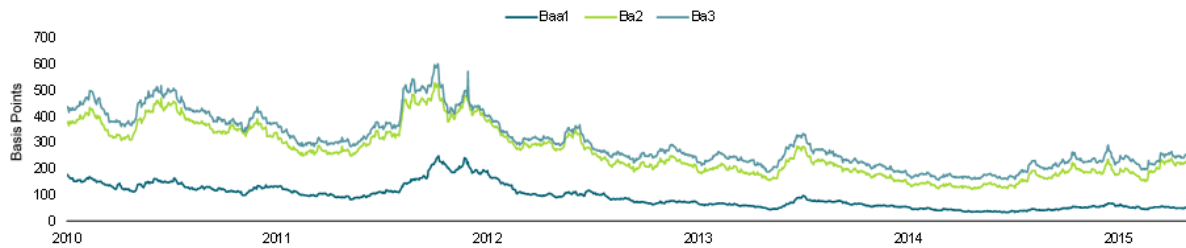


Figure 18 – Interest rate spread based on credit rating 2010-2015 (Moody's, 2015)

Wuttke et al., (2013) provides two quotes from their case study that exemplifies the benefits of a strong credit rating for a focal firm: “For sure, our strong credit rating was required. Without it, we could have never offered such good conditions to our suppliers.”, and “In all ratings we are graded very well, so we bring a strong cost reduction argument to the table.” But it should also be mentioned that the buyer-supplier spread does not necessarily have to be large. Both SCF practitioners expressed that they were surprised by how many suppliers with strong, and even better, credit ratings was eager to join their respective SCF program, as they saw benefits other than a credit arbitrage.

*Example – SCF vs. factoring*

For a supplier using its receivables for financing there could be a credit arbitrage to use SCF with a buyer. Consider the following illustrative example on the cost savings shifting from factoring to SCF:

Table 22 – Example: cost for supplier using factoring

<b>Factoring</b>	
Factoring discount (effective rate)	12 %
Current payment terms	60 days
<b>Cost of factoring</b>	<b>2 %</b>

Table 23 – Example: Cost for supplier using SCF

<b>Supply Chain Finance</b>	
SCF discount (effective rate)	1,5 %
New payment terms	120 days
Invoice approval (charged 12 %)	Day 5
<b>Cost with SCF</b>	<b>0,65 %</b>

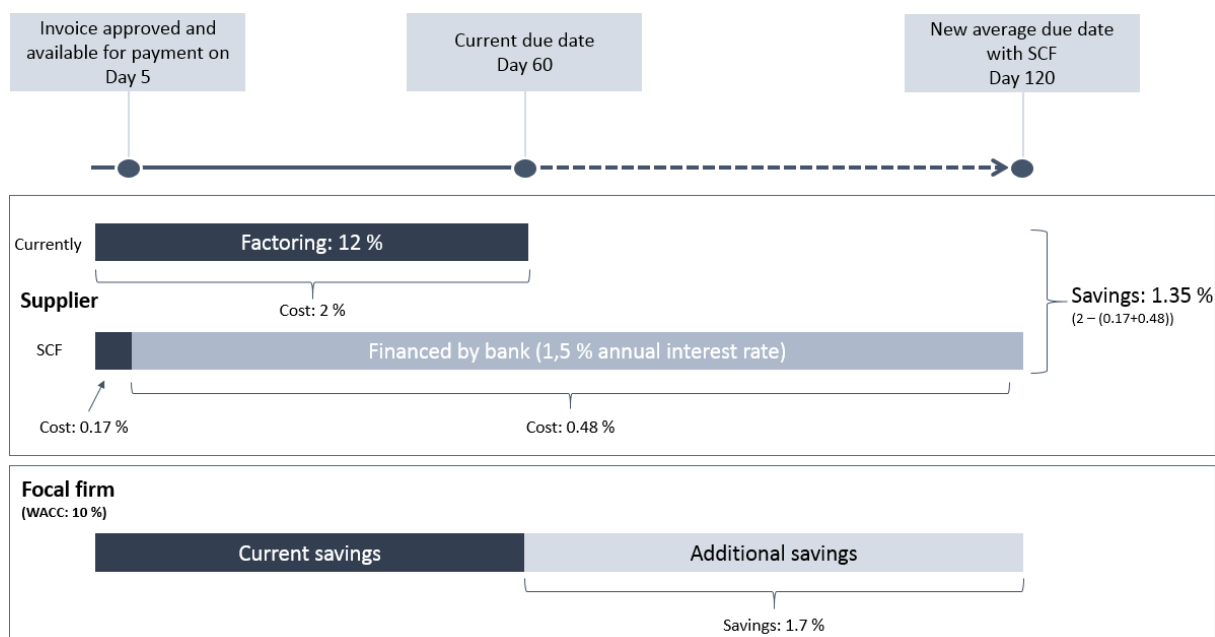


Figure 19 – Credit arbitrage for supplier illustrated

The effect on EVA depends on the type of factoring. If invoices act as collateral, the cash received are considered a loan, and the supplier's accounts receivable is unchanged. SCF would decrease the working capital (if the released cash is utilized, as it is a 'true-sale') and reduce the debt related interest rate (as a large portion of the most expensive debt is removed) which increase EVA (effect as in figure 16, page 33). This affects WACC as equity make up a larger portion, but it could be argued that if the company wish to have the same debt leverage they could take a new, less expensive loan. If the invoices are sold as 'true-sale' in factoring, SCF would have a direct effect in increasing the sales for the supplier, thus increasing EVA.

*Example – SCF cost compared to cost of capital (WACC)*

To illustrate the benefits for a financially stable company we consider the following example based on WACC:

Table 24 – Example: cost for supplier based on WACC

W/O SCF	
Supplier WACC	10 %
Current payment terms	60 days
<b>Cost of financing during payment period</b>	<b>1,67 %</b>

Table 25 – Example: cost for supplier with SCF

WITH SCF	
SCF discount (effective rate)	1,5 %
New payment terms	120 days



Invoice approval (charged 10 %)

Day 5

**Cost with SCF**

**0,72 %**

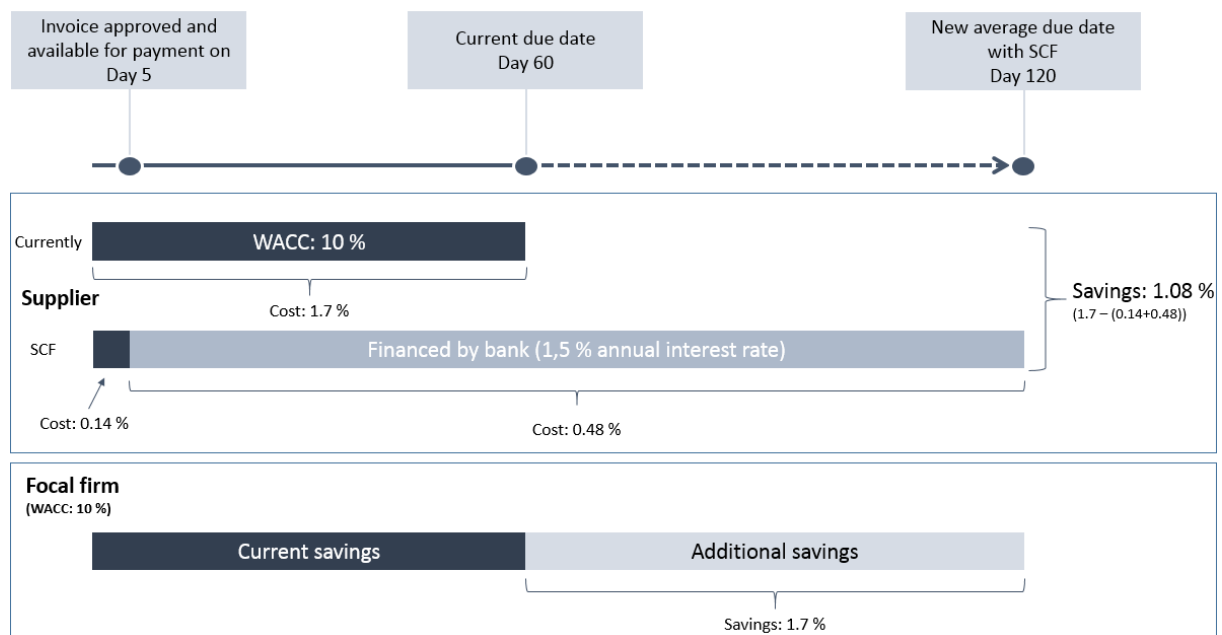


Figure 20 – WACC savings for suppliers illustrated

The difference from the factoring example is that there might not be an obvious financial advantage for the supplier. If WACC is an unfamiliar concept, the supplier might compare the discount on the invoice value with its marginal cost of debt. In such case, it is important for the buying firm to emphasize the 'off-balance sheet' benefit, and advantage of an improved CCC.

If the supplier is not using factoring, SCF decrease the working capital (if the released cash is utilized, as it is a 'true-sale') and with it capital employed. Sales are affected negatively (as they get less cash for each invoice). As seen in the example above, the positive effect on the capital cost is larger than the negative effect on sales, rendering a positive EVA effect.

#### 5.1.5 Reduced Processing and Administrative Costs

SCF can lead to improved purchasing and Accounts Payables (A/P) process, decreasing the time spent on administrative tasks. Moreover, payment processing costs can be reduced by allowing the bank to use direct debit.

As suppliers could (depending on set-up) be dependent on their invoices to be sent in correct manners to get financing, it creates incentives to improve invoicing. The focal firm can put increased pressure on suppliers to improve the invoice error frequency, as it would be a requirement for the opportunity to sell invoices to a funder.

If the supplier and/or buyer experience these benefits, there is a direct impact on costs which improves EVA.

#### 5.1.6 SCF as a Negotiation Tool and Increased Knowledge about Suppliers

The extended offering with a SCF initiative improves can also improve the focal firm's negotiation power. Suppliers can no longer argue that the cost for them for not getting paid immediately hinder them from cutting prices. If suppliers are resistant towards SCF, this in itself is implicit information

regarding how the suppliers value capital. This can improve the possibility to either increase terms regardless of SCF, or have a price discount. In such case, there is also the alternative for substantially longer terms while allowing a small price increase in return. Furthermore, suppliers might be able to buy their raw materials and components cheaper (as a result of better planning due to the increased cash-flow control as well as a better opportunity for early payment that render a discount) which should enable them to lower their prices.

Just by approaching suppliers, the focal firm can extract information implicitly from suppliers' reactions regarding their targets and how they value working capital and cash-flow. It can also signal which persons at the supplier that are responsible for what and the site-specific factories' independence and decision empowerment. For a live SCF program, suppliers timing when they chose to be paid indicates their financial position which can be valuable in future negotiations.

The buyer's costs can decrease as an indirect result of a better negotiation positions with a positive effect on EVA, whereas the supplier experience a negative effect on sales and consequently EVA. However, the improved cash flow can be used by the supplier to experience positive EVA impact (which is the argument improving the buyers negotiation position), for example, the supplier's discounts from early payments and/or better planned purchasing decrease costs and has a positive effect on EVA.

#### 5.1.7 Utilizing Freed Cash

The cash released with SCF can be utilized however the company prefers. Thus, it can be invested to drive sale and/or decrease costs. It can be used to get rid of expensive debt to lower the cost of capital. Moreover, it can be used as dividend for shareholders or for equity buy-back programs. This will create indirect effects on EVA. As this is a business decision as with any other spare cash, it is up to the company to ensure that that the utilization of the freed cash is creating a EVA effect adding value to shareholders.

#### 5.1.8 Improved Supplier Relations

As SCF is a collaborative measure, requiring both the buyer and supplier to share information and trust each other, it naturally leads to tighter and better relations. Moreover, the interdependency increase, as both are dependent on SCF to attain the sought after working capital improvements.

Liker and Choi (2004) presents the 'Supplier-Partnering Hierarchy Pyramid' arguing that great supplier relations are built by following the distinct six steps in the pyramid (figure 15, page 24). Although the pyramid was not developed with financial supply chain issues in mind, it can be used analogously. SCF require the focal firm to understand how suppliers work from a financial and invoicing perspective. It requires supervision of supplier within the program and (possibly) developing the suppliers' technological capabilities in terms of financial processes in order for SCF to function. Information sharing is a pre-requisite for SCF and SCF in itself can be seen as a joint improvement activity.

From a financial perspective in the supply chain, SCF require the buyer to follow the six steps that lead to great relationships. However, SCF is by no mean a measure to create a great relation from a broader perspective as it does not cover aspects such as product development, product planning, production, inventory control etc.

The relationship play a large role in the success of SCF with specific supplier. Thus, an integrated buyer-supplier relationship pre-SCF is beneficial in supplier on-boarding with SCF further improving it.

In literature regarding SCF, improved supplier relations is commonly mentioned as a key benefit. It is however seldom elaborated on how improved relations can benefit the focal company and the supplier. The design of SCF naturally leads to a more integrated buyer-supplier relationship, in which the potential benefits summarized by Maloni and Benton (2000, presented in table 4, page 24). It is important to understand that SCF is not a solution capturing all these benefits, but rather that it can pave the way for further collaborations capturing the aspects put forward. Furthermore, in cases where suppliers attain great benefits from a SCF program, the focal firm will build strong goodwill from these suppliers.

Improved relations can lead to indirect effects on EVA for both the supplier and buyer. As a result of increased collaboration and joint efforts in other areas, cost can decrease for both with a positive effect on EVA. Working capital could potentially be reduced and the CCC decreased with further supply chain cooperation on inventory control for both.

#### 5.1.9 Risk Mitigation

It is the focal firm's best interest that strategic suppliers are financially strong as the supply chain is only as strong as its weakest links. SCF allows suppliers to access cheap financing and improve its working capital, thus strengthening the supply chain. SCF can be an important financial support for strategic suppliers.

Examples of how SCF can reduce the risk of non-supply:

- Suppliers get paid earlier so that they can finance their material purchases and the costs of operations – this is especially important when volumes are ramping up
- The freed capital can also allow supplier to invest in improved production, quality and shorter lead-times.
- Suppliers are ensured payment and have visibility into their cash-flows
- It reduces the risk of suppliers holding back orders as a result of the focal firm paying invoices late.

As SCF offers a decreased CCC and working capital reductions for the buyer and its suppliers it helps financing growth for the buyer and its supply base. Magnus Welander, Head of Cash Management at Scania, explains (Seifert and Seifert, 2009): "Our suppliers had difficulties financing the increased demand. The situation was especially tense because Scania didn't encourage traditional factoring. The implementation helped them – especially the smaller ones – to enjoy unprecedented liquidity levels. Now, they sometimes receive payment after as little as five days."

By evaluating SCF and understanding the issues related, and increased supply chain risk awareness with a financial perspective can be achieved.

Seifert and Seifert (2011) highlights the impact of supply chain disruptions. Publicly traded firms experience negative market reactions as high as 10 percent to announcements of disrupt, which according to Seifert and Seifert is far stronger than other corporate news.

#### 5.1.10 Breakdown of Internal SILOS

A SCF initiative is a good way of breaking down some of the natural barrier between finance and operations. A SCF project and program involve both finance and operations and rely on collaboration between the two. It will further highlight the objectives of each function and can increase the understanding of why certain things are done a certain way, as well as the purpose of specific objectives. By letting SCF be a joint project between finance and operations, people that typically do

not work with each other will do so, hopefully lead to better and tighter relations. With various, and perhaps conflicting, KPI's, it could also be an opportunity to align these better.

SCF offers a great potential for firms to gain a consolidated view across a broad spectrum of commercial functions by linking processes and breaking down silos between treasury, the purchasing entity, logistics functions, suppliers as well as the firm's banks. If the entire end-to-end supply chain process is interlinked, improving visibility, it can further accommodate for cross-functional planning initiatives, reducing costs and introducing efficiencies.

Hofmann (2005) raise the question of whether logisticians and supply chain managers understand and speak the financial language of the executive management team and the board of directors. The external and internal financial challenges facing the firm as a consequence of how the economic output from supply chain activities is managed are non-trivial. To be able to make decisions aligned with top management's corporate objectives, a profound understanding of the levers underlying the many financial alternatives in the supply chain is appropriate. From the interviews conducted, an example is the miss-alignment between supply chain managers not willing to pay a single cent extra for a substantial increase in payment terms if current targets were met, whereas the treasury department viewed it favorably. According to Hofmann (2005), SCF caters for "cross-functional competences to surmount the firm-specific and inter-organizational silos between the operational and the financial side".

#### 5.1.11 Benefits for Suppliers

The benefits for suppliers are similar to those for the focal company. They get the same effect but on the other end of the cash flow. By being paid immediately they release working capital and improve their Cash Conversion Cycle (CCC). Thus, they need less financing from other sources. The SCF can be seen as access to 'loans' outside the balance sheet. It decreases their use of credit and can provide a better financing cost than alternatives, creating a credit arbitrage. Financial cash flow and working capitals will be improved due to the decreased CCC. Suppliers will have a better prediction of their cash flow and can for example decide to sell all their receivables before closing of the books, or put all invoices up for automatic immediate financing. SCF can also allow suppliers to pay their suppliers in advance for a price discount.

If SCF can enable the focal company to grow, it will for obvious reasons allow more business to the suppliers (increasing EVA). Furthermore, the relationship with will be strengthened. If joining SCF, the focal company often need to prioritize Accounts Payables (A/P) handling leading to better and earlier dispute and mismatch management that can lower cost of sales (increasing EVA). Suppliers issues with reconciliation can decrease as they will have real-time transparency on whether the focal company has released invoices or not, and potential issues can be communicated before due dates.

The empirical study strongly suggest that suppliers' have different reasons for joining SCF, and often suppliers that do not have obvious incentives are eager to join.

## 5.2 Liquidity Ratio Effects

For the buying firm, current liabilities increase with extended terms (as accounts payables increase). This impacts the current ratio (current assets / current liabilities) and the quick ratio (current assets - inventory / current liabilities). If the released cash is not utilized, ratios below 1 increase whereas ratios above 1 decrease. For decreased ratios it can be argued that the release cash act as a safety buffer. Often, the underlying objective of SCF is to utilize the freed cash, which leads to decreased ratios. In the case but that would require that the cash is not utilized, which is often the underlying objective with SCF. For a mismanaged firm, the increased liabilities could have large consequence.

Although the same amount goes out in payment, the buyer has to ensure that it can cover its liabilities in case of a business disruption. It should however be emphasized that the time horizon of current liabilities is increased and that in a continuous business situation, it does not make a practical difference, as for each individual day, the amount of liabilities due remains unchanged.

*Example – effect on liquidity ratios*

*Table 26 – Illustration of how liquidity ratios can be affected by SCF*

	W/O SCF (MSEK)	SCF (MSEK)	SCF – Cash is utilized (MSEK)
<b>Current assets</b>	<b>350</b>	<b>425</b>	<b>350</b>
Cash	50	125	50
Inventory	200	200	200
*** other currents assets not displayed ***	100	100	100
<b>Current liabilities</b>	<b>250</b>	<b>325</b>	<b>325</b>
Accounts payables	150	225	225
*** other currents liabilities not displayed ***	100	100	
<b>Current ratio</b>	<b>1,4</b>	<b>1,3</b>	<b>1,1</b>
<b>Quick ratio</b>	<b>0,6</b>	<b>0,7</b>	<b>0,5</b>

*Example – liquidity ratios need to be related with the CCC*

*Table 27 – Comparison of two figurative companies' current assets and liabilities*

	Company A	Company B
Current assets	500	250
Current liabilities	250	250
Working capital	250	0
Current ratio	2,0	1,0

Consider Company A and B in table 27. Company A seems as a more liquid firm. It has an abundant margin between current liabilities and current assets, what looks like a solid current ratio, and plenty of working capital. Company B on the other hand has no current assets and liabilities margin of safety, a seemingly weak current ratio, and no working capital.

But consider if:

- Both company A and B's current liabilities have an average of 30 days in payment period;
- Company A needs 180 days to collect its accounts receivable;

- Company A's inventory turnaround time is one year; and
- Company B is paid in cash up-front and has an inventory turnaround time of 20 days

If that is the case, Company A would not be able to operate without additional sources of funding. Cash is going out at a much higher rate than cash is coming in, and the company is in fact very illiquid. Company B on the other hand, is much more liquid as a result of quick cash conversions.

Thus, it is important that the liquidity ratios are related to the CCC. As seen previously, SCF affect the CCC positively.

### 5.3 Risks Associated with Pursuing a SCF Initiative

#### *Supplier risks*

These risks are:

- Default (not SCF specific, however they could potentially be increased with a SCF program): If a supplier is about to default it could send invoices which they do not intend to fulfill (especially if the buyer approves invoices without controlling goods)
- Less opportunity to withhold payments if suppliers defer from their responsibilities. Often corporations are responsible for some of the supplier's sourcing and/or is supplying them with critical components.
- Suppliers deliberately creating invoice errors to benefit from the SCF setup
- Supplier utilize their improved financial situation to benefit competitors to the buyer (for example by extending terms)

#### *Difficult to unwind*

Released working capital would have to be 'put back' if SCF were to be shut down by both the buyer and its suppliers (as the supplier would not get paid immediately, likely resulting in that the buying firm would need to go back to old terms). This creates an interdependency from a working capital perspective resulting in a 'lock-in' effect. Switching costs increase and it can be more difficult to change sourcing design and partners. Capital would have to be raised in order to handle the changed terms.

#### *Financial institution decides to shut down SCF*

Similar consequences as if the buyer wants to unwind SCF, but more abrupt. This leads to a larger risk of ruining relationships with suppliers. Finding capital to inject in working capital would be more difficult as the buyer would not have control of the SCF exit and its timing.

#### *Supplier on-boarding is unsuccessful*

Project costs are hard to recover. (However, valuable information regarding suppliers is attained).

#### *Processes do not support SCF adequately*

Project and implementation costs are difficult to recover. Suppliers might have expected SCF to work which could be negative for supplier relations. It would also send undesired signals regarding the focal firm's capabilities. Contracts would most likely have to be renegotiated or returned to the old ones.

#### *Organizational inertia*

Employees not adopting to changes is a risk. If they do not see the need for SCF, fear that their own importance is reduced, and lack trust in new processes, there is a risk that SCF cannot be managed.

During implementation, a key objective should be to anchor and communicate the rationale for SCF. Thus, it is very important that the project team is committed to change, and that they can effectively ensure that align different business functions at the focal firm and create acceptance for the project and the changes required by it.

#### *Regulatory risks*

Legislation could aggravate the use of SCF. Late Payments Directive (2011/7/EU) and the situation in France (A cap on payment terms) should be analyzed from a legal perspective. Banks' have likely evaluated risks concerned with this as it would affect their SCF programs substantially and can therefore be consulted.

#### *Additional risks*

Underestimation of scope, size and complexity of the project, bad communication and lack of project schedules.

### 5.4 Costs

#### *Costs for the focal company*

The costs for the focal firm is mainly related to the evaluation, implementation, internal changes and program management. Main cost components are: Project costs (mainly the use of personnel and travels), IT (Alterations in the current system for SCF to function as specified and generating an approval file), renegotiations, legal and accounting, and training and education.

Costs for the program depended on how many suppliers that are target to be included. Some of the costs associated with the implementation and management of a SCF program are difficult to quantify. Especially process change costs and the impact of changed work tasks is difficult to both estimate and quantify.

In appendix E an example of a cost estimation is presented. The categories are relevant for the Axis case, but numbers are general and not Axis specific. As mentioned above, costs dependent on several firm independent factors.

#### *Costs for suppliers*

The cost of the program is financed by the invoice discounts which are carried by the suppliers. Thus, the supplier does not get the face value of their invoices. Changes in invoicing process, documentation with the financial institution and the buyer requires resources, and time has to be spent on a project implementing SCF.

### 5.5 Critical Success Factors (CSF)

The included CSFs in this section are the ones that are most commonly referred to in the literature and from the empirical findings.

As mentioned in the theoretical section, critical success factors are closely interrelated which is the case for the CSFs presented here. The generic critical success factors presented through coding in table 8 (page 26), that are not brought up here are indeed still relevant and should not be left out from consideration.

#### 5.5.1 Top 3 important CSFs

The top three important CSFs are decided based on a combination of the following:

- There is support in academic literature that they are the most critical factors
- They are commonly discussed in various reports and papers as important
- The empirical study highlight these factors and verifies the importance of them

#### *The right banking and platform provider partner(s)*

The banking partner is vital for SCF. Both banks in relation with the thesis express that they can provide support with the focal firm's understand of SCF, supplier analyses, strategy and support with on-boarding, and implementation. This is confirmed by the work conducted at Axis and by SCF practitioner 1 and 2. SCF practitioner 1 and 2 emphasize that the partners have invaluable experience. The dedication of banking and platform partners during the evaluation, implementation and program management is essential for success as possess the knowledge and tools/platforms for SCF to function.

The partners' requirements affects the buyer's and the supplier's processes and they are also responsible for most of the documentation and contracts, which is the key for preferred accounting and legal aspects to be fulfilled. For a focal company with low amounts of experience with financing solutions in the supply chain, and where resources in terms of employees with time on hand is rather scares, it is important that the financial institution and service provider can provide a large amount of support.

It can be categorized as a factor related to the project team, as they (and top management) are in control of which organizations to partner with, and develop the criteria for the decision. It can also be view as an external factor, as the buyer has no direct control over the action of the partners or their proprietary systems and processes.

In Seifert and Seifert's (2011) study, the banking partner is the most expressed implementation success factor. Out of 23 respondents, 65 percent say that the banking partner have an important impact on the success. By regression analysis, they find that relationship strength and working capital reduction have a positive correlation and conclude that executives should invest time selecting the best banking partner.

#### *Internal sponsorship and top-management support*

Top management support signals the importance and priority of SCF. It reduce the risk of organizational inertia and employees reluctant to change job tasks and priorities (related to the CSFs 'internal acceptance of changes in job designs and processes' and 'internal alignment'). As a well-executed implementation needs solid leadership, and commitment to the change, it is important that top managers are involved. Top managers shape a firm's strategies, business processes and objectives (which is closely related to the coded CSFs 'clear goals' and 'sufficient resources' in table 8, page 26); therefor it is essential that these decision makers are aware of SCF benefits, possibilities and constraints, in order to achieve a successful initiative. Furthermore, top management gives legitimacy to performance measures and the direction of the company. SCF practitioner 1 underline that without executive involvement, it is difficult to determine the over-all objective of SCF and get internal commitment for it.

When onboarding suppliers' it is important that top managers' take an active part (as discussed in section 6.6.2). This is confirmed by the empirical findings where SCF practitioner 1 and 2 express that C-level management support was essential for the success of their SCF initiative. Top-management support is a general CSF, and has been highlighted in this study as especially important for SCF.



In Seifert and Seifert's (2011) study, internal top-management support is the second most expressed implementation success factor. Out of 23 respondents, 52 percent say that internal sponsorship have an important impact on the success. They find that top management support is an important leverage as individual departments do not possess enough leverage to keep stakeholders, particularly suppliers, at the table. They highlight that their empirical data suggests that implementations are twice as successful when the CEO leads it rather than the CFO.

#### *Degree of automation and order-to-payment process alignment*

It is a key requirement that processes are aligned with the SCF design the focal company aim at achieving. As seen in section 5.3, much of the risk associated with pursuing a SCF initiative is related to process, and adequate processes are essential for SCF to function. The process is and degree of automation is also related to the coded CSFs 'control techniques' and 'feedback'. The degree of automation have impact on administrative work required to manage SCF; more automation accommodate for further SCF growth without increasing the work load in equal proportion. Moreover, automation allows for automatic control that might be impossible to do manually.

Payments are especially important, as they are the actual way of giving up cash for the buyer's costs. Processes have to ensure that this is done correctly in order for the buyer to keep relations with suppliers, not incur penalty costs and not mistakenly paying too much. It is important that the buyer can monitor and control the payment flows.

#### 5.5.2 SCF Related CSFs

##### *Buying company in charge of the initiative*

It is important that suppliers get the sense that the focal company drives the SCF initiative for the benefit of itself and suppliers. Suppliers likely trust the focal company more than banks, and if they feel that SCF is something the bank is pushing out they are probably more reluctant to join the initiative. The suppliers' should feel that the buyer is offering both an opportunity, and not that the bank is selling a certain product. It is also important for the trust of the future program at an initial phase that the supplier can acknowledge that the buyer has full understanding of what SCF is and how it will work.

In Wuttke et al's (2013) case study, one of the companies was unsuccessful in on-boarding supplier's when the bank tried to approach suppliers. The suppliers felt that there was a catch to SCF and did not trust the external bank that they had no relationship with. This is also reflected by SCF practitioner 2, who experienced that onboarding was more successful when suppliers was approached by the buyer with an intention to try and pressure the bank to achieve inexpensive funding. Wuttke et al., (2013) quotes a manager regarding who is in charge of the initiative: "suppliers don't trust banks like they trust us. Due to long collaboration, these suppliers know us and once we explain the idea, they say, 'okay, we are interested in the benefits.' "

##### *Scope of suppliers and effective on-boarding*

The amount of suppliers included into SCF has a direct impact on the benefits. It is important that a critical mass of suppliers are on-boarded for SCF to pay off. Both financial institutions and SCF practitioners from the empirical research emphasize that it is of great importance to be able to on-board significant suppliers early on. This brings a quick success to the SCF initiative which is important for most other CSFs. Furthermore, the initial suppliers will experience all the initial problems (as a result of the buyer's non-existing experience). Thus, appropriate suppliers should be targeted. At first, high impact suppliers with a high likelihood of joining should be targeted to get a large initial effect.

The relation with these suppliers should be strong so that unforeseen problems can be solved collaboratively if they occur.

#### *Good supplier relations and communication*

As seen in the theory regarding supplier relations (section 3.10), the degree of relation with a supplier is vital for pursuing and managing collaborate efforts. For SCF to be beneficial for both the focal firm and its suppliers, the focal firm need to understand the suppliers' situations and have their trust. A good relation is a strong foundation for the supplier to believe that SCF aim for, and will in fact, benefit both parties. Most convenient financial arrangements have does not have a mutual benefit, and the win-win aspect might not be recognized immediately by the suppliers. By understanding the supplier's situation, and having a solid communication regarding SCF, the odds of succeeding improves. Furthermore, a strong relationship will mitigate risks and conflicts arising if problems and errors with the program occurs. Strong relations and trust enables, rather than hinders, high performance in the supply chain. This CSF is especially important during onboarding of initial (SCF critical) suppliers.

The empirical research highlighted that strong supplier relations with previous experience from joint efforts improved the chances of successful on-boarding. Table 8 (page 26) highlight communication channels as a CSF focusing on internal communications, this is of course still highly relevant, but in SCF, the external communication with suppliers and the financial institution is critical.

Communication and collaborate with suppliers throughout implementation is important to understand suppliers and make them fell involved. After implementation it is important to keep getting feedback from suppliers about the SCF program to ensure that they get, and see, the SCF benefits.

#### 5.5.3 General CSFs relevant for SCF

##### *Internal acceptance of changes in job designs and processes*

It is important that the organization is able to adapt to the changes that inevitably follows with a SCF initiative. The culture and traditional "way of doing business" for specific processes and tasks will be affected, and SCF should not just be viewed as a change in recipient of payments. SCF must be related to the focal company's overall business targets; the goal is not simply to onboard and implement SCF but to improve the company's possibility to accommodate for growth, reduce supplier risk, and improve relations with strategic suppliers. The reasons behind SCF must be explained to all affected by it, and appropriate training and education on new job tasks will simplify the SCF initiative internally.

##### *Performance measures and clear goals*

The performance measures should reflect the objectives with SCF, which in turn should support the focal company to reach its business goals. As a firm competes as an entire company, business goals should not get lost among operating measures. These should be separated, and performance measures chosen to help directing activities so that business goals are reached. It is better to have a few clearly defined performance measures with absolute target levels, than many measures making it difficult to know what to focus on. Also, it is important that the result is evaluated to not only answer 'what' but also 'why', in order to take appropriate actions. By introducing SCF performance measures into the firms balanced scorecard, SCF practitioner firm 2 give SCF and the measurements creditability and importance.

The working capital reduction and improvements on DPO and CCC from SCF should be measured. SCF practitioner 1 and 2 both emphasize that when communicating the impact SCF has, it is preferable to use the freed working capital as it gives a better understanding and is easier to relate to (MSEK in freed capital compared to a DPO increase of x %). If internal processes are changed with the objective of reducing manual work, this must be monitored and measured.

Besides focusing on internal goals the external reality of supplier satisfaction must be measured as suppliers perceived benefits from the initiative is central for the success of SCF. SCF practitioner 2 express that as the time to approve invoices is important for suppliers, it is measured and the results shared with suppliers to further enhance transparency with the initiative.

There should also be specific KPI's for the implementation and roll-out to keep track of accountability. This could for example be specific dates and specific 'gates' such as 'first supplier adoption'. The time it takes to approve invoices should also be kept track of, as it has consequences on the suppliers' benefits.

Wuttke et al., (2013) observe that performance measurements and incentives of individual managers are important for the success of SCF. They quote a financial manager from one of the case study companies: "In our experience, SCF is likely to fail without changes of incentive structures."

#### *Excellent project management*

The project team need to consist of people understand the benefits of a successful SCF implementation and can relate it to the firm's overall long term goals. The project team must be a cross-functional collaboration as it is important that the members of the team in combination have knowledge of the financial aspects, and a previous relation with suppliers. The project team must be able to align the company's finance and strategic procurement functions and create clear definitions that relate to the functions' targets. Although top-management support and sponsorship is necessary, the project team needs to be empowered to make critical decisions. It is evident from literature that project management is a CSF for all projects (see table 8, page 26, for examples).

A project plan that has optimistic but achievable schedules should be created to maintain a sense of importance and urgency. The projects objectives should be defined to avoid disagreements and misunderstandings regarding the project.

#### *Internal alignment*

As SCF have many internal stakeholders with different objectives and competences it is important that these are aligned and strive for a common goal. All must be aware of the benefits from the arrangement and their role and SCF's key drivers. As procurement, operations, finance, treasury, accounting, IT and legal divisions are affected, it must be ensured that organizational specificities to not hinder the SCF execution (EBA, 2014). Internal collaboration is essential from the start of evaluating the project and once the program is active. As an example, procurement might mistakenly pay more attention to price discounts at the expense of worse payment terms if they are not aligned with finance (McKinsey, 2010).

The main process stakeholders must be involved in decision making with regard to process changes so that all aspects are captured, and that the processes fit their requirements. Internal alignment is to a large extend effected by the coded CSF 'communication channels' presented in table 8 (page 26).

#### 5.5.4 Categorization of CSFs

As suggested by Belassi and Tukel (see section 3.12), grouping factors make it easier to identify the drivers behind them and the key aspects to consider in order for the organization to take action based on the factors adequately.

Table 28 provides a categorization of the suggested CSFs.

*Table 28 – Categorization of CSFs*

<b>Project</b>	<b>Project manager and team members</b>	<b>Organization</b>	<b>External environment</b>
The right banking and platform provider partner(s)	Communication and feedback with/from suppliers	Internal sponsorship and top-management support	The right banking and platform provider partner(s)
Degree of automation and process alignment	Internal acceptance of changes in job designs and processes	Focal company in charge of the initiative	Scope of suppliers
Focal company in charge of the initiative	Performance measures	Good Supplier Relations and Communication	Good supplier relations
Scope of suppliers	Excellent project management	Internal acceptance of changes in job designs and processes  Internal alignment	

## 6 SCF Project Framework

*This chapter provides the reader with a framework that can be followed for a buying firm's SCF project. First, the framework is presented which is followed by elaborations on the different parts that make up the framework. Examples are provided to illustrate how different aspects can be analyzed. The chapter aims at answering RQ3.*

A general framework for a SCF initiative is presented in figure 21. It is important to understand the purpose of the framework is to act as a guideline, and not to be followed exactly. Every SCF project is unique, and needs its own consideration depending on the business context. The framework presents common aspects that are important to evaluate and decide on. The project should not be static in the early phases, and the project team needs to be flexible when conducting their work.

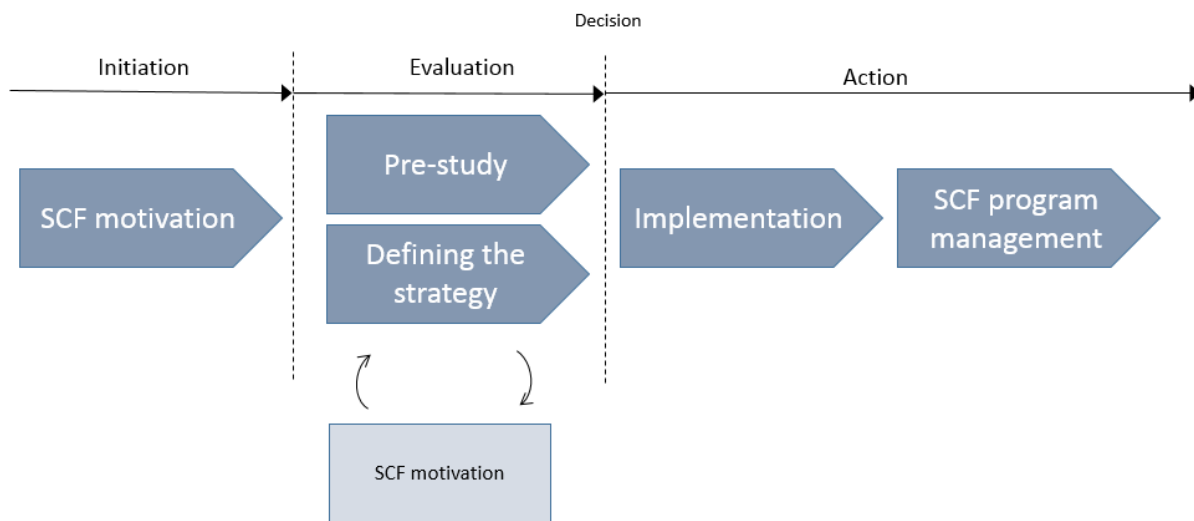


Figure 21 – SCF project framework

### *Initiation phase*

The SCF initiative process starts with some sort of motivation for considering SCF. It is important that the motivation and desired effects of SCF are made clear, in order for the evaluation phase to be focused on key aspects, as well as for the SCF project to be related to the business's overall objective. The motivation naturally affects the SCF strategy that should be crystallized during the evaluation phase.

From interviews with SCF practitioners, the importance of being able to alter the underlying motivation for SCF during the evaluation phase of a project is evident. In some cases, the initiative to evaluate SCF comes from specific departments and middle management with a specific purpose in mind. In such cases, it is important to consider the full potential of SCF during the evaluation in order to cater for a SCF solution that can capture the full potential given the overall business direction. This does not necessarily mean that the initiators' rationale should be ignored, and often the initial motivation is the main purpose for realizing the SCF solution. However, the buying company needs to take steps back during the evaluation phase to update the motivation.

### *Evaluation phase*

The definition of SCF strategy and pre-study are closely interrelated. The desired strategy impacts what the pre-study needs to evaluate, whereas the results from the pre-study affect the desired

strategy. Thus, these two should be conducted in parallel. The SCF innovation need to be redefined to the buyer’s specific context.

*Action phase*

This is where the strategy is transformed from an idea into reality. The result of the pre-study helps guide a successful implementation. Once the implementation is finished, there need to be an active management of the SCF program.

6.1 Motivation

As seen in the table 13 and 17 (page 29 and 31) regarding firms’ motivation for SCF, there are distinct differences between focal firms, pursuing what appears to be similar buyer-centric SCF approaches.

First, the company need to see where is the initiative coming and why. The initial motivation can either stem from a top-down approach to improve the firm’s performance or through a bottom-up initiative from further down in the organizations. It is important that both approaches align with the over-all business objects of the firm as well as the affected departments. Figure 22 and 23 illustrates potential steps in order to determine the adequate motivation and rational for SCF.

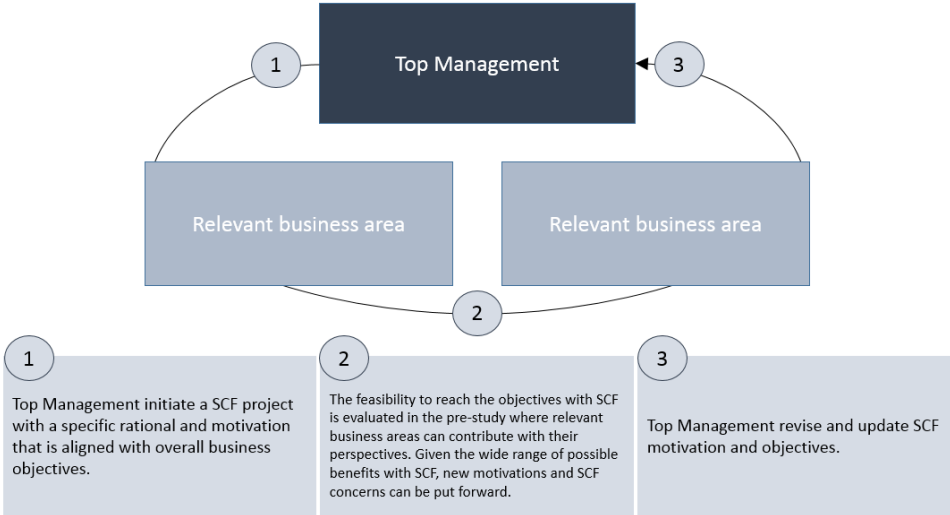


Figure 22 – Top-down approach to clarify SCF motivation and rational

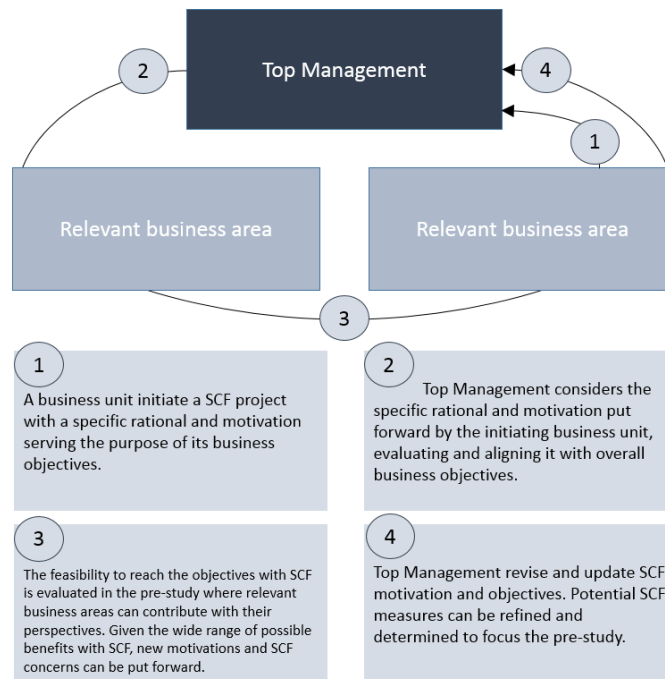


Figure 23 – Bottom-up approach to clarify SCF motivation and rationale

In order for a SCF initiative to achieve desired effects, the underlying reasons for SCF must be clearly defined. Understanding the motivation for exploring SCF opportunities is key to what type of SCF aspects that should be evaluated and how it should be implemented. It allows the company to focus the scope of the project. The motivation for SCF should be based on the strategic direction that the company aim for. By defining clear objectives of what the company wants to achieve, the results from the pre-study will be easier to evaluate and form the basis for a decision on whether to pursue SCF.

At the initial phase, the critical internal stakeholders must be aware of what SCF is and how it generally work in practice. By thoroughly reviewing the relevance of SCF and the benefits it can provide a buying firm with, the organization can clarify what it is that it is looking to achieve.

As Wuttke et al. (2013) discuss with regards to the case studies they analyze, the focal firms' priorities and motivations have implications on the SCF strategy implementation. For example, a firm prioritizing cash flow over process automatization will draw more attention to efforts extending payment terms with suppliers over IT integration, whereas another firm focusing on offering visibility and credit flexibility for its suppliers might strive for a set-up allowing suppliers to sell fractions of their invoices. As a result, the differences in motivation will be manifested in the SCF implementation. Wuttke et al. purports that for instance, the focal firm could integrate the SCF platform with its enterprise system or utilize a financial institutions web portal for each transaction.

## 6.2 Defining the strategy

When defining the strategy, the motivation for SCF and the pre-study should give answers to strategic decisions for the design of the SCF-program. It is important that the strategic decisions are closely linked to the motivation for SCF and the overall business objectives. The different aspects for considerations are illustrated in figure 24. When defining the strategy, it is central to identify missing parts in the pre-study with respect to the strategic decisions. These need to be analyzed and updated to ensure a suitable strategy for the buying firm. Furthermore, when the strategy is defined, some of the findings in the pre-study and unanswered questions can be further specified. For example, once

it is clear how many suppliers to on-board initially, the cost of the implementation can be estimated with better precision and the potential freed working capital can be pinpointed to a greater extent.

The aspects in figure 24 are of course not independent of each other. If for example the focal firm aim at taking most of the quantitative benefits for themselves by just letting the suppliers break even on the introduction of SCF, terms would likely have to be individualized for each supplier.

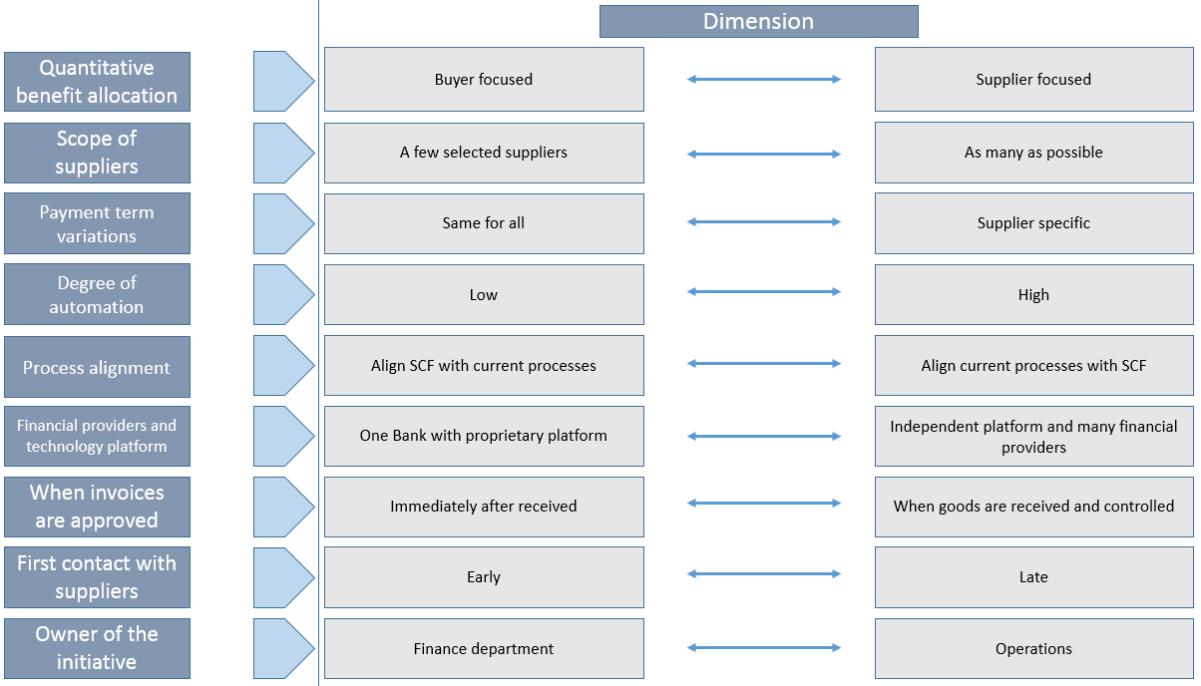


Figure 24- Strategic decisions in a SCF project

*Quantitative benefit allocation*

It must be decided how much of the ‘earnings’ from SCF that should be aimed for. The two extremes would be to either implement SCF without changing the terms (the suppliers getting all quantitative benefits) or extending the terms so that the suppliers just breaks even or even ‘lose’ from the extension (the buyer getting all quantitative benefits).

*Scope of supplier*

Whether to try and include all suppliers in the program or just a few critical (based on either risk mitigation, quantitative benefits from the specific suppliers, or a combination). For obvious reasons, the amount of suppliers has implications on costs and administrative work.

*Payment term variations*

Having the same terms for all suppliers is positive as it makes it easy for the organization to keep track of terms and the DSO measurement. Furthermore suppliers will not be annoyed with others having better payment terms. With a strategy aiming at all suppliers (regardless of SCF) having the same terms, SCF might be more attractive to the suppliers as they will see the (often increased) terms regardless of if they chose to use SCF. Furthermore increased terms is probably easier for suppliers to accept if they know that all suppliers (including their competitors) have – or will have to - accepted it. There is also the possibility of having the same terms for all suppliers joining SCF, leaving the other terms unchanged.



The downside a payment terms consolidation is that they are not altered based on the suppliers individual situation. As such, there is a risk of losing specific supplier that cannot cope with the increase (even if SCF is implemented). Furthermore, the full potential for quantitative benefits while keeping suppliers at a certain risk level, can most likely not be achieved as the terms are not individually decided based on the suppliers' situations.

#### *Degree of automation*

The number of invoices that will need to be handled and the expected growth of the SCF initiative is important to understand when determining the degree of automation. A low degree of automation most often requires less costly process changes, but more manual resources once the program is up and running. Fully automation can mean that more errors are identified, but there is also a risk of systematic errors continuously 'slipping through' as there is no manual control. This is closely related to how the processes are designed

Today's range of automated end-to-end IT solutions in combination with automated transmission of business documents and information in the supply chain means that the SCF set-up can be fully automated from a process perspective. This can accelerate cycle-times from when invoices are received until they are approved. Furthermore, it decreases the time spent on administrative tasks. A fully integrated solution with event based data from the supply chain as input to the enterprise system would allow for a more flexible approach where the approval point can be customized depending on the situation or supplier. Incorrect information in the invoicing process extends the time period between sales and the collection of payables (EBA, 2014). A fully automated process means that for an invoice without discrepancy, there is no manual interaction except for placing the order. Full automation in the process means losing the manual control and thus relying completely on the system. It would mean a more complicated system set-up to be able, for example, to match invoices with POs, general purchase agreements, and data from goods reception and control.

#### *Process alignment*

A decision need to be made on the level which to align current processes with the desired SCF set-up, in contrast to setting up SCF to fit current processes. Processes need to be aligned with the type of SCF set-up preferred by the focal company. There are two opposing approaches, and combinations of the two. The first is to align the SCF set-up with the focal company's current processes as much as possible. The other approach is to change processes so that it aligns with the most preferred SCF set-up, not considering the current set-up.

#### *When invoices are approved*

This is closely related to process alignment and degree of automation. When risks, accounting and legal aspects, and the financial implications of when invoices are approved has been analyzed, it need to be decided when the focal firm are going to approve the invoices. See the process part in section 6.3.4 for some of the aspects to consider.

The time it takes to approve invoices have a direct impact on the benefits for the suppliers. As seen in figure 25, (which assumes that the supplier values its alternative financing cost at five percent) approving invoices on day 20 compared to day 10 reduces the savings substantially, possible making SCF unattractive to the supplier. Thus, buyers have to be able to ensure, and convince suppliers, that they have adequate processes in place and that invoices will be approved within a certain time-frame.

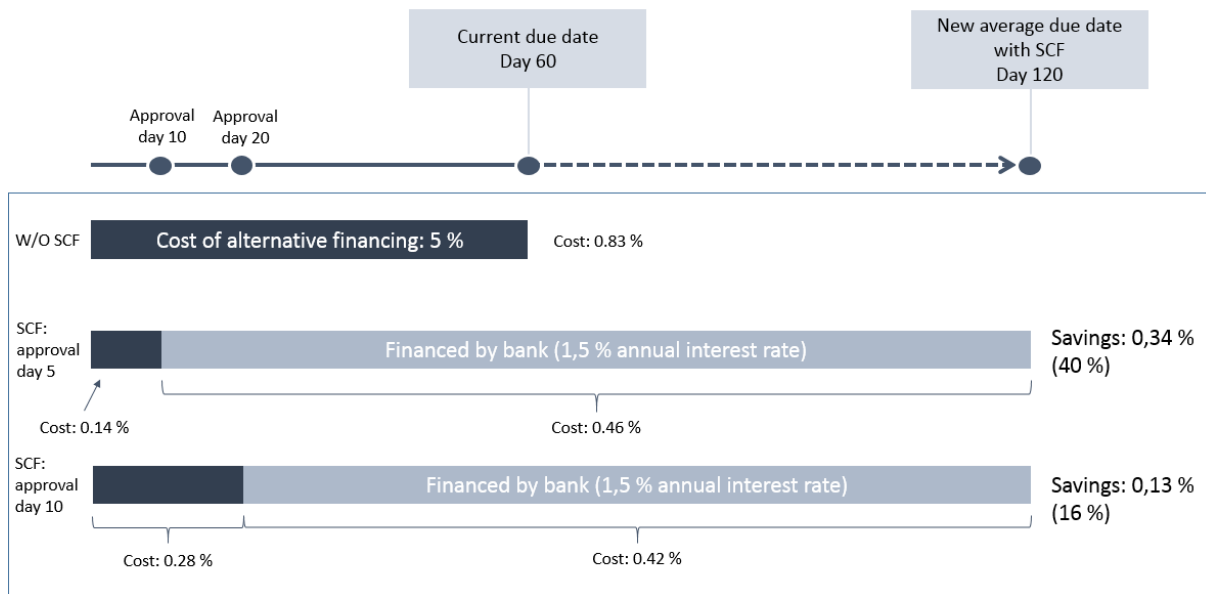


Figure 25 – Comparison of suppliers saving when the approval time is five or ten days

The approval possibilities can be generalized into three main alternatives:

- Immediate approval
- Approval after the invoice and PO match
- Approval after the invoice, PO and goods control match

If automatic matching is at place, or introduced, the upside of approving invoices before matching is small, as the matching is done immediately. If there is no automatic matching at place, it would require process and IT changes, resulting in a more complex process to handle for the IT system but one that is very common, especially at larger firms. If most of the invoice discrepancies is because of PO errors (focal firm's responsibility), suppliers are not content about approval delays. However, if errors are mostly a result of the suppliers sending invoices with incorrect information, SCF would put more pressure on suppliers to send correct invoices (as they are not accepted, and entered into the focal company's system otherwise). The first is to approve all invoices regardless if the PO and invoice match, and the second is two approve invoices once there is a match.

There is an obvious risk/benefit trade-off in choosing when to approve as seen in figure 13 (page 23). Risks involved include:

- Supplier default: If the supplier is about to default they could potentially send invoices were they do not intend to fulfill their part.
- Suppliers start sending invoices before the transfer of title has been transferred could affect how the SCF is seen from an accounting perspective.
- In some other way deliberately creating invoice errors to benefit from the focal company not ensuring that suppliers have fulfilled their part of the purchase before invoices are approved.

Some of these risks can be mitigated by random controls on whether invoices are sent at the right time. Following up on the invoices detected to be incorrect after the approval by analyzing the reasons for the discrepancies and pressuring suppliers (if problems often occur) to send valid invoices is essential. It is important to closely monitor suppliers' financial health and risk of bankruptcy, but that is the case regardless of SCF.

These aspects need evaluation in the pre-study.

### *Financial providers and technology platform*

An independent technology platform makes the focal firm and the suppliers less dependent on a single financial institution. It can also introduce competition between several funders, lowering the discount rate for the supplier. On the other hand, the utilization of an independent technology platform is not for free. Having a single financial and platform provider allow for a tighter relationship, less communication and manual interaction. Much of the SCF-program administration can be 'outsourced' to the banking partner.

### *First contact with suppliers*

This should reflect the importance of the supplier and their likelihood of joining. Should be aligned with the on-boarding strategy for specific suppliers.

### *Owner of the initiative*

Clarify organizational responsibilities and determine which department that should 'own' SCF and the degree of centralization (if there are subsidiaries affected by SCF). Operations generally has a closer relation to the suppliers, whereas finance are in control of the invoicing process and financial measurements. It is a delicate decision that needs careful consideration. The literature and empirical findings suggest that it varies between firms and there is no right or wrong.

## 6.3 Pre-Study

A natural first step in the pre-study is to determine whether SCF is an appropriate solution in the near future. Then it is advisable to conduct a spend analysis in combination with a rough evaluation of SCF's potential pay-off. The idea is to get a sense of if SCF can yield the desired effects and which suppliers to focus on. After this, the pre-study can be formalized with thorough evaluation of suppliers and other key aspects.

### 6.3.1 Spend and Pay-Off Analysis

To understand where the largest potential for working capital improvements is a spend analysis is necessary. By identifying spend distribution among suppliers (illustrated in figure 26), it should be obvious where the largest potential is.

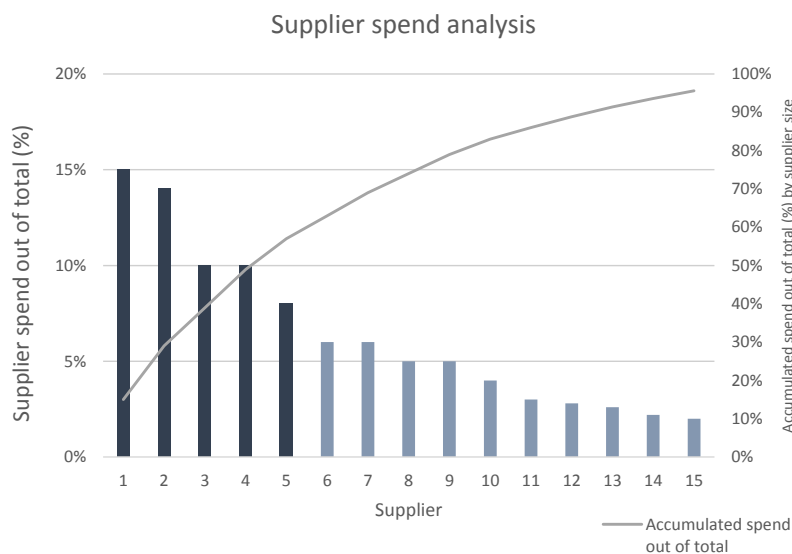


Figure 26 – Illustrative example of a buyer's spend distribution

The spend analysis can enable the firm to understand the required scope of suppliers necessary to yield a satisfactory pay-off. The spend analysis can be combined with a pay-off chart (as exemplified in figure 27 and 28). The combination enables the company to understand whether some large suppliers are critical for the SCF initiative to be successful. As discussed regarding the CSF ‘scope of suppliers’, it is important that the first suppliers focus one provides a substantial pay-off and are likely to adopt the initiative. A categorization of suppliers would allow for a structured way to identify suppliers that should be prioritized initially. Figure 29 provides an example, where the x-axis ‘potential’ can be a weighted estimation based in on initial findings and/or the buyer’s knowledge on suppliers’ experiences with SCF and their attitude towards it. It can also be a more objective measure, such as credit worthiness. If risk mitigation is the key motivation for SCF, the categorization can be based on the Krajlic matrix as illustrated in figure 30.

		Released working capital (MSEK)									
AP (MSEK)	100	SCF hit rate									
		10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
Increased terms	30%	3	6	9	12	15	18	21	24	27	30
	50%	5	10	15	20	25	30	35	40	45	50
	70%	7	14	21	28	35	42	49	56	63	70
	90%	9	18	27	36	45	54	63	72	81	90
	110%	11	22	33	44	55	66	77	88	99	110
	130%	13	26	39	52	65	78	91	104	117	130
	150%	15	30	45	60	75	90	105	120	135	150

Figure 27 – Example of a freed working capital pay-off matrix

Released working capital (10 years)* (MSEK)			
Hit rate (%)	Days extension (%)		
	50	75	100
30	73	110	146
40	97	146	196
50	122	183	244
60	146	220	293
70	171	256	342
80	196	293	390
90	220	330	439

\*Based on 5 % spend growth per year

Figure 28 – Example of a freed working capital pay-off matrix over a ten year period

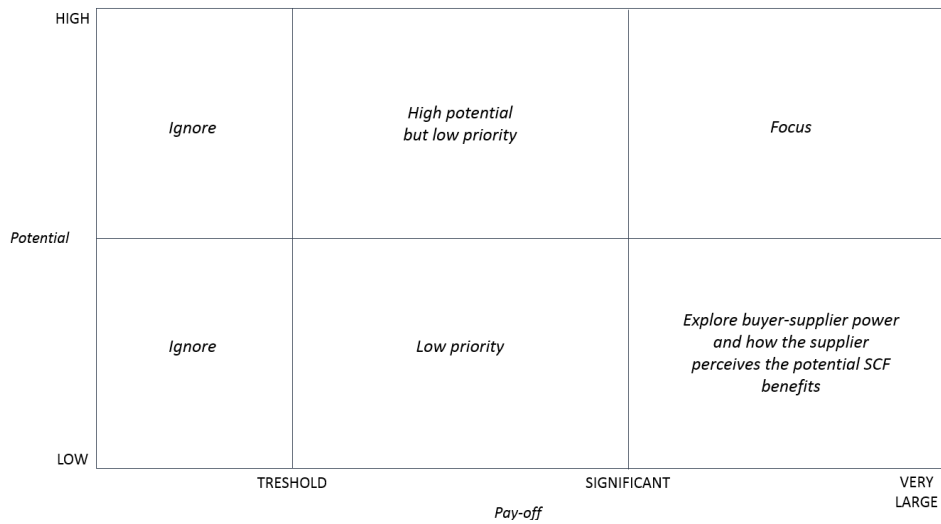


Figure 29 – Example of categorization to determine adequate suppliers for initial on-boarding

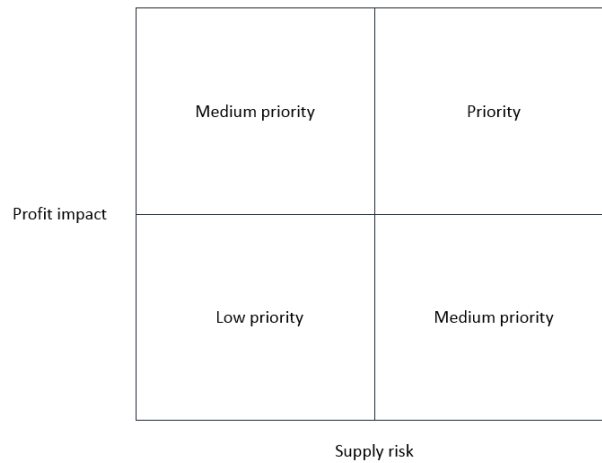


Figure 30 – Example of categorization based on the Krajlic matrix to determine suppliers that are subject to high impact risk

### 6.3.2 Supplier analysis

After deciding on the prioritized suppliers, these must be evaluated thoroughly. Figure 31 illustrates some of the key aspects to consider and ideal characteristics for a supplier considered for SCF.

		Ideal characteristics	Comments
Relationship	➔	Important partner with a long term relationship ambition	Relationship is key for on-boarding initial suppliers. The 'lock-in' effect require suppliers that are stable and trustworthy
Volumes	➔	Large and reoccurring volumes	Cost/Benefit analysis for each individual supplier. Larger volumes means greater impact
Credit rating	➔	Credit rating lower than the focal company	Credit arbitrage make SCF attractive to suppliers
Invoicing performance	➔	Few discrepancies in invoicing	A large amount of erroneous invoices increase administrative costs
Geographic location	➔	Located in a country where legislative and accounting aspects are favorable for SCF. Proximity to the focal company	Geographical location impact supplier on-boarding
Receivable financing	➔	Existing expensive financing with receivables from the focal company and involvement in SCF with other buyer(s).	With existing expensive receivable financing, the credit arbitrage is obvious. Experience from SCF simplifies on-boarding and the processes
Payment terms	➔	Shorter than average for the focal company. Long terms toward their suppliers.	Suppliers' DSO and DPO indicate whether the focal company is currently paying early. Long payment terms promise greater arbitrage benefits
Industry	➔	General participation rate in SCF for the industry is high.	High awareness of SCF

Figure 31 – Areas for consideration in a supplier analysis with respect to SCF

### Buyer-supplier relationship and power

Analyze the current relationship with suppliers considering the following aspects (refer to section 3.10 for theoretical background):

- Is there trust between the focal firm and the supplier
- Are there many conflicts
- Are conflicts solved in an adequate and effective manner
- How long are the commitment
- Has there been previous and is there current collaborate efforts or would SCF be the first
- Is sharing of information common
- What is the general attention from the supplier's top management
- Is the supplier meeting performance expectation
- Where would the relationship be placed on the 'supplier hierarchy pyramid' (figure 15, page 24)
- Long term relations and strategic outlook – what is in the future

Analyze the buyer-supplier power considering the following aspects (refer to section 3.11 for theoretical background):

- How much of spend is dedicated to the supplier
- How much of the supplier's sales are from the buyer
- Are there alternative suppliers (or substitute products) and what are the switching costs
- Are there alternative buyers and what are the switching costs
- Dependence on technology
- Dependence on know-how
- Is there potential for 'backward or forward integration

### Volumes

- What is the spend dedicated to the supplier

- How much of the spend is likely addressable in a SCF initiative
- Are the volumes reoccurring
- What is the forecast for future volumes

*Credit rating and financial aspects*

- What is the supplier's credit rating (or an estimation)
- How much debt does the supplier have
- What kind of debt do the supplier have
- What is its cost of debt (or estimated cost of debt)
- Does it have liquidity problems
- How financial strong is it
- What is its WACC (estimation)
- Is it focused on cash-flow and working capital metrics
- Has the supplier asked for early payment to improve their financial reports
- How is the supplier's financial knowledge
- Current involvement in SCF
- Current involvement with factoring
- Current involvement in asset backed (receivables) securitization programs

Valuable information can be found for listed companies in their annual reports.

*Payment terms*

- Current terms
- Are terms more or less advantageous than their competitors
- What are the buyer's competitors terms for similar suppliers
- What is the DSO
- How do terms compare to their average DSO
- What is the DPO
- How is their DPO compared to DSO

Analyzing these bullet points are important for numerous reasons. Perhaps the most critical is understanding whether the buyer's payment terms are shorter than suppliers' DPO (financing suppliers' operations for free). It is common that competitors utilize the same downstream supply chain and in such case it is important to know whether the buyer's terms are shorter than competitors (effectively financing competitors). Benchmarking payment terms and working capital metrics help assess competitiveness, efficiency and the potential for working capital improvements through by increasing terms.

*Invoice analysis*

This is important for understanding the administrative burden of the program as well as potential risk from erroneous invoices. It also impact the degree of automatization and process choice. Furthermore it highlights the potential of improvements with the process changes. Examples of factors subject to analysis:

- Amount of invoices
- Invoice and purchase order errors and the source of the errors (buyer or supplier)

*Geographic location*

Needs consideration from an accounting and legal perspective. Also has an impact on the CSF ‘the right banking and platform provider partner(s)’.

*Supplier risk*

To capture the benefits of risk mitigation, a risk assessment based on the potential risks that SCF could potentially mitigate should be conducted. The Krajlic Matrix (see section 5.1.9) can be used to identify critical suppliers, analyzing supplier’s base on supply risk and profit impact.

6.3.3 Quantitative analysis on SCF impact

A quantitative analysis on the impact of SCF should be conducted. It is important to include sensitivity analyses. The following is of interest (some are part of the supplier analysis):

- Potential of freed working capital in total
- Potential of freed working capital for individual suppliers
- Potential over a 10 year period (consider increased/decreased spend)
- Price reduction for suppliers (see figure 32)
- Savings based on WACC for suppliers (or any other cost of capital) (see figure 33)
- Breakeven cost of capital for suppliers (see figure 34)
- Decreased revenue per year for supplier due to the discount (given that they collect payment as soon as possible)
- The cost of freed working capital based on revenue decreases for suppliers
- Effect on CCC and its components for suppliers and the buyer
- Estimated NPV of the project

Figure 35 illustrates a tool that calculate the savings for the buyer and supplier, where the different input parameters can be altered. There is also a net present value calculator and the effects of SCF on a specific invoice can be analyzed. Figure 36 illustrates a tool where the quantitative effects can be analyzed based on specific suppliers.

Price reduction on suppliers' invoices							
New terms (days)	Discount rate						
	0,8	1	1,2	1,4	1,6	1,8	2
90	0,19%	0,24%	0,28%	0,33%	0,38%	0,43%	0,47%
105	0,22%	0,28%	0,33%	0,39%	0,44%	0,50%	0,56%
120	0,26%	0,32%	0,38%	0,45%	0,51%	0,58%	0,64%

\* Based on suppliers getting paid on day 5

Figure 32 – Example of analysis on: Price reduction on invoices for suppliers based on new terms and discount rate

Saving based on Weighted Average Cost of Capital (WACC) for suppliers*							
Old terms (days)	WACC						
	4	6	8	10	12	14	16
30	0,28%	0,42%	0,56%	0,69%	0,83%	0,97%	1,11%
60	0,61%	0,92%	1,22%	1,53%	1,83%	2,14%	2,44%
90	0,94%	1,42%	1,89%	2,36%	2,83%	3,31%	3,78%

\* Based on suppliers getting paid on day 5

Figure 33 – Example of analysis on: Savings based on WACC



New terms	Breakeven cost of capital for suppliers (%)												Old terms	60
	Discount rate (%)												Days until approval	10
	0,6	0,8	1	1,2	1,4	1,6	1,8	2	2,2	2,4	2,6	2,8	3	
90	0,96	1,28	1,60	1,92	2,24	2,56	2,88	3,20	3,52	3,84	4,16	4,48	4,80	
105	1,14	1,52	1,90	2,28	2,66	3,04	3,42	3,80	4,18	4,56	4,94	5,32	5,70	
120	1,32	1,76	2,20	2,64	3,08	3,52	3,96	4,40	4,84	5,28	5,72	6,16	6,60	

Figure 34 - Example of analysis on: Breakeven cost of capital for suppliers

Supplier specific														Discount
Spend MPI / year (MSEK)		1500												1%
Supplier	Spend (% of MPI total)	Current terms (days)	New terms (days)	Hit rate (%)	Avr. Days to approve	Spend/year (MSEK)	Average A/P (MSEK)	Freed WC Axis (MSEK)	Freed WC Buyer (MSEK)	Average new terms	Discount per SCF invoice	Lost revenue from discounting invoice (year - MSEK)	Cost of freed working capital for supplier	
Supplier 1	15,0%	60	105	100%	5	225	37,5	28	34	105	0,28%	0,63	1,82%	
Supplier 2	14,0%	60	105	100%	5	210	35,0	26	32	105	0,28%	0,58	1,82%	
Supplier 3	10,0%	60	105	100%	5	150	25,0	19	23	105	0,28%	0,42	1,82%	
Supplier 4	10,0%	60	105	100%	5	150	25,0	19	23	105	0,28%	0,42	1,82%	
Supplier 5	8,0%	60	105	100%	5	120	20,0	15	18	105	0,28%	0,33	1,82%	
Supplier 6	6,0%	60	105	100%	5	90	15,0	11	14	105	0,28%	0,25	1,82%	
Supplier 7	6,0%	30	105	0%	5	90	7,5	-	-	30	0,28%	0,25	N/A	
Supplier 8	5,0%	60	105	0%	5	75	12,5	-	-	60	0,28%	0,21	N/A	
Supplier 9	5,0%	60	105	100%	5	75	12,5	9	11	105	0,28%	0,21	1,82%	
Supplier 10	4,0%	60	105	0%	5	60	10,0	-	-	60	0,28%	0,17	N/A	
Others	17,0%	60	105	0%	5	255	42,5	-	-	60	0,28%	0,71	N/A	
<b>Total / Average</b>	<b>100,0%</b>	<b>58,2</b>	<b>88,8</b>	<b>68%</b>	<b>5</b>	<b>1 500</b>	<b>243</b>	<b>128</b>	<b>156</b>	<b>88,8</b>	<b>0,28%</b>	<b>0,38</b>	<b>N/A</b>	

Figure 35 – Example of a quantitative supplier analysis (numbers are figurative)

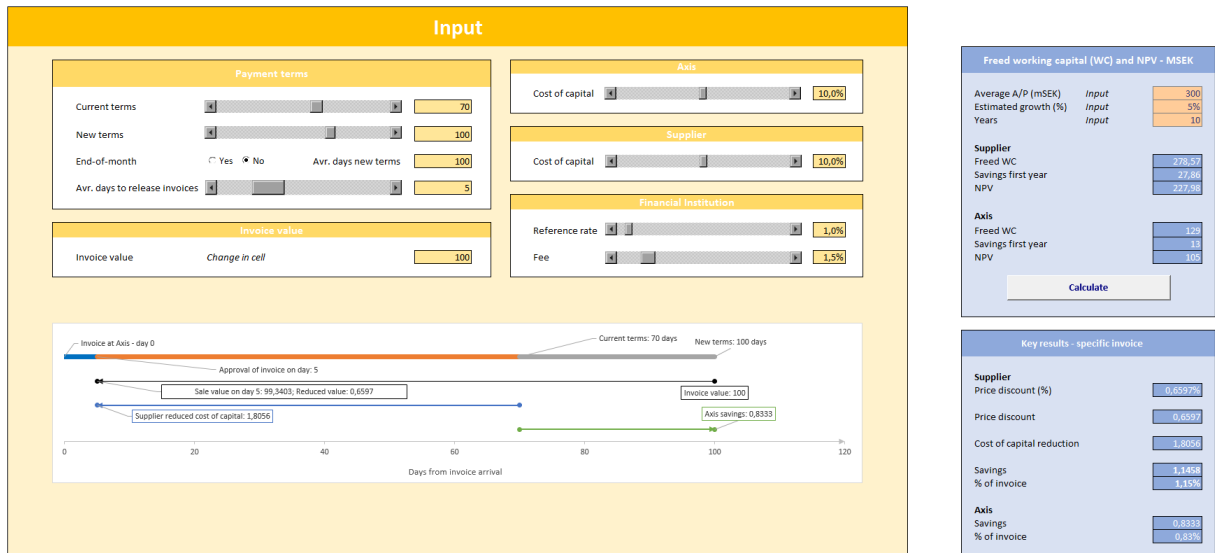


Figure 36 – Example of a quantitative analysis on specific invoices and a NPV calculator (numbers are figurative)

### 6.3.4 Other aspects to evaluate

#### Processes and degree of automation

To understand the required changes in processes it is important to map out the entire purchase-to-pay process. Understanding the implications of making changes is essential for a successful SCF initiative. An important point in the flow to identify is where the transfer of title (ownership) is transferred to the focal company, as this is when the suppliers are (most commonly) eligible to issue the invoice. This is generally determined by the INCOTERMS. A general flow chart can be seen in figure 3 (page 5).

#### To consider when deciding on processes

Time from transfer of title until the focal company have controlled the goods (illustrated in figure 37) which indicate the time on average before the invoices can be approved if the buyer wish to control goods before approving invoices.

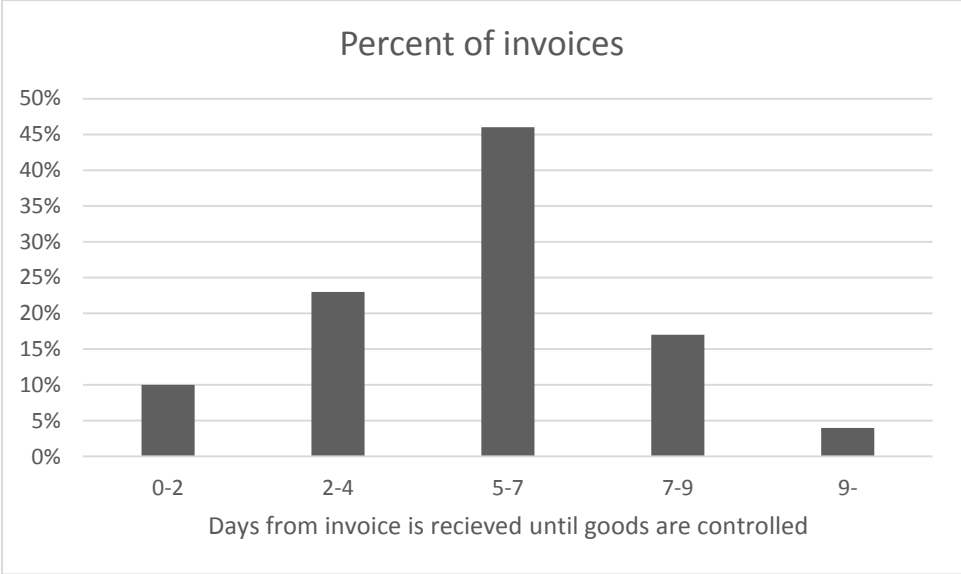


Figure 37 – Example of an analysis on time from invoice arrival until goods are controlled (numbers are figurative)

Potential improvement potential for processes outside the scope of SCF is of interest, as changes would be easier to conduct together with the SCF changes. It is of interest to conduct a holistic evaluation of the purchasing, A/P and payment processes with respect to:

- i) Degree of automation
- ii) Purchasing mandates
- iii) Attest policies

This has implications on SCF, and before making an SCF implementation it is advisable that the focal company knows whether there might be a substantial process change in the near future. If that is the case, the process changes and SCF should be considered with regard to each other.

*Credit Notes and Returns*

Approving invoices before goods control will for most firms lead incomplete deliveries, and in such cases it is important that there are pre-determined routines to deal with these errors. The most common way this is solved is by so called ‘credit notes’ given to the buyer, rather than cancelling previous invoices and payment (which could be very complicated). Furthermore, there is also the risk of errors slipping through the system regardless of approval decision. Thus, these routines must be put in place, and it must be ensured that they align with accounting and legal aspects. Moreover, the terms for the credit notes must be determined with the supplier (for example if a credit note can be deducted with the next payment). Another possibility is that the focal firm retains a percentage of the payables to off-set potential credit notes.

*Approval*

The potential to onboard suppliers improves with quick approval and it is easier to motivate a larger term extension. Beside aspects mentioned in the ‘defining the strategy’-section, the following aspects should be considered (and are of great importance of invoices are to be approved before goods are controlled):

- Dependency
  - Suppliers' dependency on the focal company is important, so that suppliers need to follow invoicing instruction in an adequate manner to avoid problems with pre-approval. Mutual dependency is also positive when considering pre-approval
- On-going and reoccurring business makes post-approval dispute settlement possible
- Few changes to current processes. Automated invoice and PO matching can easily be used as an automatic check on whether to approve the invoice
- Centralized purchasing simplifies control of the processes as well as supplier behaviors

*Financial institutions and platform provider*

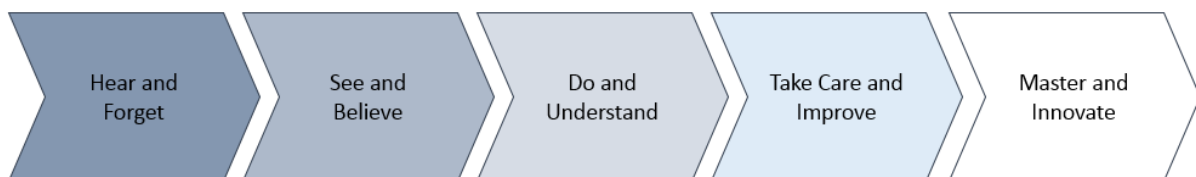
Consider the following in addition to the RfP (section 6.4.1):

- Strategic reasons for choosing a specific bank partner
  - Preference of increased relation with a specific bank due to benefits outside SCF
  - Current relations
- Supplier preferences regarding banking partner
  - Local knowledge
  - Access to a specific bank and building a new relation
  - Currently used banks
  - Current involvement in SCF programs with specific banks

*Organizational implications*

Identify the organizational changes required. It is beneficial to involve departments and individuals who will be involved somehow during the process early on in order to create awareness and successfully create 'internal acceptance of changes in job designs and processes' which is a CSF.

It is important to understand that individuals within the buying firms are at different stages. These individuals will likely be at different stages of the personal process related to the changes (figure 38). The objective is to ensure that they can evolve through the process and ultimately be able to innovate and initiate analysis and improvements themselves.



*Figure 38 – Personal process related to organizational change (with inspiration from Lewin, 1951)*

The pre-study need to highlight the organizational effects from SCF. The following three aspects should be given consideration:

*1) Implementation*

For implementation and supplier on-boarding there need to be a SCF-team with personnel from different functions effected by SCF. The project need to be given a high priority and top-management must be prepared to be involved in communication with suppliers. It is important that the roles are clearly defined, and that people involved have sufficient time to use on the project. An example of the

project team, and costs associated with implementation and supplier onboarding, is presented in appendix E.

## *2) Management of SCF*

Priorities in invoice handling, matching and approval are subject to changes, and in combination with process changes it could lead to new and/or changed work tasks for certain individuals at the focal firm. There need to be a SCF steering group and someone with responsibility for the program.

## *3) Who benefits*

As SCF is a broad proposition with implications at various departments and functions at the focal firm, it is reasonable to ask who will see the benefits. McKinsey (2010) suggests that “they will be most readily perceived by the CFO and treasurer, but issues of operational risk and supply chain management will engage the CEO and COO as well”. This can lead to organizational inertia, and thus, potential incentive structure should be considered.

## *IT*

Required IT changes has to be identified. This closely related to the process decided on, and it is important that the buying firm has full awareness of what will be required during implementation. Without the adequate IT support and process steering, SCF will not function as intended. For the buying firm to succeed with the CSF ‘Degree of automation and process alignment’ IT system alignment is essential. The buying firm must analyze the required time it will take to make the necessary changes and resources, for the implementation plan to be accurate.

## *Accounting*

Prior to implementing a SCF transaction, it is important that the buyer understand accounting implications (and possibly consult with independent accountants on accounting and financial reporting implications).

For a SCF-initiative to be attractive to suppliers, the sale of invoices should preferable be ‘true-sales’ so the cash they receive is not considered a loan. Therefore, the focal firm needs to ensure that the specific SCF-initiative is expected to be approved by suppliers accounting.

As the focal firm most often is not supposed to be offering financial services, it should be ensured that the initiative will be considered a purely contractual change, where the focal firm is not involved in financing suppliers. Moreover, a reclassified of accounts payable to debt due to accounting requirements on SCF would be unattractive as debt would increase on the focal firm’s balance sheet.

Depending on where in the process invoices are approved there may be different implications from an accounting perspective. It is especially important that the implications of the approval timing in relation to the transfer of title are considered.

As the focal firm guarantees payment at maturity of the invoice to the financial institution, regardless of trade disputes or other rights of offset against the supplier, it is possibly a higher commitment to pay to the financial institution than what the focal firm owes the supplier. Thus, it should be evaluated whether this have to be considered as bank financing and not a trade payable. Accounting treatments need to be carefully planned to avoid reclassification of trade obligations into bank debt.

Sodhi and Dalla (2012) discusses the issues with reclassification and highlight that accounting requirements forcing accounts payables and accounts receivables reclassified as debt renders SCF unattractive for buyers and suppliers due to the balance sheet impact.

### *Local jurisdictions*

Local jurisdiction can have a large impact on a SCF-initiative. The following need to be considered and evaluated from a legal perspective with the transfer of title, payment terms, contractual obligations, and SCF in general in mind:

- The locations of the SCF entities to which the buyer have supplier debts
- The locations of SCF supplier sites where the buyer's products and/or components are produced and shipped from
- The location goods are shipped to
- The entities responsible for the purchase and its location

### *Costs*

Make a thorough cost estimation based on the strategic decisions. An example can be seen in Appendix E.

### *Consider risks associated with pursuing a SCF initiative*

The pre-study need to evaluate risks associated with SCF (see section 5.3). It is essential that the internal stakeholder are aware of the risks so that they can be minimized. With a thorough risk analysis, resources can be allocated to the critical areas and decisions are made considering possible consequences.

### *Critical success factors*

Determine which success factors that are most critical for the company. For instance, if there already is a strong top-management commitment and support, this is not a critical success factor anymore (aside from not losing it), and focus can be put elsewhere. The general CSFs should be considered (section 3.12), and the SCF CSFs should guide the initiative.

### *Listen to suppliers*

When to communicate the SCF initiative with suppliers is a strategic decision. It should however be considered during the pre-study phase as it could potentially highlight important factors that have implications on SCF suitability for the focal firm as well as changing the rationale and motivation for the initiative. In many cases, it is a delicate decision, where it is recommended that the (at the time) motivation and results from the pre-study are clear and thorough. If it is judged as sensitive, the first contact can be made once the strategy is defined, as it gives the focal company a better position to answer questions that arise. The downside in such case is that suppliers input is not available when forming the strategy. Of course, the strategy can be redefined once again in such case.

It is unlikely that all suppliers can be contacted at this stage and critical suppliers for SCF to be viable should be given priority.

#### 6.3.5 Decision point

Once the pre-study is finished and the strategy defined, a decision on whether to move forward with the SCF-initiative is necessary. The decision pyramid illustrated in figure 39 provide four areas which should all be assessed as positive for the SCF-initiative.

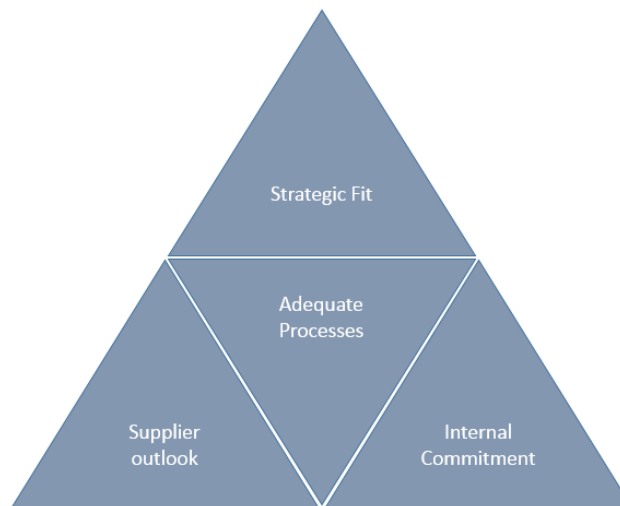


Figure 39 – Decision pyramid

### *Strategic Fit*

The pre-study should indicate that a SCF program can achieve a positive impact in terms of what the motivation for SCF is. A cost/benefit analysis with a sensitivity analysis should confirm that the benefits from SCF outweighs the costs.

### *Supplier Outlook*

The likelihood of enough suppliers joining the program (on satisfactory terms) in order to achieve the benefits should be considered high.

### *Adequate processes*

The processes must be able to be changed in such way that SCF can work efficiently.

### *Internal commitment*

Top management needs to support the project. Furthermore, it is important that the different internal stakeholders understand the value of SCF.

## 6.4 Implementation

As highlighted previously, the implementation needs to align with the defined strategy connected to the overall business goals. Therefore, general aspects to consider for implementation are provided rather than a specific method of implementation. The aspects are however structured in, to an extent, logical order from a time perspective:

- Review the pre-implementation process
- Ensure that all internal stakeholders understand the defined SCF strategy, objectives and required process changes
- Get internal consensus
- Create a cross-functional team led by a committed project manager and reassure top management support
- Clarify organizational responsibilities
- Design the implementation process (including on-boarding of initial suppliers) and action plan

- Define a project management framework: planning, budget, resources and allocations
- Consider common implementation enablers and inhibitors
- Decide on a SCF Bank (they can provide valuable support during implementation)
- Supplier introductions
- Ensure the proposed SCF is appropriate for selected suppliers
- Build awareness and knowledge in SCF – internal and external
- Make adequate process changes
- Build a strong communication and training strategy
- Define cross-functional KPIs aligned with the SCF strategy
- On-boarding of selected suppliers
- Ensure collaborative team work across internal business functions, suppliers and the SCF provider
- Run a pilot
- Go live
- Monitor result of the on-boarded suppliers
- Monitor the effectiveness of the program

#### 6.4.1 RFP process of the financial institution

Important aspects to consider:

- Fee structure and prices
- Amount of time and resources dedicated to support implementation and supplier on-boarding
- Financial institutions local knowledge in areas where suppliers are located
  - Their local knowledge effect the accuracy advising on implementation, supplier on-boarding, and accounting and legal aspects
  - Having a presence in proximity to our supplier can be of great support to suppliers in terms of relation, support, language, and transfer of payment to their accounts
- Size of their SCF portfolio (programs and total financing)
  - A larger SCF portfolio could decrease the risk factor of a bank shutting down SCF
  - The focal company's attention from the Bank could be effected by the bank's portfolio size
- Whether the bank is obliged to purchase (i.e., finance) all approved payables or if the collection of payables is still the supplier's own responsibility
- Limits and thresholds
  - Limits on how much the bank will finance (total and for specific suppliers)
  - What the limit is based on and if there can be growth without reaching it
- Payments
  - Limitation on currencies
  - Electronic system and payment method
  - Direct debit as an option
  - Need for dedicated bank account
- Dates
  - If the bank accept invoice approval as preferred by the focal company
  - When suppliers can request financing (after the invoice is approved by the buyer)
- Handling discrepancies and invoice disputes (crediting on another SCF invoice for example)
- The bank's capabilities in doing KYC on suppliers

- Demand a detailed implementation plan from the bank before signing
- Ask for references (preferably from companies similar to the buyer)

#### 6.4.2 Supplier on-boarding

##### *Three key aspects for supplier on-boarding*

1. Top management should approach key suppliers

This signals the importance and priority of SCF and it is more likely to get top-management attention from suppliers.

2. Approaching suppliers with the right message

The right messages needs to be communicated to suppliers. Marketing the benefits of SCF to suppliers is key – if the business case is clear to suppliers it will help to speed up the on-boarding process. If there is little or no credit arbitrage, it is important that suppliers understand why the SCF discount cost should not be compared to the cost of a conventional loan, but rather with the Weighted Average Cost of Capital (WACC).

- The benefits for the suppliers and the buyer needs to be explained in a trustworthy manner
- Suppliers must be assured that the administrative parts can be handled without being time-consuming
- If joining SCF – AP handling is prioritized resulting in better and earlier dispute and mismatch management.

It is not always easy to understand what benefits suppliers perceive from SCF. It is important to keep in mind that the focal company should not overlook supplier benefits that cannot be measured in numbers. For instance, the pure availability if a new source of funding might be more important than how much they can save based on their WACC. The transparency and cash-flow predictability can be worth a lot even if the supplier does not use the credit. It also decrease administrative tasks for the suppliers if the reconciliation is made easier.

The focal company can invest, drive volume which will lead to more business for the supplier.... Also likely that the focal company will prioritize suppliers involved in SCF when placing orders.

3. The buying firm must approach the right persons at the supplier.

These persons must have the financial knowledge to understand the benefits from the concept as well being in a position where they will be involved in the decision to adopt SCF at a later stage. It is preferable that people from suppliers' top-management are involved in the discussions.

##### *Approaches in on-boarding*

The approach towards suppliers in on-boarding can differ. One is that suppliers should join the program by free will and on their initiative after the SCF possibility is presented. In this case it is important to ensure that suppliers can see the benefits in joining. For example, the focal company can arrange workshops with CFO's to highlight SCF potential and ensure supplier's that the initiative is based on mutual benefits as well as explaining accounting and legal issues.

The buying firm can also leverage market power to 'persuade' suppliers by simply stating that payment terms will be extended regardless and it is up to the supplier to take the SCF offer or leave it.

##### *To take note of during onboarding*



- The information that can be extracted implicitly from suppliers' reactions such as
  - Better understanding about their target and how they value working capital and cash-flow
  - Who are responsible for what from a financial perspective
  - The site-specifics independence and mandates
- Lessons learned on what the suppliers perceive as positive and negative with SCF

## 6.5 SCF program management

The following tasks are to be done with respect to the SCF program:

- On-boarding of additional suppliers
- Responsibility for communication with suppliers regarding SCF
- Continuous supplier risk analyses from a SCF perspective
- Follow-up on whether the focal firm is achieving expected targets and results (Measurements and KPI play an important role)
- Ensuring that Suppliers are not utilizing the SCF program to gain advantages by deliberately creating invoice 'errors'
- It needs to be assured that the knowledge of SCF and the program remains with the focal firm if key persons at the focal firm or suppliers quit.
- Motivate SCF when spend in the program is no longer increasing
- On-going training and education – this is key for new stakeholders to evolve through the individual change process (figure 38)
- Have a prepared and agreed exit strategy

## 7 Conclusion

The thesis provides a rather holistic view of the buyer-centric payables financing solution. It is assumed that a firm considering SCF has decided on this rather than other alternatives presented in the literature (see for example the different definitions of SCF in section 3.1). The main benefit of the buyer-centric payables financing solution is that it is relatively standardized from an SCF offering perspective and once the program is up and running, it requires a low degree of decision making. As such, the thesis is not covering aspects on what to consider when deciding on which type of SCF solutions that are appropriate. The choice on type of SCF activities need to be related to the corporate motivation for SCF, and thus, if it is not obvious for a firm that the buyer-centric payables financing solution is the most suitable, the evaluation part of the framework (figure 21, page 49), would have to be extended with other options. The aspects presented in the evaluation are still relevant, however, the different effects depending on SCF type of solution would need to be evaluated. For example, a firm thinking of PO financing (see figure 3, page 5) would need to evaluate risks from a new perspective (see figure 13, page 23) as well as accounting and legal aspects. For a more holistic approach on SCF in the evaluation phase, it is even more critical that the motivation is clear and that there are objective targets, so that different SCF activities can be compared.

It is difficult to find generic and objective criteria to tell whether SCF is suitable for a focal firm. The differences in motivation, the numerous potential benefits, and differences in need of process changes and the difficulty with defining supplier relations makes every SCF case different. Furthermore, as highlighted in the empirical research, without discussing with suppliers, it is difficult to know how they value to benefits from SCF. Ultimately, the focal firm need to evaluate its expected benefits with the expected costs and risk in order to make a SCF decision. This thesis has provided a framework for deciding on SCF covering relevant aspects that should be considered and analyzed. It is up to the individual firm to put emphasis on the aspects that are of most importance for them.

Whether SCF is suitable for a buying firm is heavily dependent on their specific situation, with the most obvious factors being the credit rating in relation to suppliers (making credit arbitrage plausible) and that supplier spend is substantial enough and reoccurring (to yield a large pay-off from increased terms). The motivation for SCF has been shown to vary. It can however be questioned how much firms signal the benefits for suppliers as the main motivation, and how much that is actually an internal working capital purpose.

### 7.1 Conclusion on the Research Questions

#### *RQ1*

RQ1 is answered by describing the benefits from SCF and relating it to the value added to the company, illustrated by the EVA measurement. The relevance of SCF should be evident, but in order to understand the potential, it is important to consider the aspects put forward in the framework, as firms will see different effects depending on their characteristics. SCF is by no means a 'fit-all' solution that enables every firm to release working capital with a very low cost and few risks. However, for companies with adequate supplier bases, SCF can be a relative 'simple' way of improving working capital, releasing cash and decreasing supply chain risks.

#### *RQ2*

Critical success factors are presented and explained which provides firms with guidance on important aspects to allocate ample resources to. It is however still up to the individual companies to conduct adequate activities in order to ensure a successful SCF project. The thesis provides some examples of

what can be done with the framework, but the firm need to evaluate the CSFs, relate them to their business context and introduce them into their project in a suitable manner. The following CSFs were identified with the first three as the most critical:

- The right banking and platform provider partner(s)
- Internal sponsorship and top-management support
- Degree of automation and order-to-pay process alignment
- Buying company in charge of the initiative
- Scope of suppliers and effective on-boarding
- Good supplier relations and communication
- Internal acceptance of changes in job designs and processes
- Performance measures and clear goals
- Excellent project management
- Internal alignment

### *RQ3*

The last research question is answered by providing a framework. The question asks for the rational SCF project process; from the theory and empirical study, a rational project process is proposed, but there is no claim of it being the most rational. It is important that firm's has a sense of judgment, as the framework does not provide exact definitions on whether a certain aspect is beneficial or not. However, by reviewing the framework in combination with the theoretical parts of the thesis, the buying firm should be able to get a solid understanding of the characteristics that would make SCF suitable.

## 7.2 SCF and the triple bottom line

The profit contribution should be obvious to any reader of this thesis or other literature covering SCF. The social and environmental contribution is hard to gauge. There could be possible indirect effects (such as supplier's being able to pay their employees in time, or that the freed capital (for the buyer and suppliers) can be used to increase investments on social and environmental aspects. The thesis has not found any specific data or indication that SCF have a direct impact on social and environmental factors from a macro-perspective.

## 7.3 Suggestions for further research

It would be interesting to perform a large empirical study on the relevance of SCF, in order to prove that it does indeed create value for the buying firm in addition to freed working capital. Examples include statistical analyses on the following:

- the EVA (or other value added measurements) effect
- the market capitalization before and after SCF
- whether companies with SCF experience less financial disruptions in their supply chains
- supplier characteristics that makes a successful on-boarding likely

Moreover, to motivate a structured approach and thorough pre-study, a comparison between companies pre-studies and the outcome of their SCF projects would highlight the importance (or unimportance) of the project framework.

During the work with this thesis, few financial risks have been identified. Thorough research with focus on financial risks with SCF would be important, as it can highlight further areas that need consideration, or strengthen the hypothesis that the level of financial risk introduced with SCF is close to non-existing.

As highlighted in the thesis, the increased dependency on supplier's can be both positive and negative. Research on the effect of SCF on relationships and dependency would contribute to the understanding of SCF, and further enable adequate analyses on supplier suitability for a buyer's SCF program.

The effect on the WACC from a SCF initiative would likely be welcomed by firm's that focus on their capital structure.

All the empirical research that I have come across during this thesis focus on buying firms. Thus, there is a void in research regarding SCF for suppliers. It would be much welcomed with studies focusing on suppliers' perspectives.

#### 7.4 Contribution

##### *Contribution to practice*

The thesis provides a conceptual description of the buyer-centric payables solution, its relevance and suggestions on how to evaluate SCF. Thus, the thesis should be of relevance to any organization that is either unaware of SCF, or is considering it. For Axis, the thesis has allowed me to conduct most parts of a SCF pre-study in parallel, allowing them to take a decision on whether to implement SCF and the requirements for Axis if doing so.

##### *Contribution to theory*

The main contribution to theory is adding a practical perspective to RQ3 based on my experience working with the pre-study at Axis. The empirical findings verify some of the existing research. The thesis also provides suggestions on CSFs, an area where there is currently a gap in the literature.

## 8 APPENDIX

### 8.1 Appendix A - Working Capital (WC)

Working capital is defined as the difference between current assets and current liabilities (see figure 40). Shin and Soenen (1998) explain that WC is the result of the time lag between the expenditure for raw materials and collection of payment from customers for the finished product. The time is a result of production processes, sale of finished products and accounts receivables and payables not being instant and simultaneous activities. A general operational cycle for a manufacturing firm is illustrated in figure 40, which necessitates the need for WC. The continuous flow of cash from the buyer to inventory to accounts receivable and back to the buyer is referred to and measured as the cash conversion cycle (described in the next sub-section).

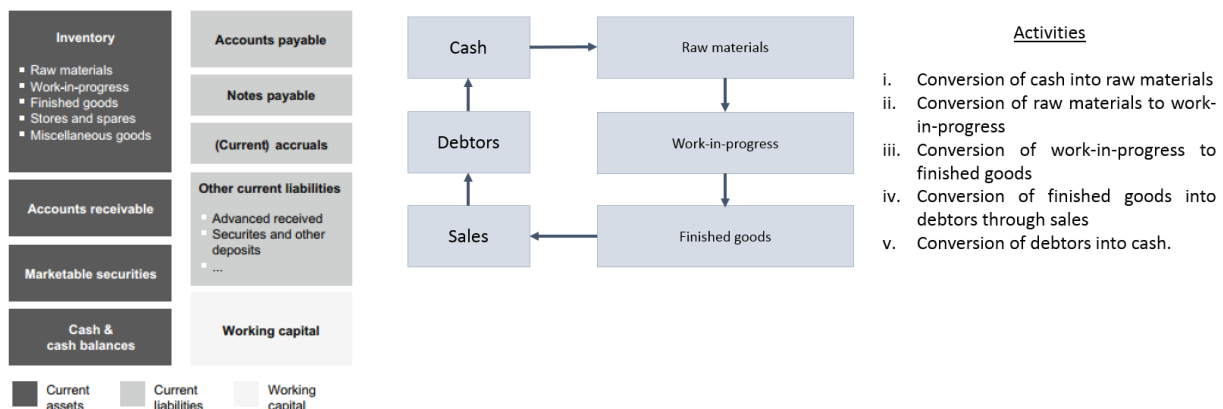


Figure 40 – Working Capital

WC ties up cash, and a WC increase generates a negative cash flow. Conversely, a working capital reduction generates a positive cash flow (Damodaran, 2002). Tied up working capital incur an implicit cost on a company as capital bound in the business cannot be used for investments or purchasing more supply. According to Farris and Hutchinson (2003), working capital also indicates the efficiency for a supply chain.

### 8.2 Appendix B - Cash Conversion Cycle (CCC) and its components

The Cash Conversion Cycle (CCC) is a measurement developed to capture ongoing liquidity from a firm's operations. It is a powerful tool to efficiently control and manage material and financial flows by tracking inventory and payment periods within the supply chain (Hofmann and Kotzab, 2010). The CCC represents the average net time between cash expenditure for material and components, until the collection of cash for the finished product (Randall and Farris II, 2002). It measures the time it takes to go from cash inflow to cash outflow. The concept is displayed in figure 41.

Gallinger (1997) describes CCC from a cost perspective as "the cash conversion cycle measures the number of days the firm's operating cycle requires costly financing to support it. You can think of the operating cycle as the number of days sales are invested in inventories and receivables". Richards and Laughlin (1980) puts more emphasis on the profitability effect, stating that CCC measures the time it takes a company to convert cash-on-hand into more cash.

If CCC is short or negative, a company can generally be considered to manage its working capital well. A long CCC mean that a company is likely to have much working capital tied up in operations. The working capital can therefore not be used for value-adding purposes.

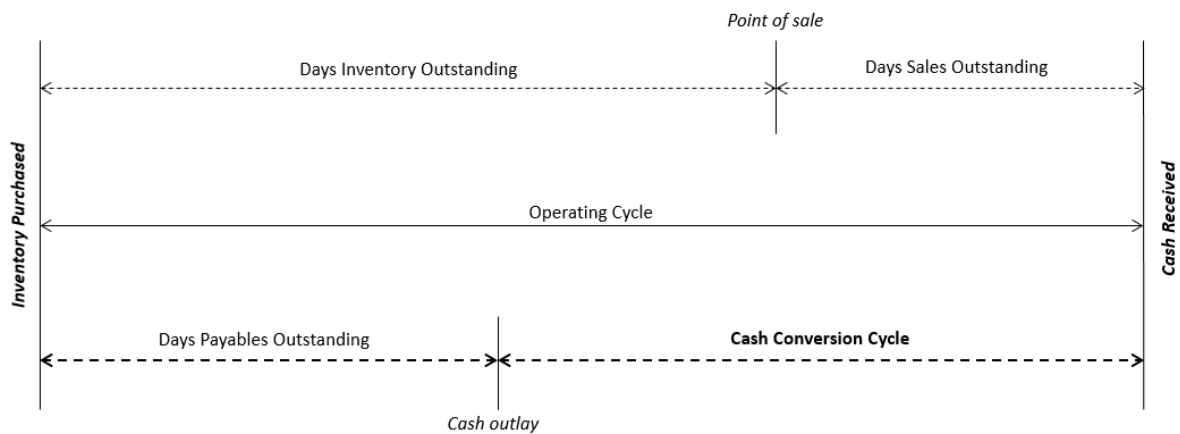


Figure 21 - The concept of CCC. Adapted from Richards & Laughlin (1980)

The CCC is also known as Cash-2-Cash (C2C) cycle and is calculated as by subtracting Days Payables Outstanding (DPO) from the sum of Days Inventory Outstanding (DIO) and Days Sales Outstanding (DSO) (equation 1).

Equation 1

Calculation of the Cash Conversion Cycle (CCC)

$$CCC = DIO + DSO - DPO$$

### Cash Conversion Cycle components

#### Days Inventory Outstanding (DIO)

DIO represents the average time goods are kept as inventory. It measures the average time from the transfer of ownership for goods from the supplier, until the ownership is passed on to a buyer.

Equation 2

Calculation of the Days Inventory Outstanding (DIO)

$$DIO = \frac{\text{Inventory}}{\text{Cost of Goods Sold}} * 360$$

#### Days Sales Outstanding (DSO)

DSO represents the average time to collect an outstanding receivable. It measures the average time from customers are invoiced until payment is received.

Equation 3

Calculation of the Days Sales Outstanding (DSO)

$$DSO = \frac{\text{Accounts Receivables}}{\text{Net Sales}} * 360$$

### Days Payables Outstanding (DPO)

DPO represents the average for an outstanding payable. It measures the average time from the transfer of ownership for goods from the supplier, until the supplier is paid.

Equation 4

Calculation of the Days Payables Outstanding (DPO)

$$DPO = \frac{\text{Accounts Payables}}{\text{Cost of Goods Sold}} * 360$$

### 8.3 Appendix C - Weighted Average Cost of Capital (WACC)

A commonly used definition for a firm's cost of capital is the WACC. It factors in a company's portion and cost of debt and the expected return from shareholders. Equation 5 describes how WACC is calculated as the weighted average interest expected by the company's shareholders and debt holders in combination (Ross et al. 2005).

Equation 5

Calculation of the Weighted Average Cost of Capital (WACC)

$$WACC = \frac{E}{E + D} * i_E + \frac{D}{E + D} * i_D * (1 - r)$$

Where:

*E*: Market value of equity      *i<sub>D</sub>*: Cost of debt

*D*: Market value of debt      *i<sub>E</sub>*: Cost of equity

*r*: Cash tax rate

### 8.4 Appendix D – Calculation on CCC effect for a growth company

Company A	
Cumulative Average Growth Rate (CAGR)	15 %
Cash Conversion Cycle (CCC)	60 days
Sales	10 BSEK

WC injection necessary = CCC / 360 \* Additional sales

First year: (60/360)\*(0,15\*10) BSEK

The next ten years: (60/360)\*(10\*1,15^10-10) BSEK

## 8.5 Appendix E – Cost Estimations

The numbers are figurative and are not relevant to any SCF project:

<b>Costs</b>	Persons needed	Time (mths)	FTE / year	Cost / year	<b>Cost</b>
<b>Implementation</b>					
Project sponsor	0,1	6	0,05	2 000 000	<b>100 000</b>
SCF program leader	1	6	0,50	700 000	<b>350 000</b>
Operations	0,5	6	0,25	700 000	<b>175 000</b>
Finance	0,5	6	0,25	700 000	<b>175 000</b>
IT	0,5	6	0,25	700 000	<b>175 000</b>
Accounting	0,2	3	0,05	700 000	<b>35 000</b>
Legal	0,2	3	0,05	1 000 000	<b>50 000</b>
Internal training and education	0,2	6	0,10	700 000	<b>70 000</b>
<b>Implementation total</b>					<b>1 130 000</b>
<b>Renegotiation and supplier onboarding (specific costs)</b>					
Legal costs	0,5	4	0,17	1 000 000	<b>166 667</b>
Top-mgmt finance	0,3	4	0,10	2 000 000	<b>200 000</b>
Top-mgmt operations	0,3	4	0,10	2 000 000	<b>200 000</b>
Operations	0,5	4	0,17	700 000	<b>116 667</b>
Finance	0,2	4	0,07	700 000	<b>46 667</b>
Travel costs					<b>1 000 000</b>
<b>Renegotiation and onboarding total</b>					<b>1 730 000</b>
<b>Others</b>					<b>500 000</b>
<b>SUM</b>					<b>3 360 000</b>

<b>Costs</b>	Persons needed	Time (mths)	FTE / year	Cost / year	<b>Cost</b>
<b>Program</b>					
SCF program leader	0,5	12	0,50	700 000	<b>350 000</b>
Support	0,4	12	0,40	700 000	<b>280 000</b>
<b>SUM</b>					<b>630 000</b>

Table 29 – Example of cost drivers



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