

## **Annex 4    Template Project Plan (to be used for submitting a full proposal)**

The Project Plan template is used in the full proposal phase.

The project plan consists of six parts:

- Summary
- A. Orientation and Project Goals
- B. Activities/Work Packages
- C. Consortium and Project Organization
- D. Evaluation
- E. Valorization and Implementation

### Summary

In a globalising economy, industrial value chains become more complex, spanning more countries and providers than ever before. While goods flows in the chain are increasingly integrated and optimised, information and finance flows have been fragmented. The credit crisis has revealed structural weaknesses. Cost of financing is rising, while suppliers, especially SMEs and those located in developing countries, have difficulties obtaining necessary credit. To address these costs and risks of supply chain disruption, large buyers are increasingly interested in managing the financial supply chain with an equally integrated view. Supply Chain Finance (SCF) deals with approaches and instruments that optimize transactions, working capital and costs of the extended supply chains. New models could significantly improve access to finance or reduce the need to finance by unlocking the potential from within supply chains instead of relying on external creditors

The activities in this research project examine new SCF models and tools that look into collaborative pre-shipment financing both short term and long term.

These new models all involve the financing of transactions that are inherently more risky than the ones now addressed by reverse factoring. The research and development project, named SCF 2.0, aims to lay the foundations for this next generation of SCF applications. These applications will allow firms to facilitate capital flows and manage the associated risks, thereby generating additional value and enhancing the durability of their supply chains.

Expected results:

1. Further development of a supply chain finance services sector with the launch of several new business activities/ventures by the end of 2016.
2. Tools and policy frameworks that companies can use to assess the benefits and costs of the application of various short-term supply chain finance arrangements.
3. Tools that companies can use to evaluate the long-term impact of long-term supply chain finance arrangements and assist in the making of strategic investment decisions.
4. Training simulation tool to educate and train corporates, banks and other stakeholder on the application and benefits of Supply Chain Finance
5. 4 academic publications in relevant top journals and/or submitted to relevant conferences

The developed academic knowledge will be disseminated via: scientific reports; popular articles, modern media, especially twitter and blogs. A website and newsletter will be developed as part of the

SCF Community.

The Dutch corporate sector will also benefit from the link up with other European initiatives via the SCF Community that will be developed as the premier platform to disseminate and exchange research findings in SCF.

The results of the research will be translated into working SCF models and design tools. The most promising models and tools will be implemented as a pilot and turned into business ventures.

## A. Orientation and Project Goals

### Motivation

In a globalising economy, industrial value chains become more complex, spanning more countries and providers than ever before. While goods flows in the chain are increasingly integrated and optimised, information and finance flows have been fragmented. The credit crisis has revealed structural weaknesses. Cost of financing is rising, while suppliers, especially SMEs and those located in developing countries, have difficulties obtaining necessary credit.

During the recent credit crisis liquidity dried up (Ellingsen & Vlachos, 2009) and many companies adopted aggressive cash management strategies to safeguard their cash levels in the face of declining credit from financial institutions. One aspect of these new cash management strategies included extending payment terms with their suppliers. Companies have continued to push payment term extensions with suppliers as a means of freeing up cash for purposes such as investment, dividends and share buybacks (Wall Street Journal 2013). Another reason for the continued pursuit of aggressive cash management strategies is that companies feel that they do not have sufficient working capital to take advantage of an economic upturn. Suppliers to these companies are now feeling the effects of extended payment terms by having to obtain more and more financing to continue operations. Large companies are now searching for ways with banks to help their suppliers.

One of the effects of the actual banking and credit crisis as described is that as interbank-trust is low, cost of LC's rise and LC (confirmations) of certain banks are no longer accepted at all (Ellingsen & Vlachos, 2009). The SCF proposition to deal with this problem and its promise to release cash is apparently not fully known or is not adopted as a way to deal with liquidity effects of credit and banking crises. This is even more interesting as Klapper (2004), also for World Bank, already wrote about the role of reverse factoring on supplier financing of small and medium sized enterprises. She describes the successful initiative of the Mexican Government and Nafin through which a number of SME-companies gained access to financing (reverse factoring) and trading opportunities with big buyers which they did not have before.

The promise of Supply Chain Finance is according to researchers in the SCF area enormous. The theoretical concept of moving from sub-optimal working capital management on a company level towards managing the financial supply chain with an integrated view on the most beneficial financial arrangements triggered several researchers to estimate the monetary potential of SCF. Such as Hieminga (2012) who believes that SCF can free up € 22 billion additional free cash flow, just for Dutch buyers.

The technologies to further automate business processes and accounting information systems within organizations, but moreover to electronically link these with other organizations in the supply chain, are available and become more and more widespread in everyday business. Outsourcing and globalization have led to more complex and more international chains of goods, services, information and cash while the key players, the dominant buyers or sellers in the chain, need to address the issues of supply chain risk and service performance levels. There have been improvements in supply chain

management and stock and cost reduction by sharing of information throughout the chain, new ways of keeping and managing inventory (e.g. vendor managed inventory) and more intelligent cooperation. In that line of thought about chain management, the financial chain is also getting more and more attention as a result of the urge for further reduction of cost and working capital and risk management. In this competitive environment new solutions and initiatives have come up under the name of Supply Chain Finance.

The most common form of supply chain finance explored and utilized is currently post-shipment financing, mainly reversed factoring. Pre-shipment financing has been used less extensively as a means of obtaining financing. Experts are now stating that pre-shipment financing is actually more crucial than post-shipment financing (Demica, 2011). The adoption of pre-shipment financing by suppliers has both short-term and long-term implications. In the short term, operational aspects of the supplier (such as stocking levels) will be affected. In the long term, pre-shipment financing will affect key strategic decisions of the supplier. The aim of this research is to formally explore the adoption of pre-shipment financing in the short and long term.

Supply Chain Finance enjoys increasing attention in the scientific community. The renowned Manufacturing and Service Operations Management Society has chosen Supply Chain Finance as a special-interest theme for its annual meeting of 2013. This project will not only provide direct practical and economic advantages to Dutch industry, but also help to maintain the leading position of Dutch science in this area.

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- Ellingsen, T. and Vlachos, J. (2009), "Trade Finance in a Liquidity Crisis", Policy Research Working Paper, The World Bank 5136 November 2009.
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#### Relation to Dinalog's innovation themes

On-to-one relation with Supply chain Finance theme.

#### Objectives and goals

The objective of the project is to accelerate the understanding, development and adoption of Supply Chain Finance models. Through experimenting and analysis this project will research the relevance of SCF models. The aim is to realize substantial benefits for corporates in the areas of operational enhancement, increased supply chain output, profits, cost reductions and risk mitigation.

For each participating corporate one or more active business case for a next generation SCF Solution will be researched, built and implemented. SME's are actively involved, in particular Asyx, Involvation Interactive and TradeWizz to turn the most promising models into business plans and ventures.

Simultaneously, the scientific analysis should result in a framework that defines Supply Chain Finance Strategy and provides a roadmap that can link it to operational, supplier and supply chain strategies. The main goals:

1. Develop new generation Supply Chain Finance models and implement proof of concepts.
2. Contribute to knowledge on supply-chain finance domain by developing theory for riskier

supply-chain finance transactions and enhance the position of the Netherlands in the supply-chain finance domain.

3. Develop implementable tools that companies can use to make better joint financing and operational decisions with its supply chain partners.
4. Develop a policy framework for corporates for the application of Supply Chain Finance models
5. Develop business plans and stimulate business ventures derived from the most promising SCF models and enable the formation of new business providers or new business activities of existing service providers.

#### Expected results

6. Further development of a supply chain finance services sector with the launch of several new business activities/ventures by the end of 2016.
7. Tools and policy frameworks that companies can use to assess the benefits and costs of the application of various short-term supply chain finance arrangements.
8. Tools that companies can use to evaluate the long-term impact of long-term supply chain finance arrangements and assist in the making of strategic investment decisions.
9. Training simulation tool to educate and train corporates, banks and other stakeholder on the application and benefits of Supply Chain Finance
10. 4 academic publications in relevant top journals and/or submitted to relevant conferences

#### Relation to government policy

The theme of Supply Chain Finance is directly linked to the initiatives and ambitions of the Dutch government in the logistics topsector as stated in Partituur naar de Top (2011): "In 2020 the Netherlands will have a leading international position (1) in the transaction of shipments, (2) as a coordinator of (inter)national logistics activities and (3) as an innovative land with establishment potential for shippers and logistics business.". This will enhance the country's position as a logistics world centre, attract new industries from abroad and create new employment. By doing so it will triple the Dutch Value Added (GDP) in supply chain control and related logistics activities from € 3 billion in 2007 to over € 10 billion in 2020.

Government is also actively looking for alternative forms of financing to stimulate research, innovation and growth. It is recognized that such financing solutions come from within a supply chain, often through collaboration and consortia and often driven by small to medium sized companies. Horizon 2020, the EU framework programme for Research and Innovation that will be launched in 2013, highlights two important finance themes: access to Risk Capital and SME Finance. This was reflected in the European Commission hosting several sequential panel discussions in 2011, with the aim help to refine the design of a new generation of financial instruments for Risk Capital and SME Finance.

The traditional view of regulators and financiers is that such initiatives are to be financed from outside the supply chain through banks, investors and private equity. Governments are now looking to stimulate new structures to improve the framework conditions for companies to provide or facilitate debt and equity financing from within the supply chain. This will improve access to risk capital and financing for small and medium sized companies such as advocated in Horizon 2020. Several governments are taking an active approach to stimulate the implementation of new Supply Chain Finance solutions. See for example the initiative by Prime Minister of the UK, Cameron, announcing a SCF scheme in 2012. In the past 6 months there have been several meetings between industry experts and the Dutch ministry of Economic Affairs to develop similar initiatives in The Netherlands.

- Partituur naar de Top (2011), Adviesrapport Topteam Logistiek (advies aan de Minister van Economische Zaken)
- Prime Minister's Office, 10 Downing Street (23 oktober 2012) available at <https://www.gov.uk/government/news/prime-minister-announces-supply-chain-finance-scheme>
- Horizon 2020, EU programme on Research and development, details available at [http://ec.europa.eu/research/horizon2020/index\\_en.cfm#](http://ec.europa.eu/research/horizon2020/index_en.cfm#)

## Orientation

In the work packages below the innovativeness of the research is described in detail. Each activity is embedded into existing literature, so that the contribution to the state-of-the-art in the scientific domain of interest can be stipulated. This R&D Project gives specific attention to the definition of Supply Chain Finance. In most SCF literature the definition question is put forward together with the fact that not much academic specific SCF literature is available. The problem seems more profound than just concluding on a definition. Citing Templar (2011): “Defining the true nature of SCF in itself appears to be difficult: model, discipline, technique, product or programme?” Some definitions of SCF:

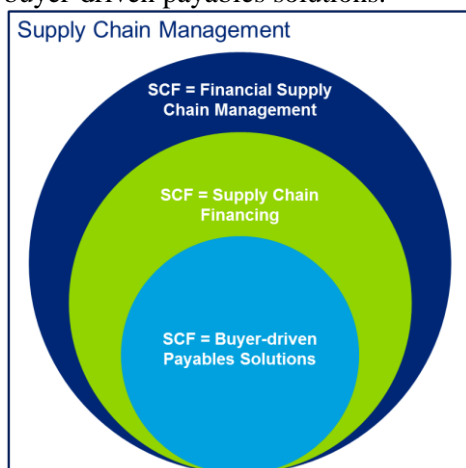
(Hofmann, 2005): “SCF is an approach for two or more organizations in a supply chain, including external service providers, to jointly create value through means of planning, steering, and controlling the flow of financial resources on an inter-organizational level”.

(Aberdeen Group 2006): “SCF is a combination of Trade Financing provided by a financial institution, a third-party vendor or a corporation itself, and a technology platform that unites trading partners and financial institutions electronically and provides the financing triggers based on the occurrence of one or several supply chain events”

(Camerinelli, 2008): “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”

(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 optimization.”

The framework from Cosse (2012) is particularly worthwhile to consider when categorizing the different schools of thought about SCF as is observed in the literature. It recognizes three schools (from broad to narrow defined): SCF as financial supply chain management, SCF as supply chain financing and SCF as buyer-driven payables solutions.

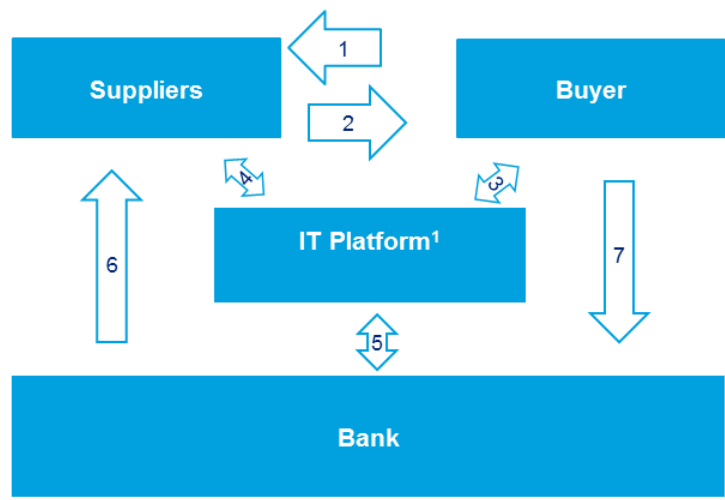


*SCF Schools of Thought, derived from Cosse (2012)*

Cosse's first school of thought, SCF as Financial Supply Chain Management, encompasses all activities in the supply chain that can be related to finance, so in a broader sense than payables or integrated working capital solutions. It covers the entire end-to-end supply chain and, as put forward by Hofmann and Belin (2011) it follows the opposite direction of the physical supply chain. Where materials flow from suppliers to buyers; funds flow from buyers to suppliers. Hofmann and Belin go one step further than Cosse, since they see the financial supply chain as the opposite of the physical supply chain whereas Cosse observes financial supply chain management as part of the broader SCM context. According to Hoffmann, the information flow, technology, document and data management, order processing, etc. are all considered to be part of SCF.

SCF as Supply Chain Financing is described by Cosse as a set of supply chain financing instruments which can be used in managing the financial supply chain. It is different from the first school of thought in the sense that this stream focuses on financial instruments as a means of optimizing the financial supply chain. As such, it considers specific financial solutions and evaluates their impact on the financial performance of the chain. Fields that can be part of this definition are trade financing, fixed asset financing, working capital financing and supplier financing.

Where the previous school of thought focuses on a variety of financial instruments which can be found throughout the chain in both directions (upward or downward), the third school of thought is even narrower. It views SCF as buyer-driven payables solutions and is therewith mainly referring to reverse factoring (also called supplier financing).



1: IT Platform can either be hosted by the bank or by an independent platform provider

### *Reverse Factoring process and actors*

Reverse factoring already has a good theoretical foundation and a growing market presence. Nevertheless, leading-edge thought in this area must start to address new challenges forming on the commercial horizon. Experts perceive the imminent need for a next generation of SCF applications: models and tools that can facilitate faster, deeper, and broader financing for the complex structures of modern supply chains (cf. Demica 2011). These new challenges all involve the financing of transactions that are inherently more risky than the ones now addressed by reverse factoring.

Irrespective of the definitions and the schools of thought there seems to be a common agreement that SCF is about collaboration. As supply chains have become more complex the supply chain partner could include any company in or connected to the supply chain. One can distinguish 2<sup>nd</sup> and 3<sup>rd</sup> tier suppliers or even deeper in the chain. And especially logistics service providers have become more important as a partner to optimize the supply chain. But also dealers and distributor networks could be included.

In principle any type of company in the chain, large or small, robust or weak can initiate the discussion to start a Supply Chain Finance programme. As argued by Hieminga (2012) in many supply chains there is a focal company quite often a large buyer that controls and dominates the chain. Other partners in the chain would need the support of that large buyer to implement SCF models. And the large buyer will typically steer the improvement processes in the chain. This big dominant buyer has two very strong assets that gives him the power to manage and control the supply chain: credit worthiness and purchase volume. Big dominant buyers are generally the focal company in the SCF programmes and often the initiator but almost always the facilitator of SCF programmes.

From the perspective of the large buyer Supply Chain Finance is about leveraging these two assets to

reduce costs and uncertainty in the chain. In many cases banks do not need to be involved. Big buyers can often structure this themselves. There is vast experience amongst large firms using payment terms, consignment stock, VMI, VOI, tolling agreements and other structures where optimization has effect both on the physical and the financial flows.

Based on the above the working definition of Supply Chain Finance is as follows:

**“Financial arrangements used in collaboration by at least two supply chain partners and facilitated by the focal company with the aim to improve the overall financial performance and mitigate the overall risks of the supply chain.”**

This R&D project focuses on manifestations and the development of new forms of collaboration between supply chain partners in the form of contractual or financial arrangements beyond reversed factoring. With financial arrangements we mean a wide range of equity, debt and financial contracts. Equity-related solutions can include acquisitions, joint ventures and minority interests. Debt-related SCF instruments can be loans, convertibles, lease constructions, reverse factoring and advance payments.

The research and development project proposed here, SCF 2.0, aims to lay the foundations for this next generation of SCF applications with a specific focus on short term and long term pre-shipment finance. This R&D project will give further guidance to and insight in the main reasons for supply chain partners to develop and implement SCF models: Improving financial performance and risk mitigation. Improving financial performance can include lowering transaction costs, financing costs, purchase costs, transport costs, and so on. Risk mitigation with a focus on dealing with supply or delivery risk. This project will prove through experimenting and analysis that SCF programmes have the potential to increase stability of suppliers, allow for growth, increase loyalty and provide safety cushions against disruption.

- Cameranelli, E. (2011) “B2B Finance: a new name for Supply Chain Finance”, Aite Group Blog.
- Cosse, M. (2010), “Supply Chain Finance School of Thought”, thesis presentation Cranfield University School of Management.
- Hofmann, E. (2005), “Supply Chain Finance: some conceptual insights”, Logistik Management – Innovatieve Logistiekconcepten, Wiesbaden 2005, p 203-214.

## **B. Activities and Work Packages**

This section describes the approach proposed to achieve the project goals in work packages and activities, including milestones.

The relations, coordination and collaboration between work packages and activities (e.g. between different parallel or sequential planned activities, work packages, possible links with other projects etcetera) are clearly described in detail, as well as milestones, project results and deliverables per work package / activity and decision points.

The first phase of the R&D Project takes 3-6 months and will focus on establishing the project organization, recruitment of researchers, setting up sounding boards and identifying business cases with the corporate partners.

The second phase takes 18-24 months and will focus on methodology, data gathering, modeling, analysis and publication

The third phase takes 6-12 months and is focused on pilot implementation, dissemination and business plan development.



Phase 1 and 2: Research Duration: 24 months	Activity 1: SCF Solutions
	Activity 2: Short-term perspective. Direct operational enhancements
	Activity 3: Long-term perspective. Investments in supply chain excellence.
Phase 3: Implementation and Dissemination Duration: 18-24 months	Activity 4: Simulation Tool.
	Activity 5: International Sounding Boards

**Activity 1: SCF Solutions**

**Description:**

In this first activity we look to the strategic relevance of SCF to the focal companies.

**Main Research question:** What SCF Solutions are suitable for large buyers in dealing with their (strategic) suppliers? What are the characteristics of these SCF models and what is needed to develop new successful SCF models?

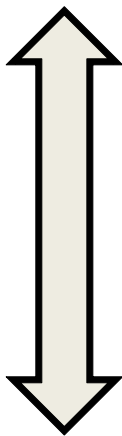
Starting point is that the competitive strategy of a company needs to fit with the supply chain strategy (Porter 1996). And the supply chain strategy should be supported by a Supply Chain Finance Strategy. Such SCF strategy would seek to improve stability, loyalty and growth amongst its suppliers.

Stability: suppliers survive | Growth: suppliers can grow | Loyalty: tying suppliers

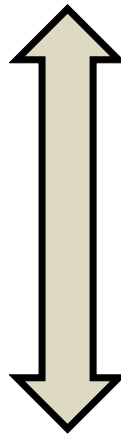
Reduction of the risks and consequences of global supply chain management are mentioned in SCF literature (Van Laere, 2012 & Dinalog, 2011) as one of the goals of SCF. Since more production is being outsourced and offshored globally, the focus is more and more on managing supply chain risk. A non-exhaustive list of supply chain risk sources and their characteristics (Simchi-Levi, 2009) shows the following:

**unknown unknown**

**uncontrollable**



- natural disasters
- geopolitical risk
- epidemics
- terrorist attacks
- volatile fuel price
- currency fluctuations
- port delays
- markets change
- supplier's performance
- forecasting accuracy
- execution problems



**known unknown**

**controllable**

Supply Chain Risk Sources and their characteristics (Simchi-Levi, 2009)

Such a list can be expanded and tailor made for a company or a supply chain, also within the widely used COSO ERM framework for risk identification including risk appetite and risk response.

Applying this framework it will be researched to what extend SCF models can deal with the various risk levels. SCF could for example mitigate the risk that a supplier cannot deliver as demanded because of problems in financing the production or the shipment to the buyer.

In SCF literature (Hofmann, Van Laere) the chances for the use of SCF in the market place are also correlated to the characteristics of an industry and average size and number of transactions between buyer and seller. The concepts of "power" and "trust" are used to explain and predict (and control) behavior.

In this light Kraljic (1983) provides a framework that is very useful for marking the relevance of SCF. His considerations about managing supply and controlling chain risk are crystalized in his famous Kraljic matrix.

		project impact	
		low	high
supply risk	high	<b>bottleneck items</b> ensure supply	<b>strategic items</b> form partnerships
	low	<b>non critical items</b> simplify and automate	<b>leverage items</b> exploit purchasing power

Kraljic Product Purchasing Classification Matrix

In the category for Non Critical items, the nature of the transactions do not justify to make significant relation specific investments for both the supplier and the buyer. Financial agreements will be based on market standards and switching costs will generally be low. Furthermore, non-critical items have

also a good chance to represent a limited value. As outlined by the Manager Supplier Finance & P2P from Philips (Wolthuis, 2011), the reverse factoring program they offer is only for suppliers with a spend of more than € 5mln annually. He says it is a pity for smaller suppliers that the marketplace currently lacks more easy and accessible solutions. With the current reverse factoring program, it is simply too expensive for both the buyer and the supplier to go beyond traditional ways of transactions.

In the case of bottleneck items the supplier has strong negotiation power relative to the buyer. Buyers might consider to engage in long term contracts in order to ensure supply. In case of SCF solutions, the instrument should be positioned from the buyer's perspective as to please the supplier. For example, if both parties engage in a reverse factoring program, the buyer could offer to maintain the current payment term, but allow the supplier to pre-finance the payment against a discount calculated based on the buyer's credit rating. However, buyers should just ensure that the supplies remain available, but as soon as this is guaranteed, should not invest too much in relation specific instruments (since the limited project impact).

For leverage items the motto is to exploit purchasing power. Supply risk is limited, but the financial impact is significant. Strong buyers are likely to be positioned in this corner, since it provides them with strong negotiation power. One could question whether such buyers should invest in SCF solutions, since they can be in a position to dictate payment terms. However, solutions like reverse factoring can enable buyers to use long payment terms but at the same time offer their suppliers flexibility in their cash flow management and the ability to finance their debtor position against a cost which is probably lower than where they have access to themselves. By doing so, the instrument is also a means of mitigating supply chain risk for the buyer and maintaining good commercial relationships and smooth transaction processing.

Strategic items are characterized by significant supply risk and financial impact. In such relationships, it is important for the buyer to actively collaborate with its supplier. Financing arrangements could be developed jointly and should support the long term continuation and stability of the relation. If a reverse factoring model is set-up such that is beneficial to both parties, it will be worth the investment. But in these cases, SCF can go beyond reverse factoring. In the most extreme form, the buyer will acquire the supplier to ensure its own continuity. Although an acquisition is of all times, if SCF is viewed as a way to ensure service reliability, this can be seen as the most far-reaching manifestation of SCF. Somewhat less extreme options are to take a minority interest, jointly invest in innovation, inventory financing, etc.

Based on the above descriptions one could attempt to link financial solutions in the broad categories of equity, debt and contractual financial arrangements to fit with the procurement strategies based on the four Kraljic categories.

	Equity	Debt	Financial Contracts
Strategic items	Take-over	Loans	Profit/revenue sharing
	Joint venture	Advance payments	Risk sharing
		Reverse factoring	Buyer Managed Inv.
		Vendor Leasing	Vendor Managed Inv.
		Convertibles	Dynamic discounting
			Options & futures
Bottleneck items	Minority interest	Loans	Profit/revenue sharing
	Joint venture	Advance payments	Risk sharing
		Reverse factoring	Buyer Managed Inv.

		Vendor Leasing	Vendor Managed Inv.
		Convertibles	Dynamic discounting
			Options & futures
Leverage items		Reverse factoring	Dynamic discounting
		Advance payments	Vendor Managed Inv.
Non-critical items		Reverse factoring	Dynamic discounting
		Advance payments	Vendor Managed Inv

Expected SCF instruments (in the form of equity, debt or contracts) plotted in Kraljic

The research methodology will follow an embedded multiple case design based on Eisenhardt (1989), Voss et al. (2002), (Ozcan and Eisenhardt, 2007). Six case studies will be set up in collaboration with the consortium partners with special focus on new or recent implementations during the period of research. We envisage at least 6 case studies of which three case studies with a focus on Short Term Finance and three case studies focusing on Long Term Finance. Each case study is essentially a collaboration between a buyer and a supplier (and other parties such as IT provides, banks, accountants, etc). It shall be attempted to select suppliers that are not only located in NL but also outside NL in the EU and Non OECD.

This case study design allows for comparison and enables us to find why variations in the application of SCF models emerge. The main reasons for its application: risk mitigation and financial performance. Organisational enablers can be distinguished such as strategy, governance and information management systems as well environmental enablers such as legal, accounting, macro economic, buyer's position. By having multiple focal firms in different industries we will also be able to find variations across companies. The collection of multiple data ensured by a multi-case design is likely to yield more accurate and generalizable theory (Ozcan and Eisenhardt, 2007). As we aim to not only study existing but especially also new SCF models in an early set up phase, we will also be able to trace the dynamics during the set up and implementation.

The procedure is to select the focal company: Philips, Heineken, ASML, etc. Together with the focal company we will select a supplier business case and subsequently determine the other external parties involved, such as local banks, IT companies etc. This mini-consortium will be studied.

The main source of information will be observation through involvement in the meetings between focal company and partners and interviews for which a case study protocol will be developed. The interviews will be fully transcribed and analysed using a programme like Atlas or similar. Informants will be sought from all partners involved in a case and at different hierarchical levels in the organizations, in order to ensure that a variety of perspectives is covered. Triangulation of data can be had by making use not only of interviews, but by observation/participation in meetings and document study as well.

Data gathering is expected to take place over a two year period. Case studies will be written on a case per case basis first, before cross-case analysis will take place. The first two case studies should be available after year 1, second two case studies after 1,5 year and the last three after 3 years. The case study write ups will be sent to respondents for verification.

The final phase of the project will be devoted to the cross-case analysis. For the cross case analysis,

models will be developed based on interview coding. Confrontation with the other data sources will lead to refinement of the model per case. Next the models per case will be confronted and major points of similarity and differences identified. Following Yin (1989), through replication logic we may find why models are similar or different across cases. Final interpretations may again be checked by respondents to enhance the validity of the findings.

The individual case studies will be transformed into several actual implementation pilots as a “proof of concept” .

Based on these implementation pilots we aim to deliver business plans with the mini-consortia to take it further either as a business activity within the buyer, the seller, the LSP, the bank or as an independent venture. Besides the mini-consortia per business case we aim to develop several International Sounding Boards in the most relevant fields of expertise to accelerate further development of SCF business plans. See activity 5.

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- Voss, C., N. Tsiriktsis and M. Frohlich, Case research in operations management, *International Journal of Operations & Production Management*, Vol. 22 No. 2, 2002, pp. 195-219
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Planning: September 2013 – December 2016

Sep 2013 – Feb 2014. Determine Business Cases and Mini-Consortia

Dec 2014 - Complete Case Study 1 and 2

Jun 2015 - Complete Case Study 3 and 4

Dec 2015 – Complete Case Study 5 and 6

Jun 2016 – Complete Cross Case Study analysis

The first year will be used to get a deep insight into the relevant literature and to develop specific research questions. In parallel we will develop the case study trajectory.

The case study trajectory will typically take 1 to 1,5 year per case study. First 3 to 6 months are needed to determine the business case, contact partners, form the Mini Consortium. Next 3-6 months are needed to collect data, do interviews, local visits to partners. Final 3-6 months are needed to write the case study

Work distribution:

Nyenrode is fully responsible for this activity. Work to be executed primarily by two senior researchers and Michiel Steeman, with supervision and content support from the faculty

Researcher 1: Prof. Dr. Ir. P. Klapwijk (Nyenrode)

Researcher 2: Prof. Dr. K Koelemeijer (Nyenrode)

Researcher 3: Drs. Michiel Steeman (Nyenrode), PHD student

Researcher 4: Senior Researcher / Position to be filled (Nyenrode)

Researcher 5: Senior Researcher / Position to be filled (Nyenrode)

ASML, Philips, DHL, Friesland Campina, Heineken will select relevant Case Studies and provide introduction to relevant (supply chain partners) that form a Mini-Consortium

Expected results/deliverables/milestones:

This Activity will contribute significant scientific knowledge on how supply chain finance should be linked to the prevailing theories on strategy, supply chain (risk) management, procurement and financial management.

- Six Case Studies on Supply Chain Finance to be made available to other universities for case study education (if distribution is allowed by mini-consortium members) / see above.
- 3 to 6 implementation pilots on new SCF models
- Two papers published in relevant top papers and/or submitted to relevant conferences end of 2015, 2016
- 4 MSc thesis from students that acquire scientific knowledge under the supervision of senior researchers and PhD's. They support the development of scientific knowledge by gathering data, developing tools and doing research themselves.
- Practical guide or policy framework on Supply Chain Finance policy for large buyers by 2016.
- 3 - 5 presentations per year at conferences (with consortium partners)

- Input for further business model development as defined in Activity 5

## Activity 2: Short-term perspective. Direct operational enhancements.

### Description:

In the second project activity we consider more specifically pre-shipment financing with a short-term perspective. We are interested to see what benefit can be created when a buyer facilitates pre-shipment financing for its supplier, but our focus in this case is on facilitation of a single transaction. Even with this restricted focus, the possible forms that pre-shipment financing may take are quite varied. In the most basic scenario, a buyer only communicates a purchase order; although the order is made in good faith, no firm commitment or obligation to a final purchase is implied. In a more advanced setting, the buyer will guarantee to purchase a minimum quantity of goods or services. Whether or not a guarantee is included, the purchase order information will enable the supplier to finance production - at least partially - by recourse to the capital markets. Alternatively, a buyer could choose to provide advance funding directly to the supplier. Within each of these basic scenarios, there several further specific variations to the manner of implementation, and the contractual terms and obligations of the supplier will of course differ according to the details of the facilitation. We aim to analyze the correspondingly complex set of trade-offs that are relevant to the buyer's choice of pre-shipment financing for a single transaction. We will show how pre-shipment financing in general yields direct operational enhancement and increases supply chain output and profits for the given transaction, but we will also give careful attention to the different costs and risks associated with each form of implementation. Ultimately, our work will provide insight on which type of implementation is appropriate for a given set of economic and firm profiles in a supply chain.

In the following paragraphs we outline the research on transactional pre-shipment financing in more detail. We describe the essential dimensions of the problem and indicate preliminary research questions.

Our work will be inspired by practice. References to financing by means of purchase orders can be found in trade literature. Purchase order (PO) financing is proposed as a means for small companies to manage high inventories during a busy season, meet outstandingly large orders, and generate greater revenues (Fullen 2006, Sinclair 2010). Key steps in a PO financing arrangement can be summarized as follows (cf. Wells Fargo 2011).

- (i) Based on an agreement of sale to a customer, a supplier approaches a lender for PO financing.
- (ii) Lender evaluates the proposed transaction. Important considerations are the cost structure of the sale, financial and operating record of the supplier, and creditworthiness of the customer.
- (iii) Lender advances part of the total order value, enabling the supplier to finance production.
- (iv) Lender's claim is met from proceeds of the sale.

From the above summary it is clear that purchase order financing generally requires more due diligence than other forms of financing such as reverse factoring and debt financing (Tanrisever et al. 2012, Tanrisever et al. 2013). Indeed, multiple sources of risks are present in these transactions. Sometimes a lender will refuse an application, and even in the case of approval, a lender will advance only a fraction of the total order value. Such restrictions are due to the presence of capital market frictions such as information asymmetries, financial distress and bankruptcy costs and agency problems. Boyle and Guthrie (2003) show that such imperfections make it impossible for firms to

issue claims against the full value of a project. Thus, even if a customer commits contractually to purchase a specific quantity of product from a supplier, this commitment will not fully translate into an extension of the supplier's debt capacity, except in the case where the transaction could be considered free of default risk.

The special case of contractual commitment - equivalently, a purchase that is guaranteed to be made unless the buyer were to be liquidated before it were finalized - is nevertheless an important conceptual starting point for our analysis, and preliminary work at the Eindhoven University of Technology has already considered this scenario (Lange et al., 2013). This preliminary study confirms that a PO guarantee from a buyer can induce a supplier to higher stocking levels and increase supply chain profits. The model of Lange et al. (2013) yields insights that are likely to be relevant to other PO financing arrangements. On one hand, a purchase order agreement alters the distribution of risk in the transaction: the seller updates his prior demand distribution, based on information communicated by the buyer. On the other hand, the PO agreement expands the financial capacity of the seller. This trade-off leads to an optimal PO contract, which is further conditioned by the credit worthiness of the buyer, credit worthiness of the seller, demand volatility and the operating margins.

Although Lange et al. (2013) provide a proof of the purchase order concept, their analysis relies on several other simplifications, besides the assumption of a guaranteed purchase. For instance, they also assume that the characteristics of final market demand are known to the seller as well as to the buyer, and that purchase guarantees are self-financing, i.e., the creditworthiness of the buyer is such that the financing enabled by the guarantee is sufficient to cover the seller's immediate production costs. While intuition and industry practice confirm that purchase order information helps firms to reduce the perceived risks in the cash flow streams and hence to enhance their borrowing capabilities, a general and practically relevant analysis of purchase order financing is not yet available.

We will complement the analysis of purchase order financing with a consideration of the possibility that the buyer may choose instead to make a direct advance of funds to the seller, in order to facilitate production. At first sight it might seem that this option is trivially dominated by the choice for a purchase order or a purchase order commitment, but further thought suggests several reasons why it may be advantageous. In the case where a buyer has large cash reserves but relatively low creditworthiness, the seller may gain little access to capital by means of a purchase order, while the prepayment of part of the order would not be a great burden to the buyer. Moreover, in the case of an advance, the buyer can effectively act as a default-free entity would in the case of a purchase order commitment: the work of Lange et al. (2013) has shown that buyer profits are increasing with buyer creditworthiness.

Our research questions are as follows.

- (1) In equilibrium, what is the optimal form of pre-shipment financing for a buyer?
- (2) How is the optimal pre-shipment contract affected when buyer and seller does not have the same information about final market demand?
- (3) How is the optimal pre-shipment contract affected when the self-financing assumption is relaxed?
- (4) What are the benefits of pre-shipment financing for the buyer, seller and the total supply chain?
- (5) How are the benefits of pre-shipment financing conditioned by the key economic parameters: worthiness of the buyer, credit worthiness of the seller, demand volatility and the operating margins?

The theoretical research in this activity will be converted to a tool that allows buyers to assess the benefit that could result from facilitating pre-shipment financing. This tool will combine information on buyer's creditworthiness with an assessment of seller's independent financing capacity and assumptions about final market demand. By calculating the equilibrium decisions of each party and



resulting benefits for each form of facilitation, the tool will support decisions about procurement strategy for the buyer as well as provide scenario analysis for the outcome of specific transactions.

Planning: September 2013 – September 2015

September 2013 - March 2014: Development and analysis of mathematical model

April 2014 - December 2014: Writing first draft of paper, presentations at conferences for feedback.

January 2015 - September 2015: Adapting paper to feedback. Finalizing the paper for journal submission. Development of decision support tool for companies.

Work distribution:

TU/e fully responsible for this activity. Work to be executed primarily by one post-doctoral researcher, with supervision and content support from full-time faculty. From a workload perspective, the activity will require an even distribution of effort over the duration of employment of the post-doctoral researcher, i.e., two years.

Researcher 1: Dr. Matthew Reindorp (TU/e)

Researcher 2: Dr. Arun Chockalingam (TU/e)

Researcher 3: Dr. Fehmi Tanrisever (TU/e)

Researcher 4: Prof. Dr. Jan Fransoo (TU/e)

Researcher 5: Post-doctoral researcher / Position to be filled (TU/e)

References:

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- Fullen, S. (2006), "How to Get the Financing for Your New Small Business", Atlantic Publishing Group, Ocala, FL.
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- Tanrisever, F., Cetinay, H., Reindorp, M. and Fransoo, J. (2013), "Value of Reverse Factoring in Multi-Stage Supply Chains". Available at SSRN: <http://ssrn.com/abstract=2183991> or <http://dx.doi.org/10.2139/ssrn.2183991>
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Expected results/deliverables/milestones:

This project will contribute scientific knowledge of how pre-shipment financing arrangements can be used to facilitate positive net present value investments in supply chains, with focus on logistics services and in particular transportation.

One paper published in a relevant top ISI journal, such as *Management Science*, *MSOM Journal*, or *POMS Journal*. Spreadsheet-based value calculation tool, to be constructed by LMS trainee under supervision of the post-doctoral researcher. LMS trainee will also produce a project report to explain scientific context for tool and illustration in terms of one or more case studies.

Two MSc thesis from students that acquire scientific knowledge under the supervision of senior researchers and PhD's. They support the development of scientific knowledge by gathering data, developing tools and doing research themselves.

### Activity 3: Long-term perspective. Investments in supply chain excellence.

#### Description:

In this project activity we consider pre-shipment financing with a long-term perspective. Here the focus shifts away from the value of single pre-shipment commitments, in order to consider the value of agreements that cover multiple transactions. Even when such agreements are seen as independent commitments, optimal solutions for the suppliers and customers are likely to be different than in the case of single commitment, since suppliers will generally be able to hold stock and use unsold items in one period to meet demand in a subsequent period. We will analyze this basic implication of multiple independent commitments, but our concern lies mainly with the prospect that pre-shipment agreements may facilitate financing of supply chain investments. Specifically, we will show that pre-shipment financing can be used to promote investments to improve supply chain performance and reduce risk.

From a financial perspective, an important obstacle to investment arises when firms need to raise capital in order to proceed with investments. By the pecking order theory, firms opt to first use internal funds to finance investments, turning to external sources and the capital markets if they have insufficient internal funds. As a result of market frictions, the cost of external funds can be prohibitive to firms. In some cases, these costs could lead firms to reject investment opportunities that could actually have a positive net present value.

Many researchers have explored ways to mitigate such underinvestment problems. From the perspective of supply chain finance, the work by Mian (1986) and Sopranzetti (1999) is particularly relevant, since these authors show how factoring of accounts receivable can mitigate underinvestment problems. Extension of this insight from factoring to reverse factoring is straightforward, and opens the theoretical path to similar application of other supply chain finance concepts, including pre-shipment financing.

From the operational and supply chain perspective, conceptual work of van der Vliet et al. (2013) describes how supply chain finance can be a means to promote supply chain investments, with a view to management or reduction of supply chain risk. In this work, the authors argue that some firms may increase return on SCF implementations by giving suppliers a greater short-term share of the benefits, instead of claiming short-term benefits directly for themselves, for instance through a payment period extension in reverse factoring. The value of different possible SCF arrangements may thus be analyzed according to standard valuation techniques, such as discounted cash flow or real options. While the long-term operational outcomes will rarely be certain, the risk-adjusted value of SCF-facilitated supply chain investments may still outweigh the purely financial (e.g., working capital) benefits of the short-term focus.

Our consideration of pre-shipment financing will integrate financial and operational perspectives, in order to show not only how pre-shipment agreements can free capital needed for investments in the supply chain, but also that the same agreements increase the likelihood that firms will indeed undertake the necessary investments.

There are many possible motivations for a corporate customer to facilitate supply chain investments. For example, the customer might use pre-shipment agreements in order to help a supplier to realize a specific service level, quality improvements, or environmental standards. Commitments may be even more realistic and relevant in sectors other than manufacturing. In logistics, for instance, reduction of

uncertainty in demand can be key to facilitate investment in transportation means, warehousing, or other 3PL services. These investments can in turn be of great value to the customer that would make the commitment. Customers may have their own service level or environmental constraints. For instance, a customer's commitment to a usage level over a year may allow a transportation company to invest in greener trucks, which in turn can help the customer's corporate responsibility to reduce its carbon footprint.

Specific research question(s) are thus:

- (1) For a given transactional profile of a customer-supplier relationship, how much capital can a multi-period pre-shipment agreement release for supplier investment?
- (2) In typical logistics settings, what is the supply chain benefit that could be realized by investment of the capital released by a pre-shipment agreement?
- (3) How should a pre-shipment agreement be structured, in order to facilitate suppliers making strategic investment decisions to enhance the entire supply chain?

The theoretical research in this activity will be converted to a tool that allows firms to assess the benefit of a multi-period contract. For logistics services provider the tool will show the value of a multi-period purchase commitment, by comparing revenue and costs in each scenario. Besides detail of the provider's cost structure, necessary inputs for this calculation include historical or forecast basic demand uncertainty. The expenditure needed to realize environmental or other infrastructure improvements can then be placed in light of the benefit of the purchase commitment. Similarly, for the customer, the any period costs associated with the purchase commitment can be calculated and compared with the benefit resulting from the provider's feasible investment level.

Planning: September 2014 – September 2016

September 2014 - March 2015: Development and analysis of mathematical model

April 2015 - December 2015: Writing first draft of paper, presentations at conferences for feedback.

January 2016 - September 2016: Adapting paper to feedback. Finalizing the paper for journal submission. Development of decision support tool for companies.

Work distribution:

TU/e fully responsible for this activity. Work to be executed primarily by one post-doctoral researcher, with supervision and content support from full-time faculty. From a workload perspective, the activity will require an even distribution of effort over the duration of employment of the post-doctoral researcher, i.e., two years.

Researcher 1: Dr. Matthew Reindorp (TU/e)

Researcher 2: Dr. Arun Chockalingam (TU/e)

Researcher 3: Dr. Fehmi Tanrisever (TU/e)

Researcher 4: Prof. Dr. Jan Fransoo (TU/e)

Researcher 5: Post-doctoral researcher / Position to be filled (TU/e)

References:

- Sopranzetti B.J. (1999), "Selling accounts receivable and the underinvestment problem." *The Quarterly Review of Economics and Finance* 39: 291-301.
- Mian, Shehzad L. 1986. "Captive Finance Companies and Alternate Policies for Financing Accounts Receivable: A Collection of Related Essays," Unpublished Ph.D. Dissertation, University of Rochester.
- Van der Vliet, K., Reindorp, M., and Fransoo, J. (2013). Maximising the Value of Supply Chain Finance. Working paper, Beta Research School for Operations Management and Logistics.

Expected results/deliverables/milestones:

This project will contribute scientific knowledge of how pre-shipment financing arrangements can be used to facilitate positive net present value investments in supply chains, with focus on logistics services and in particular transportation.

One paper published in a relevant top ISI journal, such as Management Science, MSOM Journal, or POMS Journal. Spreadsheet-based value calculation tool, to be constructed by LMS trainee under supervision of the post-doctoral researcher. LMS trainee will also produce a project report to explain scientific context for tool and illustration in terms of one or more case studies.

Two MSc thesis from students that acquire scientific knowledge under the supervision of senior researchers and PhD's. They support the development of scientific knowledge by gathering data, developing tools and doing research themselves.

Activity 4: Simulation Tool – The Cool Connection

Description:

In this project activity we will translate the collaborative SCF business cases and the pre-shipment arrangements both short term and long term into modules that can be incorporated in an existing business simulation called The Cool Connection.

The Cool Connection is a web-based learning experience that connects the physical and financial supply chain launched in 2012. It was developed as part of an incentive programme initiated by a consortium that consisted of manufacturers, banks, consultants, universities and the government to raise the awareness of Supply Chain Finance. [www.thecoolconnection.org](http://www.thecoolconnection.org). This programme also involved the launch of the supply chain finance community [www.scfcommunity.org](http://www.scfcommunity.org).

It was recognized that the successful adoption of Supply Chain Finance methodologies would rely on bridging the supply chain management and the finance discipline.

The objective of The Cool Connection is to bridge these two worlds through a learning experience, a serious game, that forces multiple disciplines to work together. This webbased simulation aims to highlight and teach the interdependencies between these disciplines. Typical supply chain topics such as service level, delivery methods, production intervals and warehousing are linked with financial topics such as payment instruments, financing and cash management.

The Cool Connection is based on the very successful business game called The Fresh Connection ([www.thefreshconnection.biz](http://www.thefreshconnection.biz)). This simulation has a strong track record for training supply chain management. Since 2008 it has now been used by:

- 10000+ professionals
- 1000+ companies
- 30+ countries
- 10000+ students
- 50+ universities

Supply chain management simulations have proven to be useful tools to facilitate management learning in classroom environments (Mehring, 2000), learning among practitioners (Sterman 1992) or as input for academic research (Steckel et al 2004). Over the years, several supply chain games have been developed to achieve one or more of these goals with the beer game, developed by MIT in the 1960s being one of the best known. However, a crucial limitation of the beer game (and most other simulations in the OM/SCM field) is the fact that they provide a single perspective of the problems in the Supply Chain. Supply Chain Finance is a cross functional activity and should be taught in that way where possible.

The Cool Connection proves particularly effective for demonstrating the importance of supply chain knowledge and awareness in functions beyond operations and supply chain management as well as the importance of a cross-functional team based approach to addressing the issues that companies face in today's business environment.

The Cool Connection is different from other supply chain simulations in that it much closer mimics a real life company environment in terms of scope and complexity of decisions that participants need to take. The goal of the simulation is to foster cross-disciplinary teamwork. The focus hereby is explicitly on strategic and tactical decisions making (as opposed to the much more operational decisions in for example the beer game.) The target of each team is to make the company profitable again by realizing the highest possible Return on Investment.

Participants form a Team consisting of four roles and need to manage a personal care production company called The Cool Connection. As a new management team, the participants need to balance the constraints and manage the interdependencies of the physical and financial supply chain.

The Cool Connection is simulation based which means that customers, suppliers and production have a certain level of unpredictability. This uncertainty will have to be managed by taking the right decisions on items such as stock levels, lending limits, credit insurance limits, supplier selection, and many more. The management team of The Cool Connection consists of four roles.

The VP Sales is responsible for defining the marketing strategies and the negotiation with a range of different types of customers. The negotiations include the service levels as well as for example INCO Terms.

The VP Purchasing is responsible for defining the purchasing strategies and the selection of and the negotiation with suppliers from various regions. The negotiations include the service reliability but also INCO and payment terms.

The VP Supply Chain Management is responsible for production and warehousing. By undertaking intelligent stock planning for components and products, the Supply Chain Manager can optimize both production process and working capital.

The VP Finance is responsible for cash management and financing and negotiates with both banks and credit insurers. These negotiations include the allocation of collateral and the level of credit limits for customers.

Participants have to take a holistic approach to the value chain when taking the required decisions in the simulation and learn that:

- Cooperation and alignment between different functional areas within a company is key to success;
- Cooperation is difficult to achieve as each functional area has its own KPI's and objectives;
- A strategy is needed to direct the decisions in the different functional areas towards the same goal;
- A structured process is needed to translate the chosen strategy into tactical decisions ;
- That cooperation does not stop at the companies' boundaries, it extends further into the complete chain, to both suppliers (and suppliers' suppliers) and customers (and the customers' customers).

The cross-functional simulation is an active way of teaching and learning proven to extend the learning effects of other simulations available for the purpose and to provide an experience that is much close to the real world environment. Participants are challenged to make joint decisions in a complex situation with many variables different to their own business environment. As participants can only take decisions in their own functional area, adherence to a selected strategy, cooperation between the functional disciplines and aligning decisions turn out to be key factors to successfully play The Cool Connection. Cross-functional simulations prove very suitable for team building and for getting insights into companies' group processes. Cooperation and alignment between different functional areas within a company is as much key to successfully doing the simulation as it do solving the issues in companies' in real life settings. A commonly quoted advantage of playing the simulation with practitioners is that they are compelled to perform in a situation they do not know; hence they cannot fall back on institutionalized routines but rather must analyse the root causes of common

supply chain problems afresh.

The insights gained on short term and long term collaborative pre-shipment financing arrangements in the first three Activities will be translated into modules that can be embedded in The Cool Connection. This will allow finance professionals such as CFO's and bankers to get insight into the associated supply chain management challenges. Whereas Supply Chain Professionals will gain an understanding for the financial implications of their decisions.

Several simulation workshops will be conducted over the course of this R&D project with the consortium member as well as the Sounding Board members.

**Planning:**

Start: jan 2014 and end dec 2016

Analysis The Cool Connection and groundwork description by end 2014

First design modules by mid 2015

Modules available by end 2015

Dedicated workshops in 2016

**Work distribution:**

Involvement Interactive has the lead in this activity and will work closely together with the researchers from both Eindhoven en Nyenrode to develop, build and test the modules

**Expected results/deliverables/milestones:**

4 to 6 workshops on SCF in 2014

Two new modules in The Cool Connection by end 2015

Training material by end 2015

4 Specific workshops on the new collaborative models in 2016 if possible as satellite meetings at key international events that are open for experts. Such meetings could take the form of poster sessions, workshops or otherwise.

**Activity 5: International Sounding Boards**

**Description:**

The main goal of this Activity is to accelerate development and implementation of the developed tools, methods and new SCF models from business cases to business plans and from business plans to business ventures within and beyond the core consortium.

As part of this activity we will take the results from the research and the case studies and translate those into business plans that form the basis for new business ventures or business activity. These business plans will be tested and discussed with the International Sounding Boards.

The International Sounding Boards will bring in the most relevant fields of expertise. Each Sounding Board will consist of at approx. 5 members with relevant SCF expertise in their field. The following Sounding Boards can be defined:

- Banking (confirmed participation by Rabobank, ABN Amro, ING, Citi)
- Corporates (e.g. Volvo, Akzo, DSM, Océ, etc.)
- IT Companies (e.g. Syncada, Orbian, PrimeRevenue)
- Legal Firms (e.g. Clifford Chance)
- Accountants (e.g. Deloitte, PWC, KPMG)
- Insurance and Intermediaries (e.g. Atradius, EulerHermes, Aon, Marsh)
- Logistical Service Providers (e.g. Ceva, DHL, K&N)

<p>- Other Consultants</p> <p>Sounding Board members will be actively stimulated to participate in the further business plan development. This will lead to demonstration and implementation projects beyond the pilots that would need to be funded separately.</p> <p>We plan to organize workshops and present interim research results twice a year, testing findings with the members of the International Sounding Boards.</p> <p>The Sounding Boards will provide the platform for the further development of new SCF business models.</p>
<p>Planning:</p> <p>December 2013 Establishment 2 Sounding Boards for Banking, Corporates and LSP</p> <p>March 2014 Establishment 3 Sounding Boards for Legal, Accountancy</p> <p>June 2014 Establishment 3 Sounding Boards for IT, Insurance and other consultants</p> <p>Sounding Boards will typically convene twice a year physically or via telephone conference.</p>
<p>Work distribution:</p> <p>Business plan development primarily by Tradewizz, Asyx and Involvation Interactive supported by the other consortium partners.</p> <p>Nyenrode will take the lead in the creation of the International Sounding Boards.</p>
<p>Expected results/deliverables/milestones:</p> <p>4-8 sounding boards with an average of 5-8 members each that will form the basis for further development of SCF Models.</p> <p>3-6 business plans/business ventures</p> <p>2 annual workshops per sounding board</p> <p>.</p>

### C. Consortium and Project Organization

#### Research Team

<p>This section describes the research team, each specific role and input in the project (if necessary per activity / work package) and their quality / specific expertise.</p> <p>Short CVs (max ½ page A4) of the scientific researchers should be included as Annexes, along with a shortlist (titles and sources) of their 5 most relevant publications or relevant project experience.</p> <p>Also describe the relevant past performance of the other consortium partners.</p>		
Partner's name	Role and input	Specific competence
Universiteit Nyenrode	Project Leader and Responsible for activity 1 and 5	University with strong profile for business education

Technische Universiteit Eindhoven	Leading Activity 2 and 3	University with strong academic research credentials in operations, SCM and engineering
Involvation Interactive (SME)	Design and implement new SCF modules in a business simulation and leading activity 4	Specialist in Business Simulations with corporates, banks and universities as clients
Asyx International (SME)	Develop business plans and implement business cases and tools	Provider of IT platform for SCF solutions worldwide with large banks and corporates as clients
TradeWiz Solutions	Develop business plans and implement business cases and tools	Consultant in the field of Trade Finance for banks, corporates and international bodies such as the worldbank/EBRD/SWIFT.
Philips	Provide one or more business cases and implementing organization for newly developed SCF models	Large manufacturer in electronics industry and early mover in the application of supplier financing
ASML	Provide one or more business cases and implementing organization for newly developed SCF models	Large manufacturer of capital goods and recent adopter of supplier financing programme
Heineken	Provide one or more business cases and implementing organization for newly developed SCF models	Large manufacturer of beverages and global user of local supplier financing programmes
DHL.	Provide one or more business cases and implementing organization for newly developed SCF models	Leading worldwide logistics provider
Friesland Campina	Provide one or more business cases and implementing organization for newly developed SCF models	Large manufacturer of dairy products and in start up phase for supplier financing

### Project organization

The project will be coordinated by a Management Committee (MC) consisting of 3-5 representatives of the consortium partners. The MC is the formal decision-making body of the Project, its main role is to steer activities to achieve the objectives, in particular by monitoring progress and approve any changes from the original activities. The MC members are nominated by the consortium partners and meet twice per year.

The project leader will take care of daily management and will report to the MC twice a year. The Project Leader is responsible for the updates, for maintaining communication between the members, and for coordinating implementation of specific activities. The PL prepares the agenda and documentation for the MC. The PL identifies and coordinates interaction between the Activities. Such synergies could be realised in practice by combining meetings, and with regards to content by mutual reviews of scientific work. The PL is also responsible for communication & events such as



the SCF 2.0 newsletter, the website, workshops and conferences.

Scientific work will be monitored by the standard process and systems of the academic consortium partners: Nyenrode and TuE.

#### **D. Evaluation and Monitoring**

##### Evaluation

Evaluation of the project will be based on the measurable outputs indicated in the activity descriptions above. Additionally, yearly evaluation of researcher is standard university procedure.

Further evaluation will be made during regular project meetings at Dinalog. These meetings will ensure the individual activities are aligned, relevant information can be exchanged, in particular with respect to empirical data for case studies and tools that can be implemented.

The evaluation process starts in the second quarter of 2014. The regular project meetings start in the last quarter of 2013, with an initial meeting to assess our SMART objectives. Further meetings will refine and adjust when needed.

The Management Committee will be responsible for monitoring the objectives. The Project Leader will report to the MC twice a year on the progress and SMART objectives. The key role of the MC is to ensure that the objectives are met.

#### **E. Valorization and Implementation Strategy**

##### Valorization and knowledge dissemination

Valorization is an essential and integral part of the project proposal. Both activity 4 and 5 are fully dedicated to valorization and knowledge dissemination. The valorization will consist of business case studies and the implementation of the new SCF models and the design tools. We have reserved a budget of eur 40.000 to cover implementation costs including travel and external advise where necessary.

To support the transformation of business cases and tools to business activities and ventures together with the consortium and sounding board members we have reserved Eur 50.000. We aim for 3-6 new business ventures by the end of 2016.

The sounding boards provide the immediate platform for dissemination of the results through regular workshops and conference calls. It is the intention to bring the sounding boards physically together at least once a year. Another eur 20.000 has been reserved for this purpose.

To reach the stakeholders beyond the sounding boards we follow a mix of online and off-line activities. A website and newsletter will be developed as part of the SCF Community for which we have reserved Eur 20.000.

The developed academic knowledge will be disseminated via: scientific reports; popular articles in e.g. logistiek.nl, Supply Chain Magazine, and other specific journals; finally, modern media, especially twitter and blogs, will be used to ensure wide coverage for the project with social-media-savvies.

The Dutch corporate sector will also benefit from the link up with the following other European initiatives via the SCF Community that will be developed as the premier platform to disseminate and exchange research findings in SCF. This includes:

- French SCF research consortium called RSCM led by Say Partners (12 participants)
- Swiss SCF research consortium called C-Fish led by ETH and FHNW (10 participants)
- German SCF research platform led by EBS
- Italian SCF research platform led by Polimi
- Finnish SCF research consortium led from the paper industry
- English SCF research platform led by Cranfield

Under the leadership of Nyenrode additional funding will be requested via the COST programme of the EU to support the creation of the network.

Finally, two SCF modules will be built into The Cool Connection and will become available as from 2015 to support training and knowledge transfer through workshops, conferences etc. We have reserved eur 50.000 for the actual building and testing of the software.

### Implementation

The results of the research will be translated into working SCF models and design tools. The most promising models and tools will be implemented as a pilot and turned into business plans. The further development of these activities beyond the business plan and the pilot (which is more aimed at a “proof of concept” rather than a full-scale implementation) could be started up but would need to be funded separately.