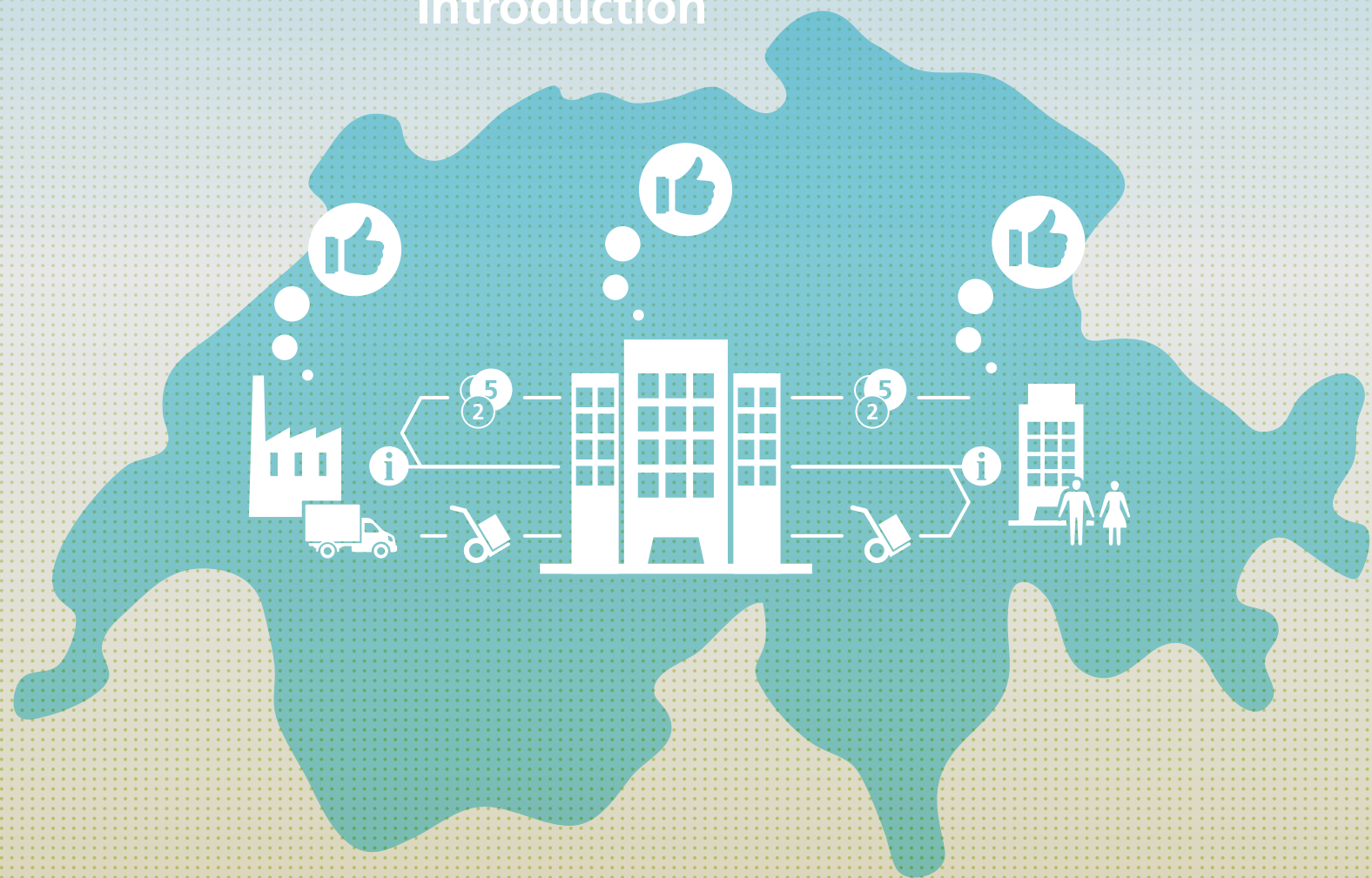


Working Capital

Management Study 2018

Supply Chain Finance

Introduction



Supply Chain Finance-Lab
der Schweizerischen Post

Universität St.Gallen

In cooperation with

PostFinance 

SWISS POST 



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Introduction

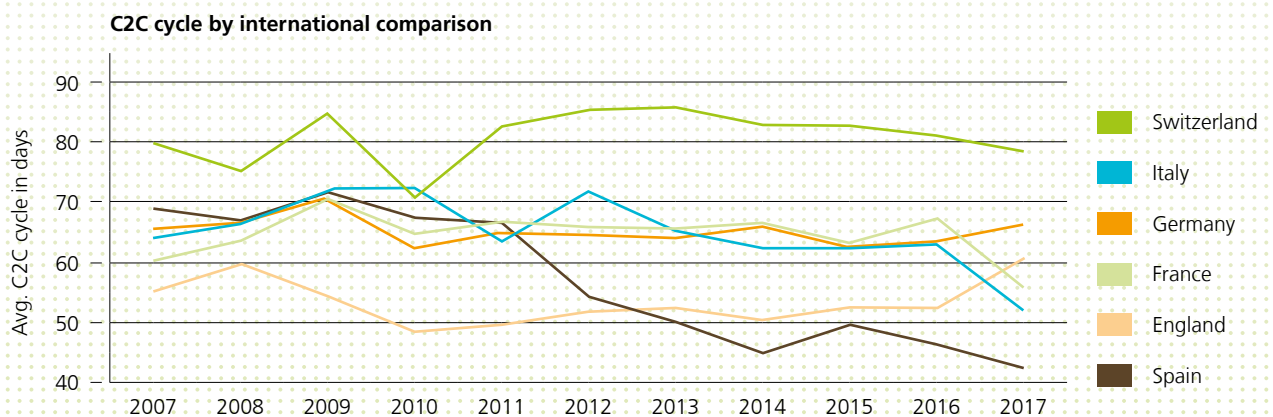
Supply chain finance (SCF) is a very topical issue and extends the perspective of working capital management (WCM) to the entire supply chain. The key question is which stakeholder (e.g. a logistics service provider, supplier or customer) will finance what (e.g. inventories or payments) in the supply chain and with which financial instrument.

Innovative SCF solutions fundamentally change WCM and offer not only the prospect of an improvement in balance sheet figures and financing costs, but also a reduction in risks and increased transparency along the supply chain.

But which SCF solutions are particularly relevant to WCM at Swiss companies? What are the key issues to prioritize when developing an SCF business case? What potential do individual SCF solutions have, and to what extent do they contribute to managing the changing WCM requirements?

The 5th edition of the WCM Study, published by the Supply Chain Finance Lab of Swiss Post at the University of St. Gallen, explores this and other fascinating issues. The study shows the current state of WCM performance and also provides valuable ideas for creating financial flexibility – not just for your own company, but for the entire supply chain.

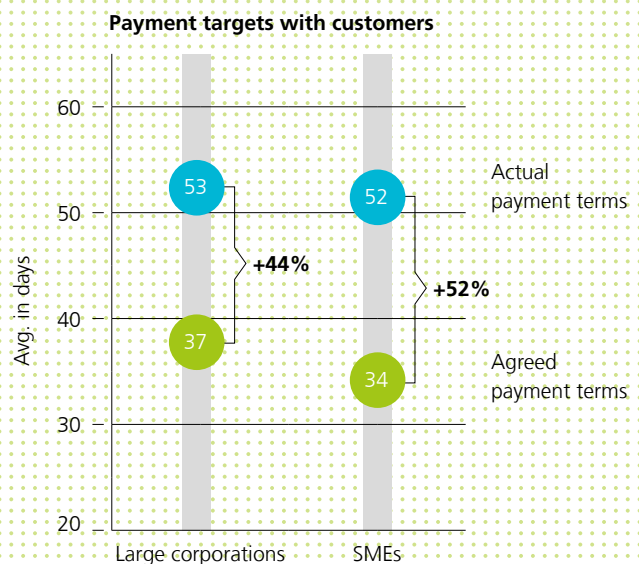
Swiss companies pay their suppliers ahead of schedule and have large inventories



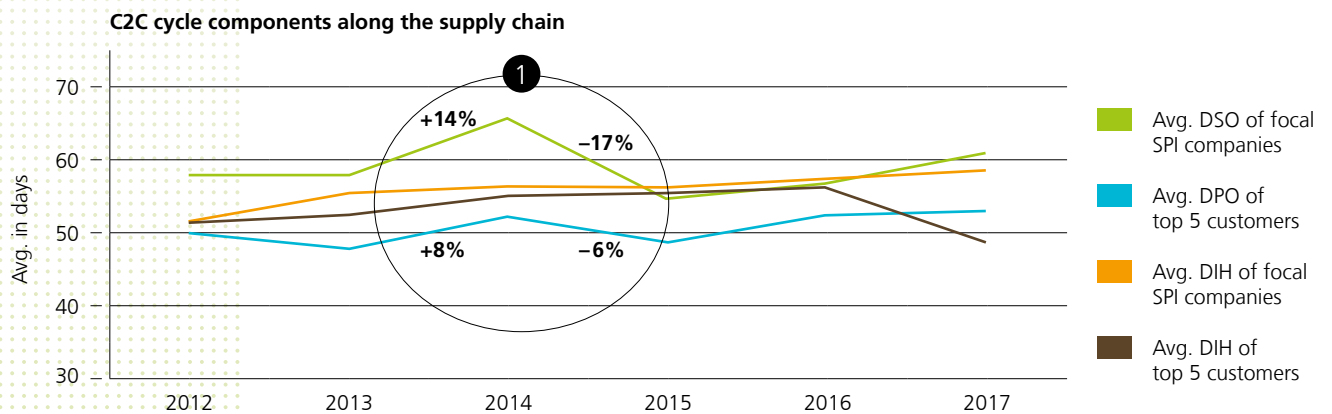
Compared to companies in other European countries, Swiss companies have had a disproportionately high C2C cycle for a number of years, at 79 days. This trend can be attributed to the following two main drivers:

- 1 Swiss companies pay their suppliers ahead of schedule and have the lowest DPO on average, at 26 days.
- 2 By international comparison, the companies also have the highest DIH on average, at just under 52 days. The high level of capital commitment points to great optimization potential in inventory management and can partly be attributed to the generally good order situation in Swiss industry.

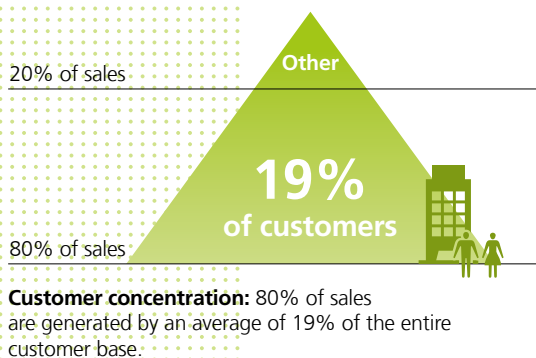
Compared to other countries, the days sales outstanding of 53 days is relatively short. Nevertheless, the actual payment targets with customers far exceed those agreed. There is enormous potential for large Swiss companies and SMEs to reduce the gap to their targeted accounts receivable range by professionalizing their accounts receivable management.



Significant WCM spillover effects can be observed along the supply chain of Swiss companies

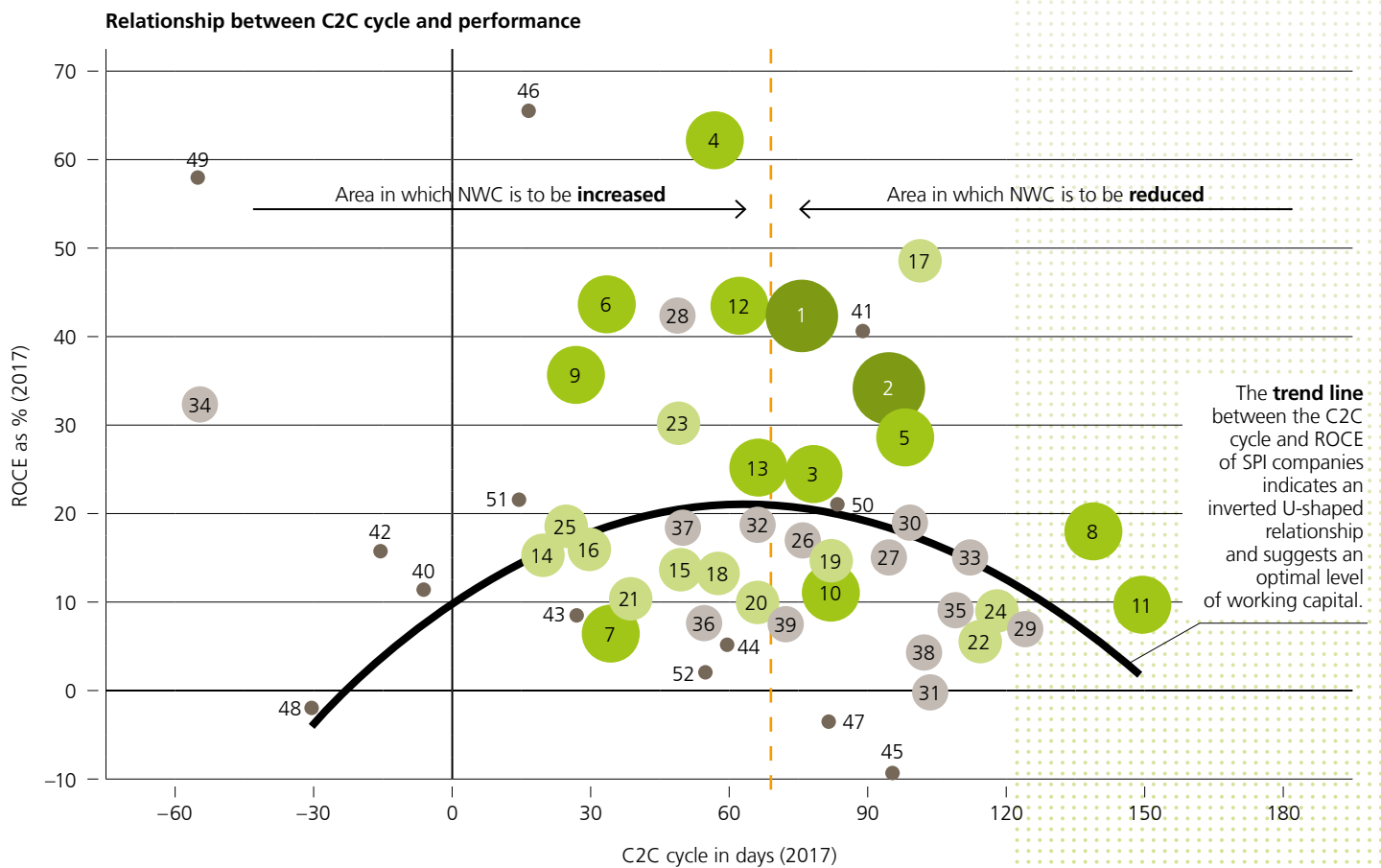


There are significant WCM spillover effects between Swiss SPI companies and their top five customers and suppliers. These are primarily due to increased interconnectivity between the markets and a high concentration of suppliers and customers. The study results show, however, that just 20% of the companies surveyed reflect such cause-effect relationships in their WCM figures and strategic objectives. There is a general lack of holistic consideration for net working capital.



1 In 2014, the liabilities of the top 5 customers increased by an average of 8% at the expense of the focal companies, which recorded a 14% rise in receivables over the same period. By contrast, the focal SPI companies succeeded in significantly reducing their average days receivables held by an average of 17% in 2015. This development partly reflects customers' reduced days payables outstanding (-6%).

Between the C2C cycle and the ROCE...

Net working capital (NWC)
in CHF millions

SPI companies

1. Novartis	14. Also	26. AMS	40. Aryzta
2. Roche	15. Clariant	27. Daetwyler	41. Ascom
3. ABB	16. DKSH	28. Geberit	42. Bobst
4. Adecco	17. Dormakaba	29. Huber + Suhner	43. Flughafen Zuerich
5. Givaudan	18. Emmi	30. Interroll	44. Meier Tobler
6. Kühne + Nagel	19. Georg Fischer	31. Kudelski	45. Meyer Burger
7. LafargeHolcim	20. OC Oerlikon	32. KTM Industries AG	46. Mobilezone
8. Lindt & Sprüngli	21. Panalpina	33. Lonza	47. Myriad Group
9. Logitech	22. Schmolz + Bickenbach	34. Nestlé	48. Newron Pharma
10. Metall Zug	23. SGS	35. Phoenix M.	49. Sunrise
11. Richemont	24. Sulzer	36. Rieter	50. U-Blox
12. Schindler	25. Swisscom	37. Temenos	51. Valora
13. Sika		38. Vifor Pharma	52. Zwahlen & Mayr
		39. Zehnder	

Note: return on capital employed (ROCE) indicates how efficiently a company uses the capital available.

...exists an inverted U-shaped relationship

Comparing company performance with the C2C cycles of the focal SPI companies reveals that those companies with a slightly positive C2C cycle deploy their working capital most efficiently. The results suggest that an inverted U-shaped relationship exists between company performance (approximated with ROCE) and the C2C cycle (in days). The analysis suggests that there is an optimal level of working capital at which positive and negative effects are balanced out and performance is maximized. The optimum depends on various drivers and influencing factors, such as industry characteristics.

The analysis also implies that a reduction in working capital has a positive impact on company performance to only a certain extent. If the optimal level threshold is not met (the C2C cycle is reduced too greatly), an additional reduction in working capital seems to have a negative impact on performance. This outcome reflects the basic principle that the capital commitment time should align with the financing period (financing with matching maturities).



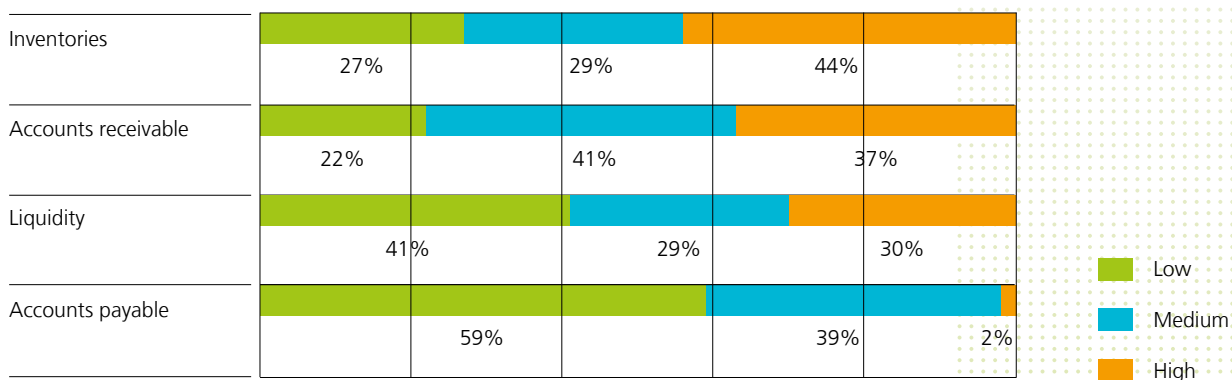
of the companies surveyed reflect **external factors** in the strategic determination of their WCM targets.



of those surveyed anticipate a **reduction in working capital** over the next five years.

The major challenges for Swiss companies are inventories and accounts receivable

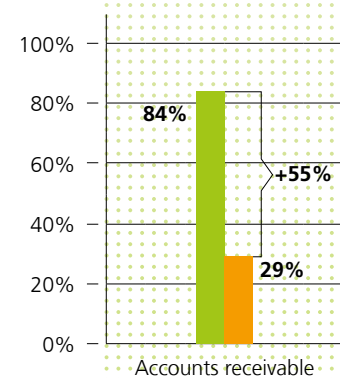
Evaluation of the challenges in the four WCM areas



From a strategic perspective, the study participants believe that the largest challenges are to be found in inventories and accounts receivable. In inventory management, the reasons given include, in particular, inconsistent planning processes, inadequate controlling and a lack of knowledge among the employees involved regarding the concepts and instruments to be applied.

In accounts receivable management, the challenges are reflected in the low rate of automation (29%). Swiss companies often have a non-uniform approach to working with their customers, with unstructured specifications and individual payment terms. In contrast, the top 10 companies are reducing manual interventions to a minimum and process an average of 80% of their accounts receivable automatically.

Proportion of automatically processed accounts receivable invoices



■ Top 10 companies
■ Average

SCF offers companies new possibilities for a holistic approach to WCM

Supply chain finance (SCF) aims to optimize cross-company working capital and to integrate financial processes between customers, suppliers and external service providers. SCF therefore seeks to balance the various interests and objectives in WCM throughout the cross-company value-creation process and to improve it for the involved parties.

The study results show that there is a range of innovative SCF solutions that use various digital means to ensure this integration. In particular, there is already a range of technologically advanced SCF solutions available on the market for the WCM reference points of accounts payable and receivable. SCF solutions for inventory are currently not as well developed. The survey shows, however, that inventory financing solutions offer the most innovative approach for Swiss companies. Off-balance approaches in particular – which balance working capital connected to inventories at a financial or logistics service provider – were regarded by those surveyed as having big potential for improving their WCM.

A notable general trend is that more solutions are being developed which are characterized by high-quality networking capability, modularization and technology penetration. Blockchain technology, above all, currently offers additional development impetus in this field. This not only results in far-reaching consequences for Swiss companies, but also in new opportunities for holistic WCM in the supply chain.



Top companies finance up to **20% of total assets** with trade finance and SCF instruments.

Innovative SCF solutions are characterized by global networking capability and a high degree of technological penetration

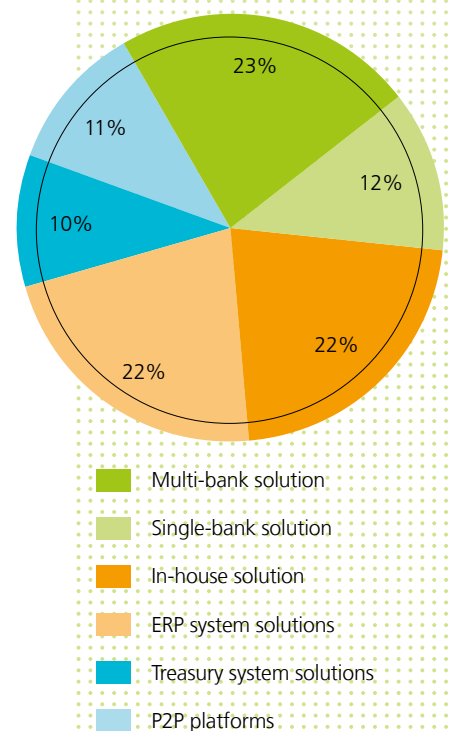
Requirements for SCF solution providers



Developments on the SCF market are strongly driven by companies' need to secure their long-term liquidity without high administrative expenses. When deciding on an SCF provider, companies place great emphasis on global usability and market experience. Closely related to this is the need for technical implementation within the company – particularly integration into ERP systems – to remain simple, while ensuring the need to change existing processes is as low as possible. The latter requirement includes in particular the desire for the SCF platform to be as straightforward as possible for supply chain partners to use.

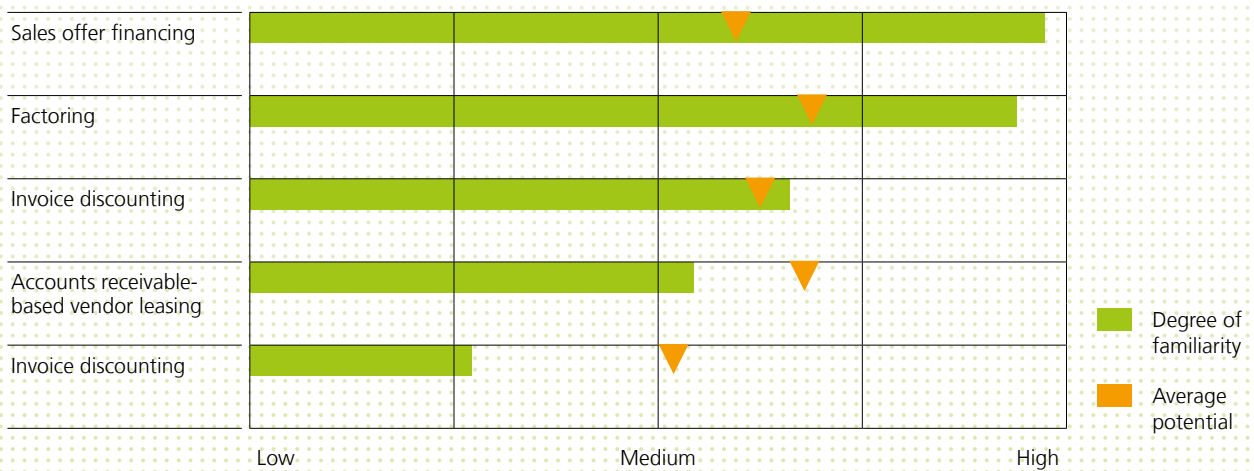
For the technical implementation of SCF programmes, Swiss companies mainly use multi-bank (23%), in-house (22%) and ERP system solutions (22%). Single-bank solutions, P2P platforms and treasury system solutions are less common.

SCF platforms used



SCF solutions in accounts payable are considered to have relatively high potential

SCF solutions for accounts payable: degree of familiarity and estimated potential



In comparison, the potential of SCF solutions in accounts payable is estimated to be high. There are only very minor differences between the level of potential seen for individual SCF solutions. However, study participants were on average less familiar with the solutions, and their practical application appears to show room for improvement. Companies both large and small have yet to take full advantage of the procurement benefits offered by SCF programmes.

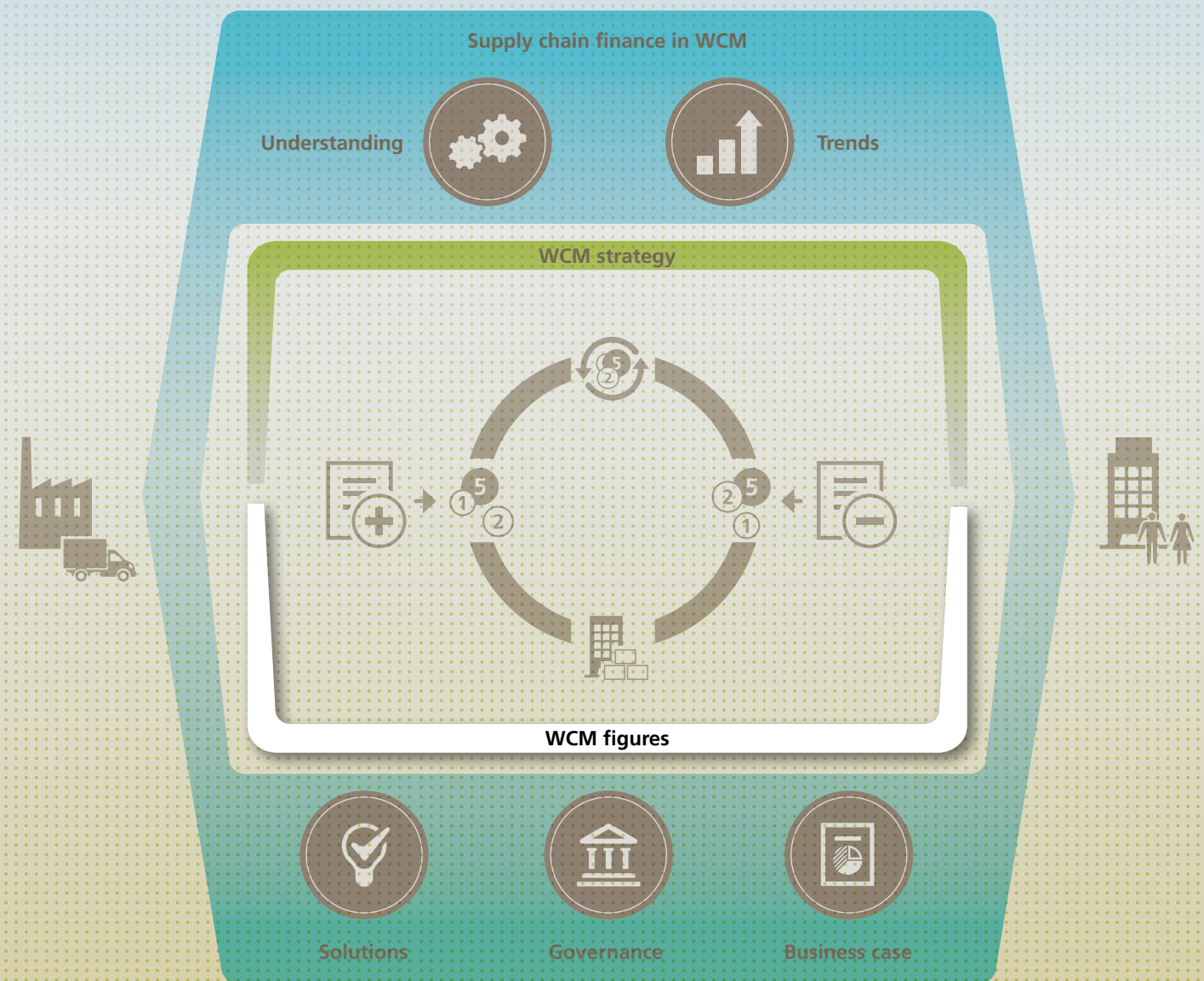
It is notable that the lesser-known SCF solutions were seen as having the most potential. Respondents regarded dynamic discounting in particular as a source of high potential. The large gap between how well a solution is known and the degree of potential it is perceived to have points to a great need for action and highlights an interesting contradiction: while familiarity with SCF solutions remains rather low, they are seen as offering great potential for WCM, relatively speaking.

Implementation period for reverse factoring solution



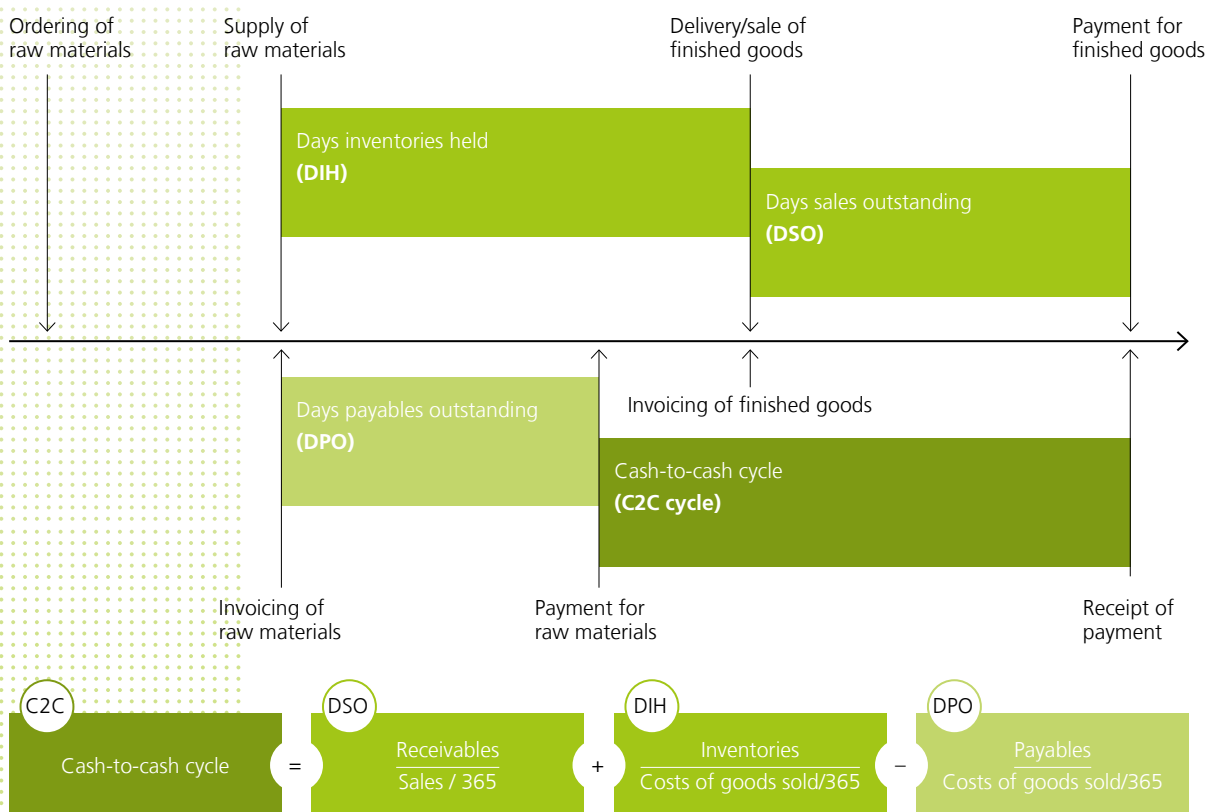
Swiss companies required an average of seven months for the implementation of their reverse factoring solution (downward trend).

WCM figures



The C2C cycle is a key performance indicator in WCM

In WCM, the cash-to-cash cycle (C2C cycle) is a key indicator for evaluating the performance level of individual companies or sectors. The indicator reflects the cash conversion cycle at the company in days between payment to suppliers and inpayment by customers, including all days inventories held. The C2C cycle generally covers only the working capital of an individual company and consists of the following three components:

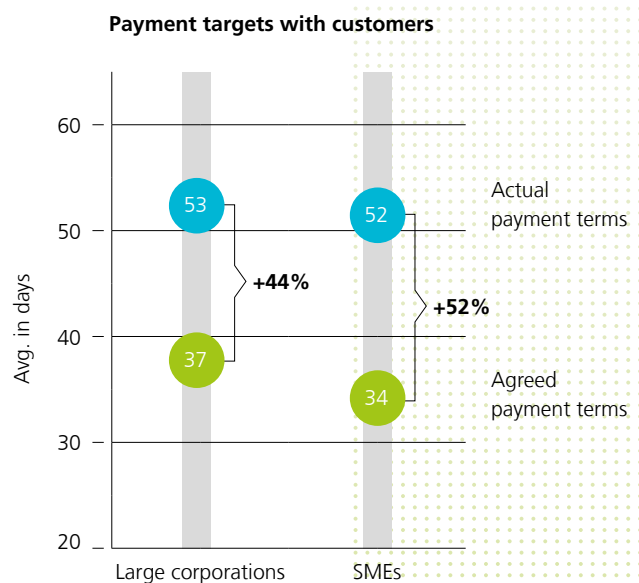


The C2C cycle is a useful indicator for identifying improvement potential in WCM. A high DIH value, for example, usually indicates inefficient inventory management. However, company-specific drivers and industry-standard characteristics must always be taken into account in the interpretation of time periods in the context of holistic WCM. A high DIH value may be completely justified if the availability of goods is a company's main target.

The actual payment terms with customers far exceed those agreed

There is a big difference between the contractually agreed payment terms and the days payables outstanding. This indicates that payment collection and dunning processes are not implemented systematically enough in Swiss companies.

At 52%, the discrepancy between the agreed and actual payment terms at medium-sized companies is particularly high. However, there is also enormous potential for large companies to significantly reduce the gap to their targeted payments receivable range by professionalizing their accounts receivable management.

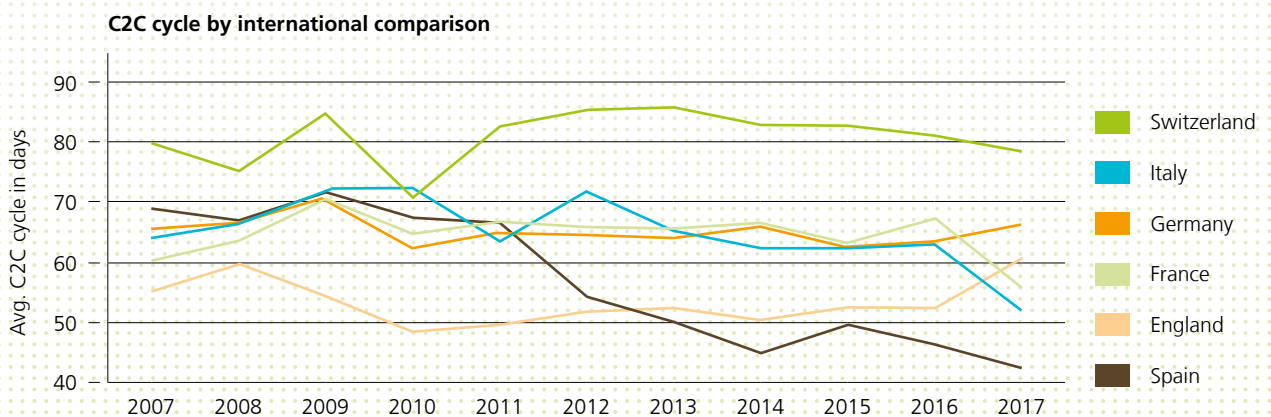


of those surveyed
anticipate a **reduction
in working capital**
over the next five years.

The majority of finance managers surveyed believe that working capital will decline further in the near future. The reasons given include in particular the introduction of shorter payment terms for customers and the reduction of the inventory range thanks to new technological investment. Increasing pressure from investors to professionalize WCM through appropriate measures is also seen as a driver towards a reduced level of working capital.

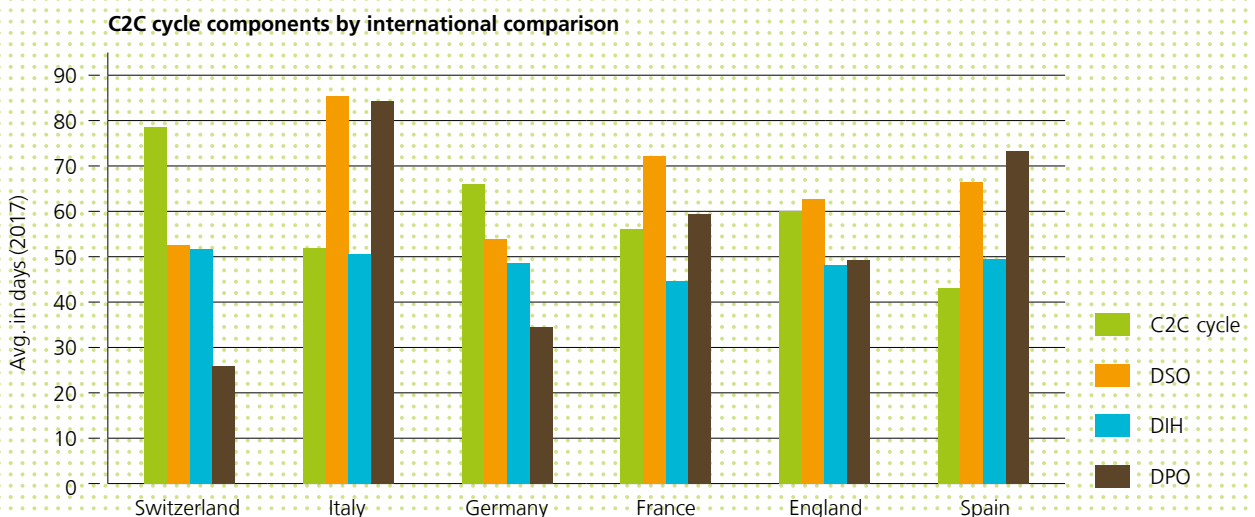
By contrast, a minority (41%) expect trends to develop in the opposite direction. The main reason given is strong company growth. The importance of ensuring that the relationship between working capital and sales remains stable despite sustained growth is also emphasized.

Swiss companies have a disproportionately high C2C cycle



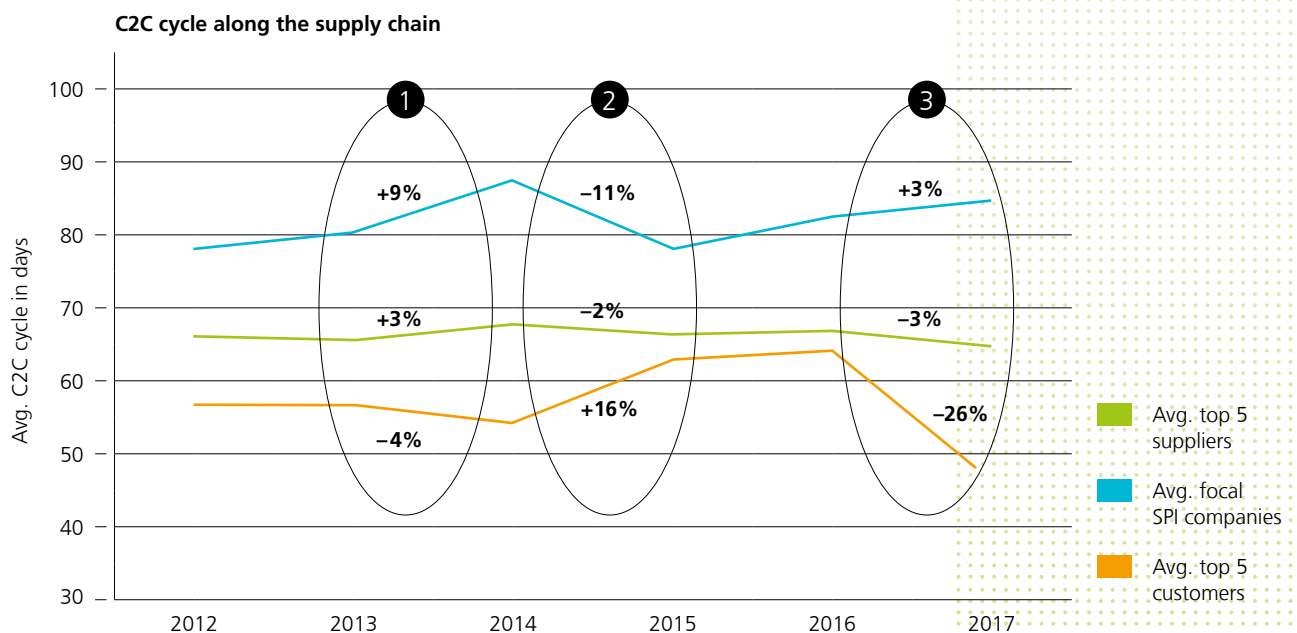
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- 2 By international comparison, the companies also have the highest DIH on average, at just under 52 days. The high level of capital commitment points to great optimization potential in inventory management and can partly be attributed to the generally good order situation in Swiss industry.



Various WCM spillover effects can be seen along the supply chain

The analysis of the C2C cycle along the supply chain of Swiss SPI companies highlights the importance of a cooperative WCM approach over the course of time. A unilateral reduction of working capital results in an increase in capital commitment amongst customers and suppliers. There is a risk that this will create liquidity bottlenecks and cause a deterioration in long-term relationships.



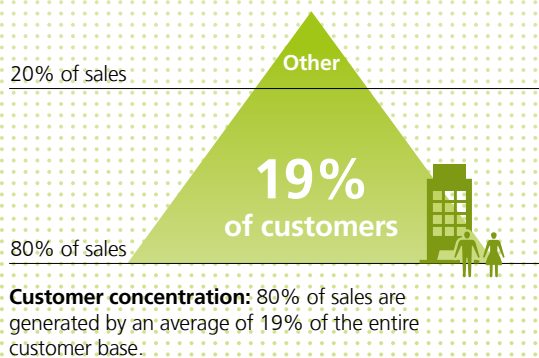
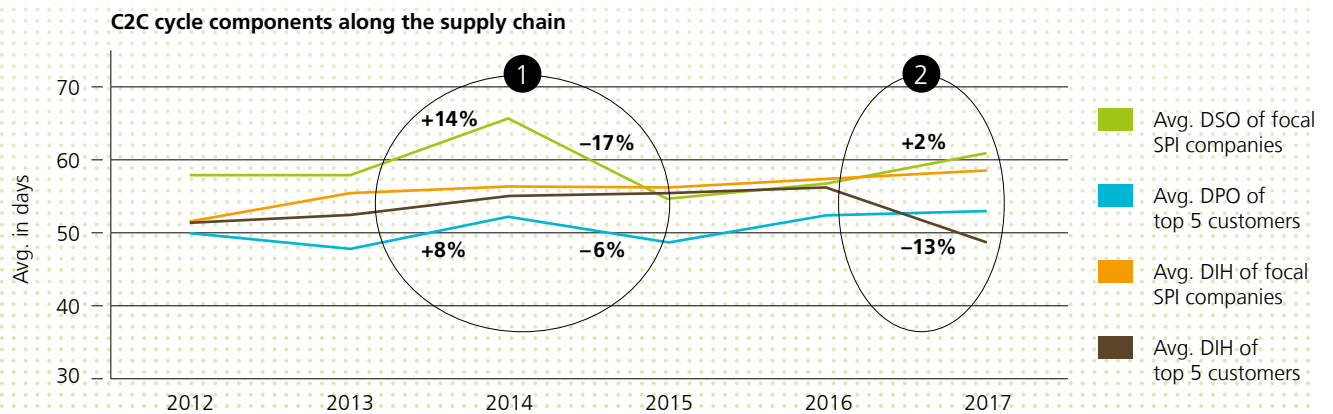
1 The C2C cycle of the top 5 customers fell by 4% on average in 2014, while the capital commitment of the focal SPI companies rose by 9% at the same time.

2 The C2C cycle of the top 5 customers rose by 16% on average in 2015. At the same time, the C2C cycle of the upstream supply chain partners fell by 11% and 2% respectively.

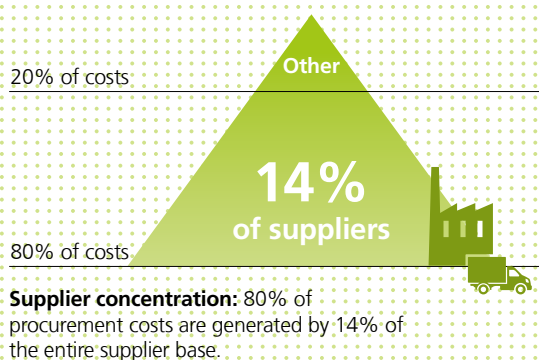
3 In 2017, the capital commitment amongst the top 5 customers experienced a considerable decrease of 26%. At the same time, the C2C cycle of the focal companies and top 5 suppliers remained relatively stable. The top 5 customers succeeded in reducing their working capital without negative consequences for the upstream supply chain partners.

A high concentration of suppliers and customers results in significant WCM leverage effects

The in-depth analysis of the C2C cycle components between the focal SPI companies and their top 5 customers illustrates the supply chain spillover effects in WCM.

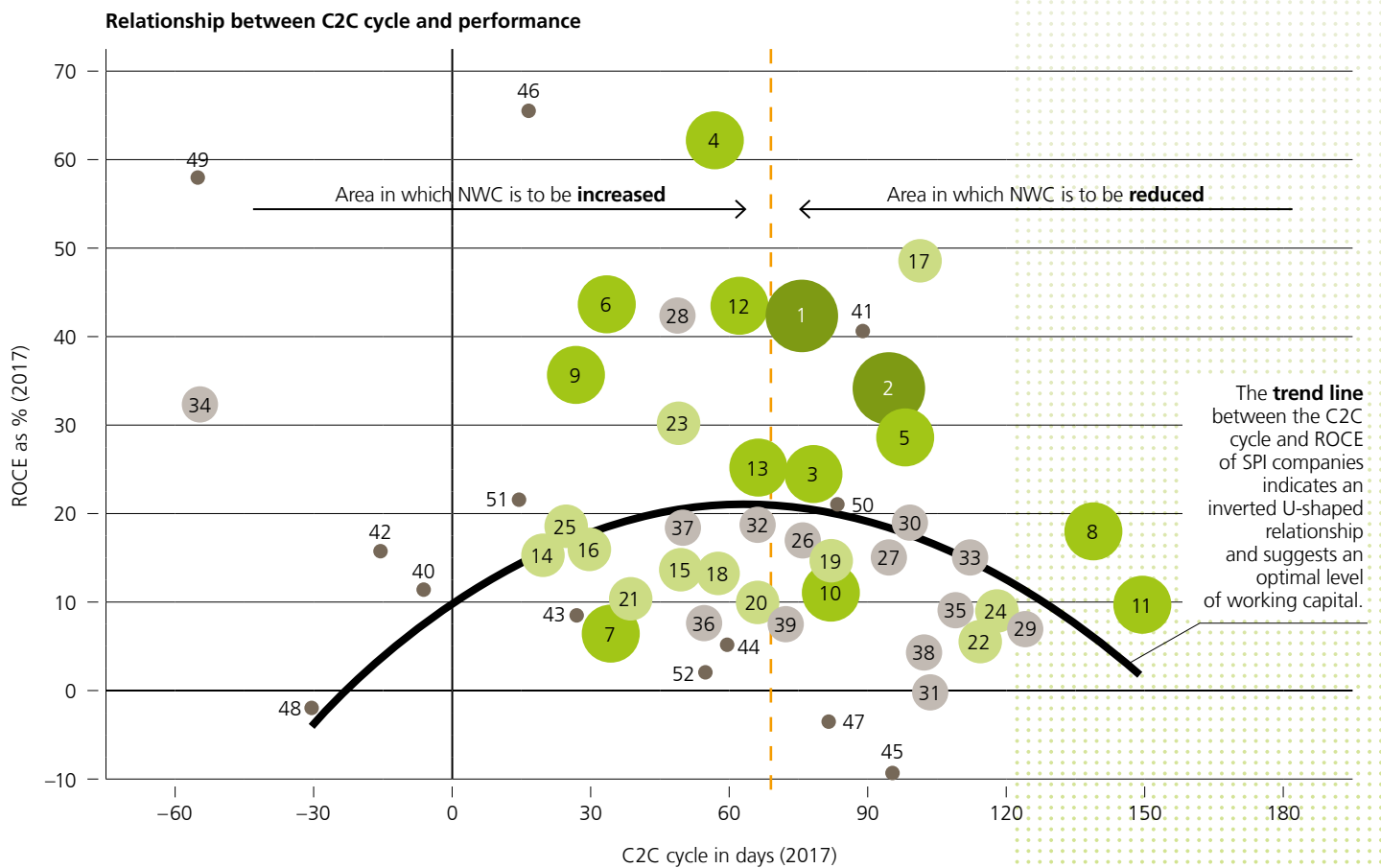


- 1** In 2014, the liabilities of the top 5 customers increased by an average of 8% at the expense of the focal companies, which recorded a 14% rise in receivables over the same period. By contrast, the focal SPI companies succeeded in significantly reducing their average days receivables held by an average of 17% in 2015. This development partly reflects customers' reduced days payables outstanding (-6%).



- 2** A similar picture emerged with regard to inventories in 2017. The 13% reduction in the average inventory range amongst customers is reflected in the 2% increase in the range of inventories at focal SPI companies. This result suggests that suppliers are making greater use of options such as vendor-managed inventory (VMI) solutions to offer their customers high availability with low levels of stock.

Between the C2C cycle and the ROCE...

**Net working capital (NWC)
in CHF millions****SPI companies**

1. Novartis	14. Also	26. AMS	40. Aryzta
2. Roche	15. Clariant	27. Daetwyler	41. Ascom
3. ABB	16. DKSH	28. Geberit	42. Bobst
4. Adecco	17. Dormakaba	29. Huber + Suhner	43. Flughafen Zuerich
5. Givaudan	18. Emmi	30. Interroll	44. Meier Tobler
6. Kühne + Nagel	19. Georg Fischer	31. Kudelski	45. Meyer Burger
7. LafargeHolcim	20. OC Oerlikon	32. KTM Industries AG	46. Mobilezone
8. Lindt & Sprüngli	21. Panalpina	33. Lonza	47. Myriad Group
9. Logitech	22. Schmolz + Bickenbach	34. Nestlé	48. Newron Pharma
10. Metall Zug	23. SGS	35. Phoenix M.	49. Sunrise
11. Richemont	24. Sulzer	36. Rieter	50. U-Blox
12. Schindler	25. Swisscom	37. Temenos	51. Valora
13. Sika		38. Vifor Pharma	52. Zwahlen & Mayr
		39. Zehnder	

Note: return on capital employed (ROCE) indicates how efficiently a company uses the capital available.

...exists an inverted U-shaped relationship

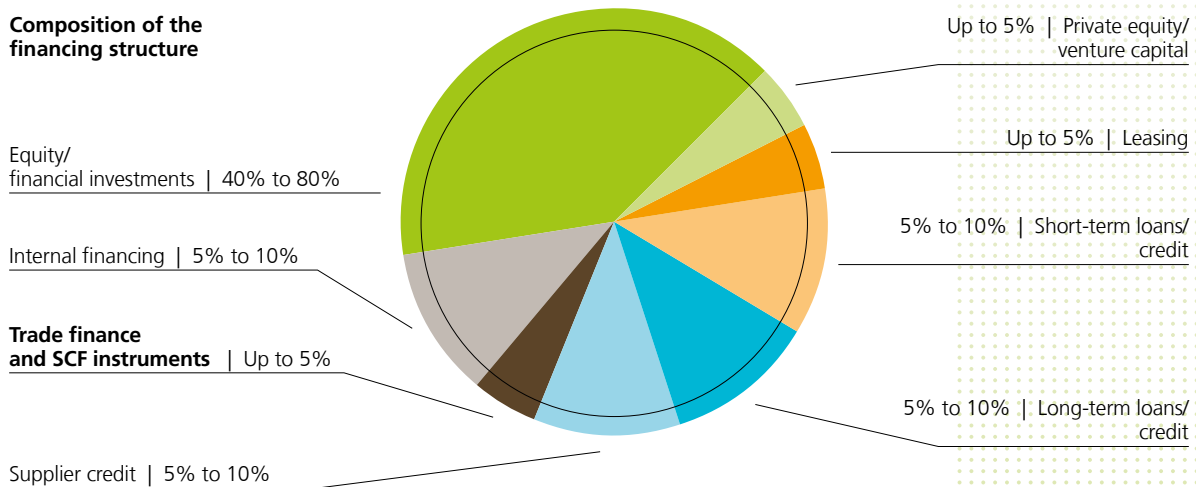
The WCM spillover effects along the supply chain substantiate the need for a holistic view of working capital. At operational level, it is not only the internal WCM goal conflicts between the individual company divisions that have to be addressed but also those that exist with supply chain partners (customers and suppliers).

Comparing company performance with the C2C cycles of the focal SPI companies reveals that those companies with a slightly positive C2C cycle deploy their working capital most efficiently. The results suggest that an inverted U-shaped relationship exists between company performance (approximated with ROCE) and the C2C cycle (in days). The analysis suggests that there is an optimal level of working capital at which positive and negative effects are balanced out and performance is maximized. The optimum depends on various drivers and influencing factors, such as industry characteristics.

The analysis also implies that a reduction in working capital has a positive impact on company performance to only a certain extent. If the optimal level threshold is not met (the C2C cycle is reduced too greatly), an additional reduction in working capital seems to have a negative impact on performance. This outcome reflects the basic principle that the capital commitment time should align with the financing period (financing with matching maturities).

Alternative financing sources are becoming increasingly important despite the low-interest environment

Composition of the financing structure



To finance their operational fixed and current assets, companies draw on a wide range of financing sources. Swiss companies mainly use equity and financial investments. They try to release financial resources by optimizing capital structures. In particular, supplier credit is used to cover short-term liquidity requirements.

By contrast, conventional bank loans play a less significant role, despite the ongoing low-interest environment. Instead, the focus is being placed on increasing financial flexibility with alternative sources of finance. Some examples of this are innovative trade finance and SCF instruments, which already account for up to 20% of total assets at top companies. In light of this situation, a third of the finance managers surveyed believe their company's financing structure will change significantly over the next five years.

20%

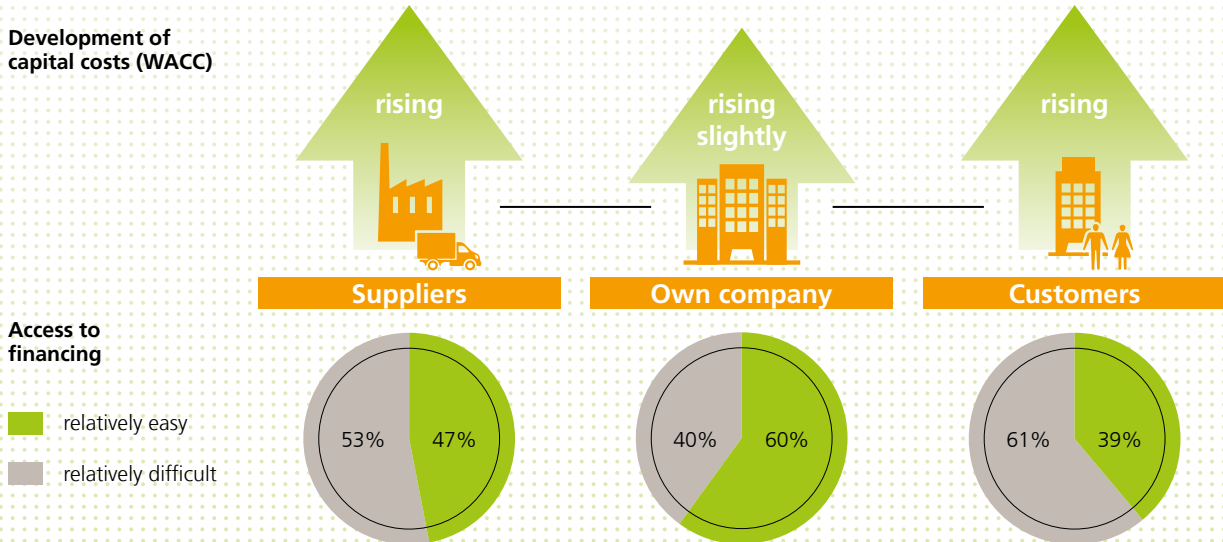
Top companies finance up to **20% of total assets** with trade finance and SCF instruments.

33%

A third of the finance managers surveyed believe there will be a significant **change in the composition of their financing structure** over the next five years.

Rising capital costs are expected for all supply chain partners

Development of capital costs (WACC)



2.2%

Average interest rate for a bank loan

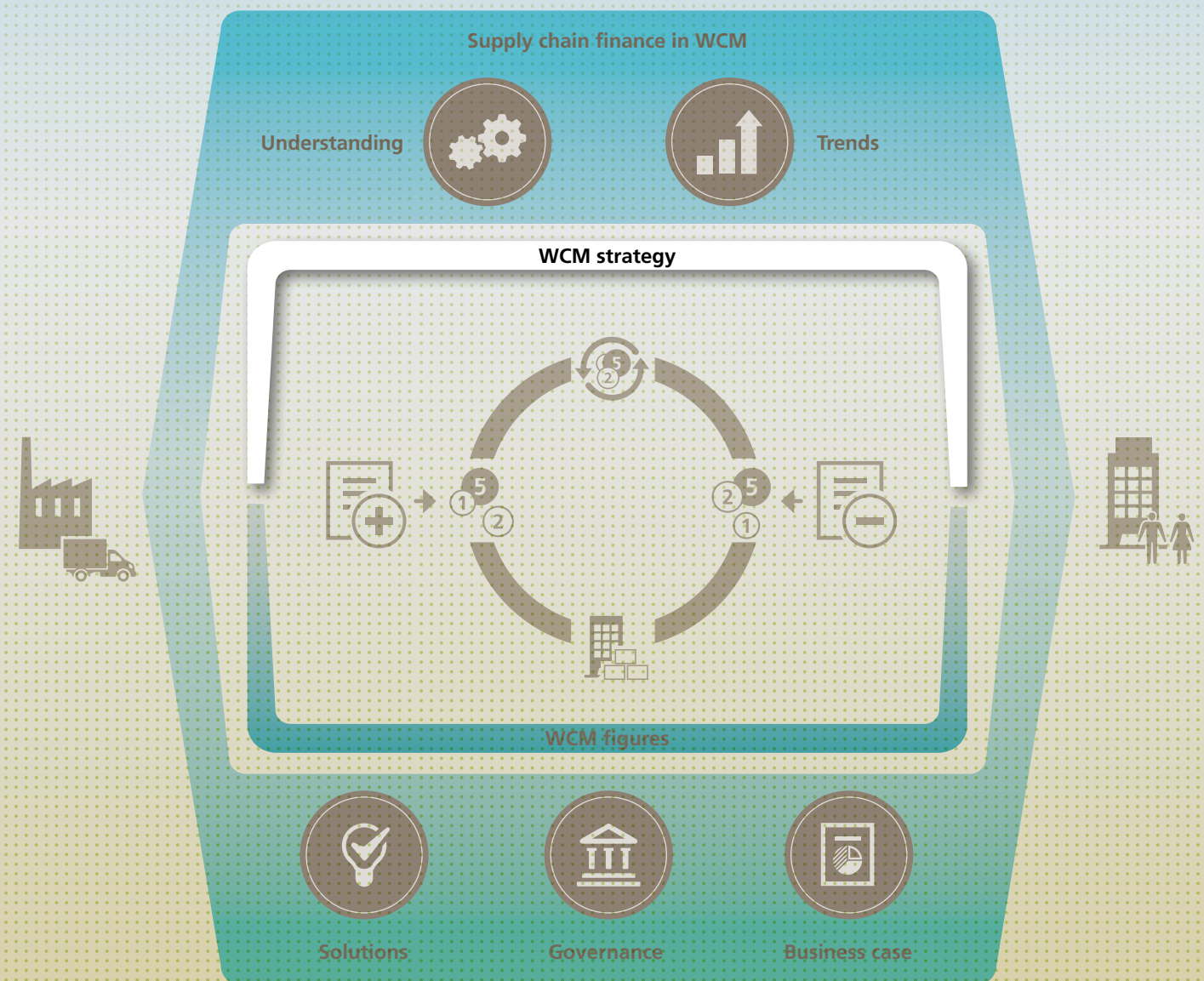
Swiss companies are exposed to growing cost pressure due to the increase in the intensity of competition on the globalized markets. The majority of study participants anticipate that the capital costs of their suppliers and customers will rise over the next five years. This is despite the fact that, on average, banks demand the relatively low interest rate of 2.2% from their borrowers in Switzerland.

6.5%

Average capital costs (WACC)

Over 50% of the companies surveyed believe access to finance is relatively difficult for their suppliers and customers. This reflects the challenge that small supplier and customer companies face in obtaining adequate financing from banks. Focal companies with strong finances are also compelled to consider how they can support their suppliers and/or customers financially.

WCM strategy



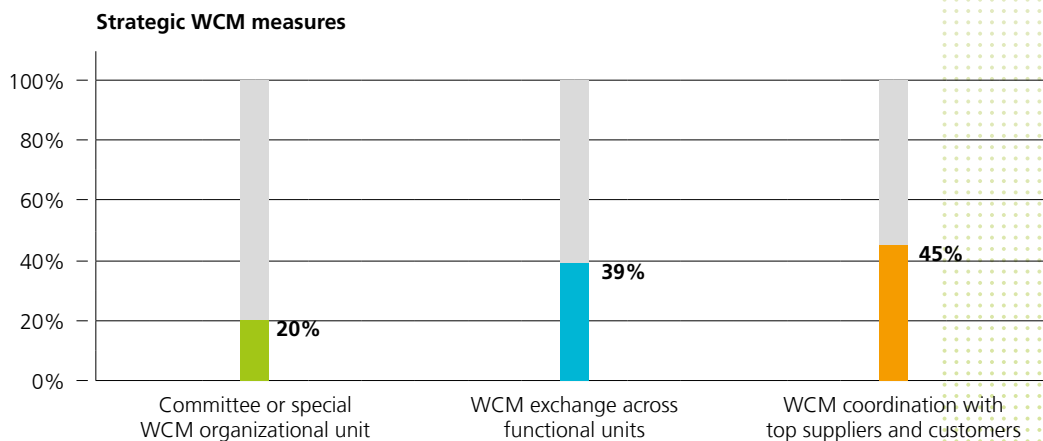
A clear WCM strategy defines strategic thrusts and serves as a reference point within the company

There are few financial matters within the company that affect as many functional units as WCM. Due to its cross-functional nature, working capital management is an ongoing task and has to be firmly established in the company strategically over the long term. In addition to establishing a formal operating framework, such as a WCM officer, informal measures are also required – such as regular training sessions to create a common understanding of WCM. These measures should result in a holistic reporting system and better key indicators. The main challenges of WCM are often not the definition of the target, but rather the specific cross-functional implementation of effective measures in day-to-day business operations.

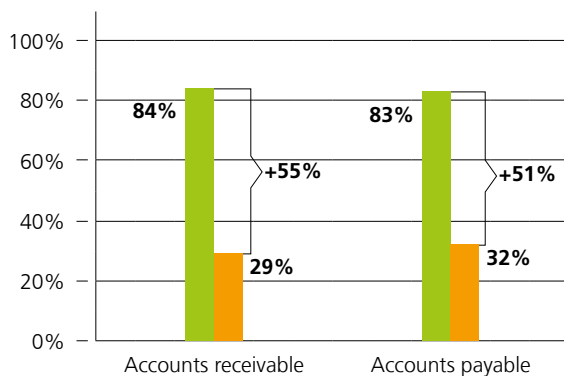
An explicitly formulated WCM strategy provides a point of reference within the company and defines the approach towards customers and suppliers which is designed to achieve the intended corporate goals. One of the main tasks is to address the various influencing factors within and outside the company and stakeholders' interests and to pursue appropriate courses of action. Inventories, for example, increase the tied-up capital, but also ensure customer satisfaction. Similar issues have to be resolved in accounts receivable, accounts payable and liquidity management. With this in mind, a clear WCM strategy enables well-defined prioritization of the issues to be addressed, including the strategic thrusts in operational areas.

Very few companies currently perceive WCM as an ongoing and strategically important task

Successful WCM requires the underlying processes to be structured efficiently, coordinated company-wide and across different functions, and regularly controlled and managed. A minority of 45% of the companies surveyed indicated that they carry out their WCM with the involvement of their top suppliers and customers and hold regular discussions across different functions and departments (39%). However, only 20% of those surveyed have set up an exclusive WCM committee or a special organizational unit dedicated to WCM issues.



Proportion of automatically processed accounts receivable and accounts payable invoices



On average, over 80% of accounts receivable and accounts payable are processed on an automated basis at the top 10 companies. The specification of standards is a key success factor. Manual system interventions are reduced to a minimum.

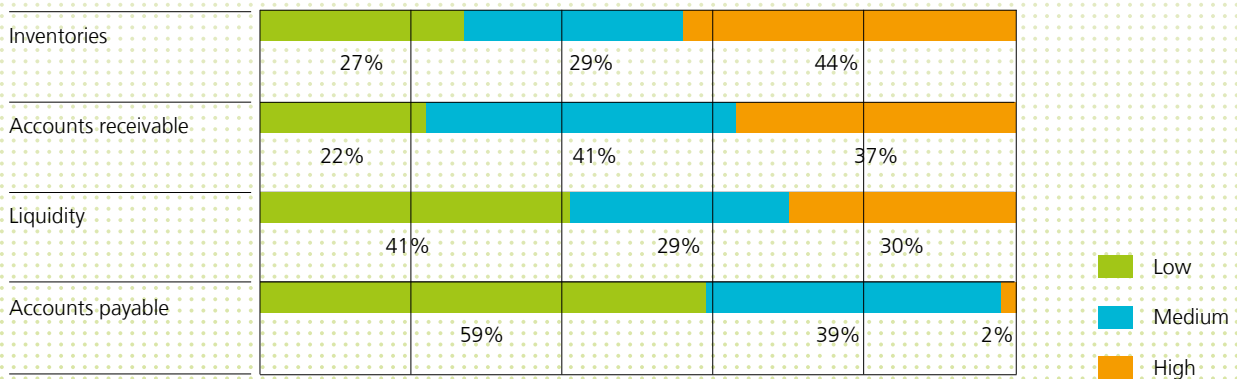
Generally speaking, Swiss companies often have a non-uniform approach to working with their supply chain partners, with unstructured specifications and individual payment terms. This is reflected in the significantly lower rates of automation in accounts receivable and accounts payable (29% and 32% respectively). The wide gap to the top 10 companies means there is efficiency improvement potential of up to 55%.

■ Top 10 companies
■ Average

The major challenges for Swiss companies are in inventories and accounts receivable

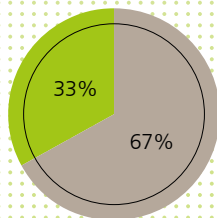
From a strategic perspective, the study participants believe that the largest challenges are to be found in inventories and accounts receivable. The reasons given include inconsistent planning processes, inadequate controlling and a lack of knowledge among the employees involved regarding the concepts and instruments to be applied.

Evaluation of the challenges in the four WCM areas



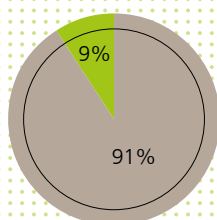
Assessment of company's own performance compared to competitors

Accounts receivable

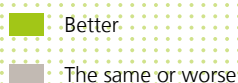


67% of those surveyed indicated that their accounts receivable performance was the same or worse than relevant competitors. The result for inventories was even clearer: 91% of those surveyed believe that they lag behind competitors in inventory management. The primary reasons for this are divided responsibility for inventories, the "psychological" distance from the treasury department and the lack of awareness of the financial implications of individual actions.

Inventories



By contrast, the challenges posed by accounts payable are deemed less significant. This is worthy of note as the days payables outstanding at Swiss companies averages 24 days, which means they pay their suppliers considerably too early in comparison with other European countries. The introduction of an SCF solution (e.g. reverse factoring) enables significant improvement potential to be leveraged, resulting in a win-win situation.



The appropriate level of working capital is determined by internal factors...

A key task of strategic WCM is determining the appropriate level of working capital for an individual company. Various influencing factors within and outside the company must be taken into account.

Study participants identified their own liquidity situation, bargaining power and strategic positions towards suppliers as preferred customers as the most important internal factors for determining the appropriate level of working capital. Companies with very strong liquidity positions aim to become preferred customers of their suppliers by making early payments and also accept a higher level of working capital.

Less importance is attached to the level of net debt, negotiating power towards customers and the level of automation of WCM processes.

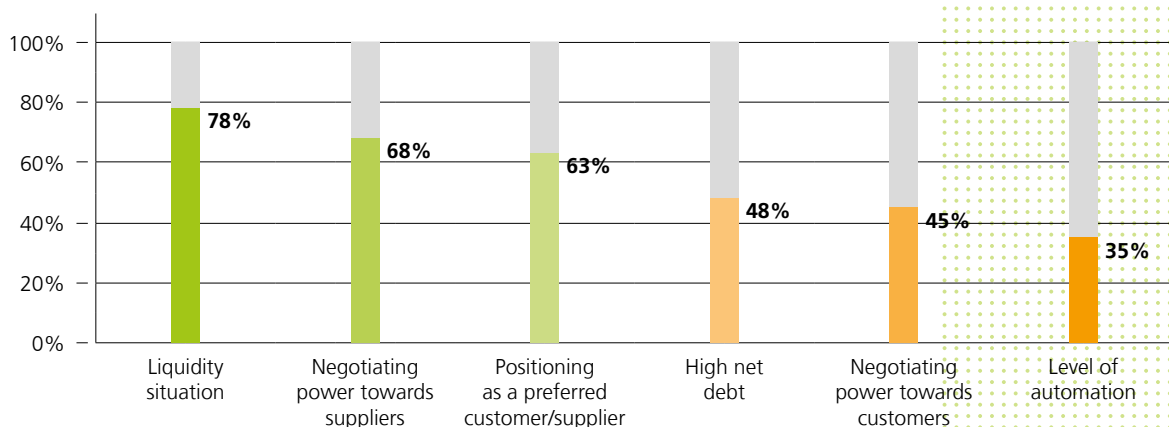


of the companies surveyed reflect **internal factors** in the strategic determination of their WCM targets.

Adequate NWC level:

An adequate level of working capital is determined by the funds required to finance a company's operational cycle while at the same time meeting the strategic goals relating to customers and suppliers as fully as possible. The optimal level is achieved when the difference between the resulting benefits (= positive effects) and the costs incurred (= negative effects) of the capital commitment are balanced to the greatest extent possible.

Evaluation of the relevance of internal factors



...and external factors



of the companies surveyed reflect **external factors** in the strategic determination of their WCM targets.

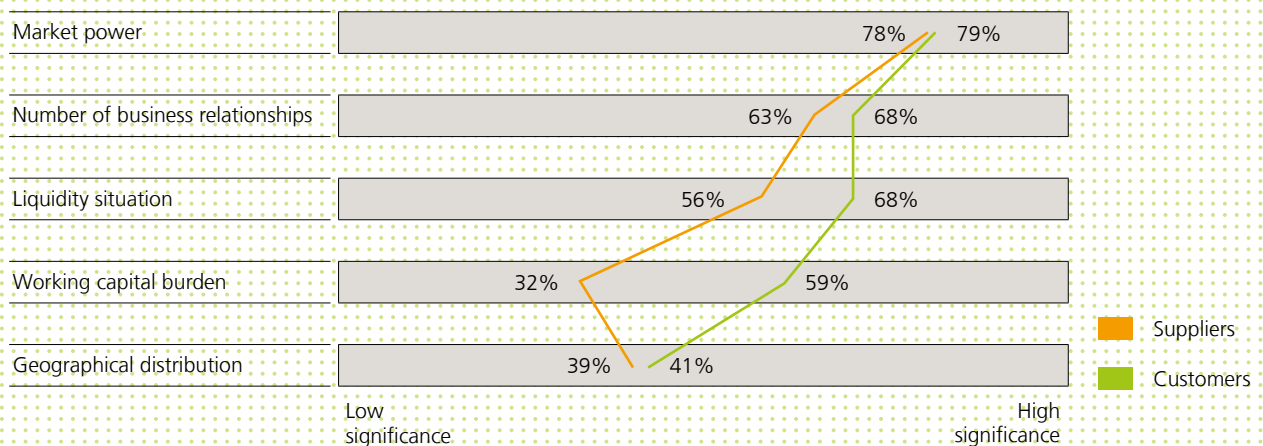
With regard to external influencing factors, just under 80% of those surveyed believe that customers' and suppliers' market power are the most important drivers in working capital.

Companies may therefore implement longer payment terms for upstream supply chain partners (suppliers), which results in a shortened C2C cycle. However, just 20% of the companies surveyed reflect such cause-effect relationships in their WCM key indicators and strategic objectives.

With regard to downstream supply chain partners (customers), over two-thirds of those surveyed (68%) indicated that the liquidity situation and size of the customer base were the most important factors in the level of their own working capital.

Country-specific payment habits were also deemed a relevant factor for adequate working capital. An expansion into new markets often involves significant changes to the targets set in the domestic market.

Evaluation of the relevance of external factors along the supply chain



Case study – Emmi

Emmi's WCM strategy provides a clear definition, ensures constant measurement of WCM and...

Background

WCM has been a key element of group-wide financial governance at Emmi since 2009 and is also part of group-wide quarterly reporting. At strategic level, responsibility for WCM lies with the CFO and, at operational level, with Group Controlling & Treasury and the internal auditing department.

Although Emmi was initially not exposed to any extreme pressure to implement WCM improvements, there were a number of reasons why working capital management became an ongoing and strategically important task:

- Lack of transparency and heterogeneous system landscape
- Volatile milk price and fluctuating exchange rate
- Very high inventory risks due to high stocks of butter, milk and powdered milk
- Increased need for liquidity due to acquisitions in Switzerland and abroad
- Inconsistent use of discounts within accounts payable
- No institutionalized dunning process in accounts receivable management

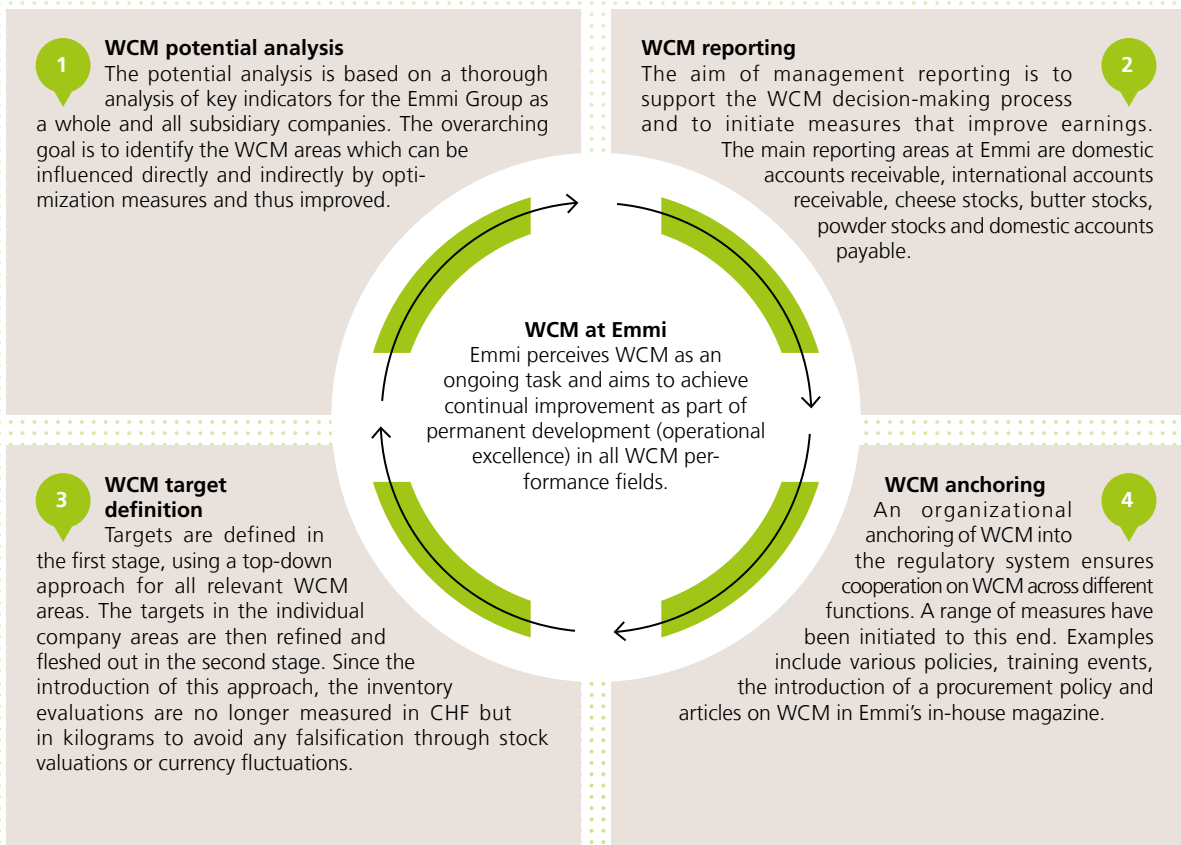
Strategic approach

Emmi applies a narrow operational definition, covering in particular accounts receivable, inventories and accounts payable, for managing and reporting on working capital. Items in the balance sheet and financial flows which are not related to day-to-day operations and which cannot be influenced by Emmi are intentionally excluded. This includes, for example, annual premiums for machinery insurance which Emmi must settle at the beginning of the year.

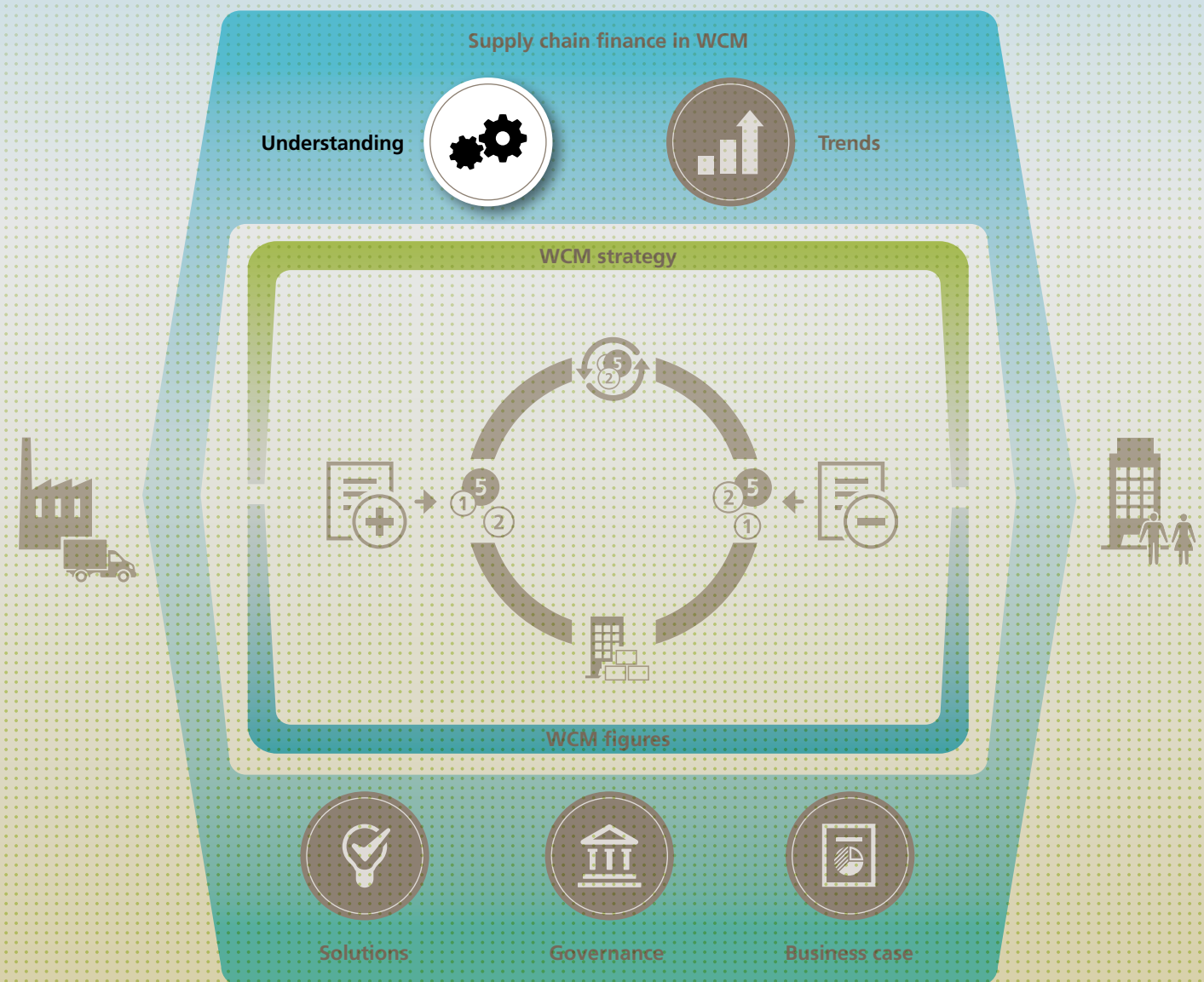
The **Emmi Group** is the largest milk processing company in Switzerland and focuses on the production and marketing of dairy and fresh products.

...consists of a continuous improvement cycle

Emmi focuses on a continuous improvement cycle in WCM which consists of four main components:



SCF understanding

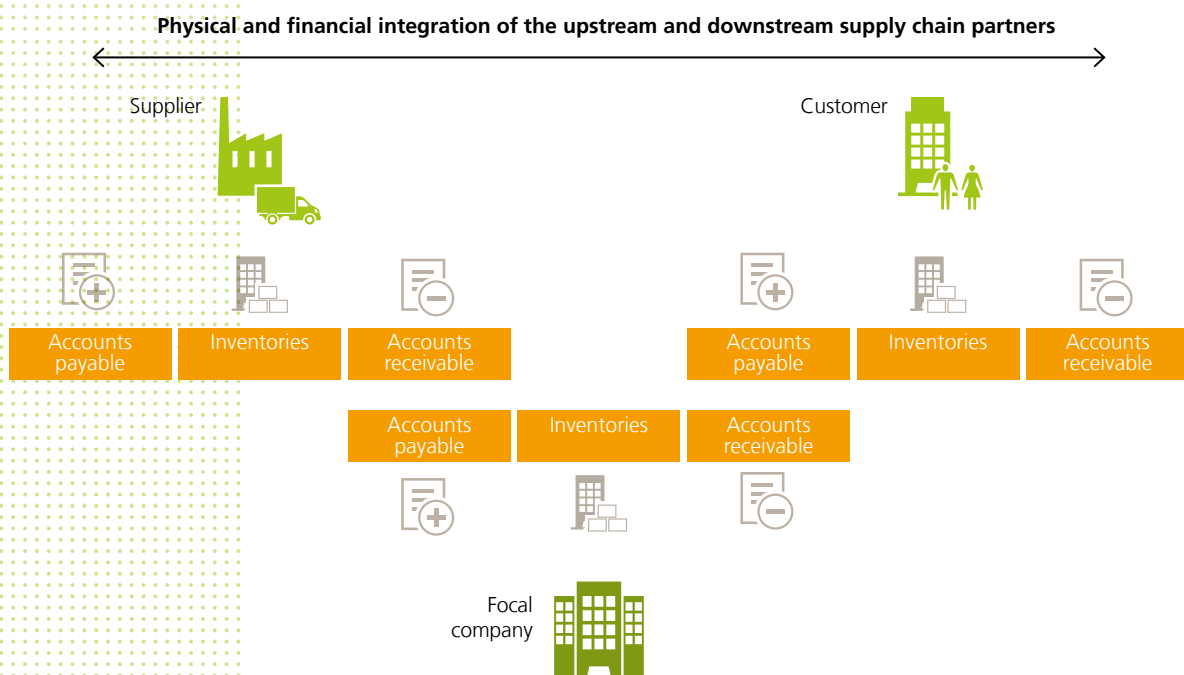


SCF extends the WCM perspective to the entire supply chain

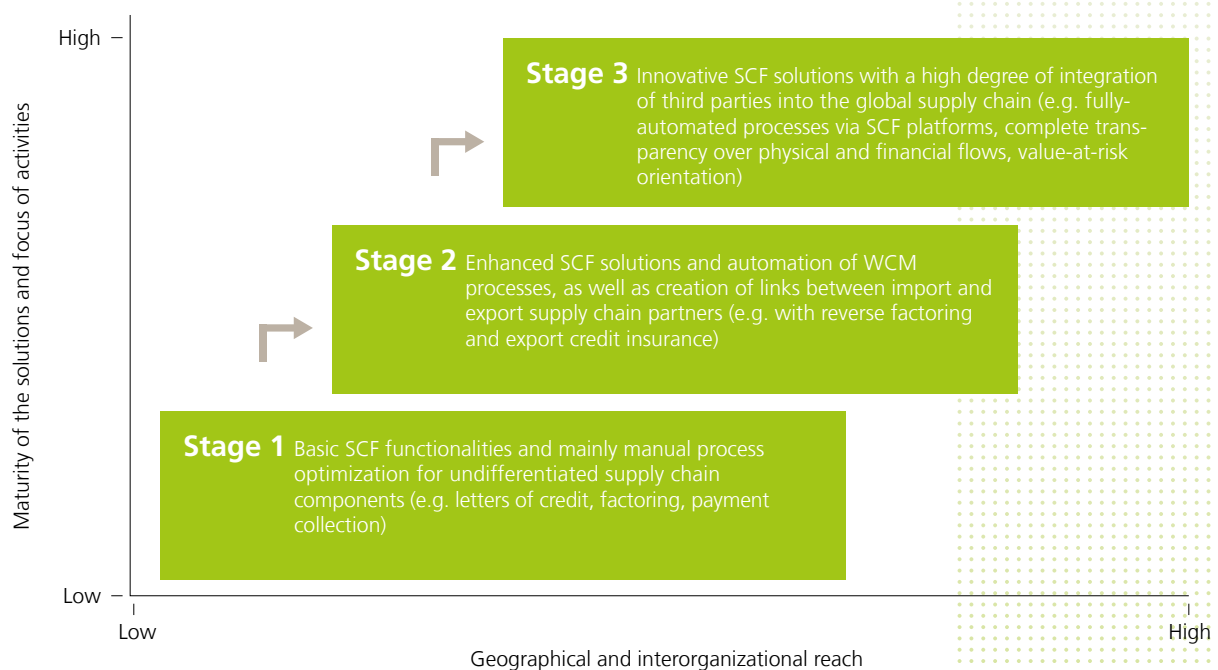
As part of a holistic WCM approach, the optimization of working capital cannot be successful unless the consequences of corporate decision-making are taken into account for one's own company as well as for supply chain partners. For example, a unilateral, systematic extension of the days payables outstanding can have a long-term negative impact on reputation among suppliers and, in turn, on company success.

Based on this perspective, supply chain finance (SCF) aims to optimize working capital company-wide and to integrate financial processes between customers, suppliers and external service providers. SCF therefore seeks to balance the various interests and objectives in WCM throughout the company-wide value-creation process and to improve it for the parties concerned.

The study results show that a range of innovative SCF solutions currently exist on the market which use various digital means to ensure this integration. This not only results in far-reaching consequences, but also in new opportunities for holistic WCM in the supply chain.



SCF can be divided into three stages of development...



Stage 1

The first SCF development stage dates back to the 1990s and is characterized by liquidity-oriented solutions which have a strong local or company-oriented focus. Typical examples include letters of credit, factoring and payment collection activities.

Stage 2

In light of increasing global trade, the second stage of development around the turn of the millennium is characterized by increasing use of technology and the networking capability of SCF solutions. A good example is the development of traditional factoring into international reverse factoring.

Stage 3

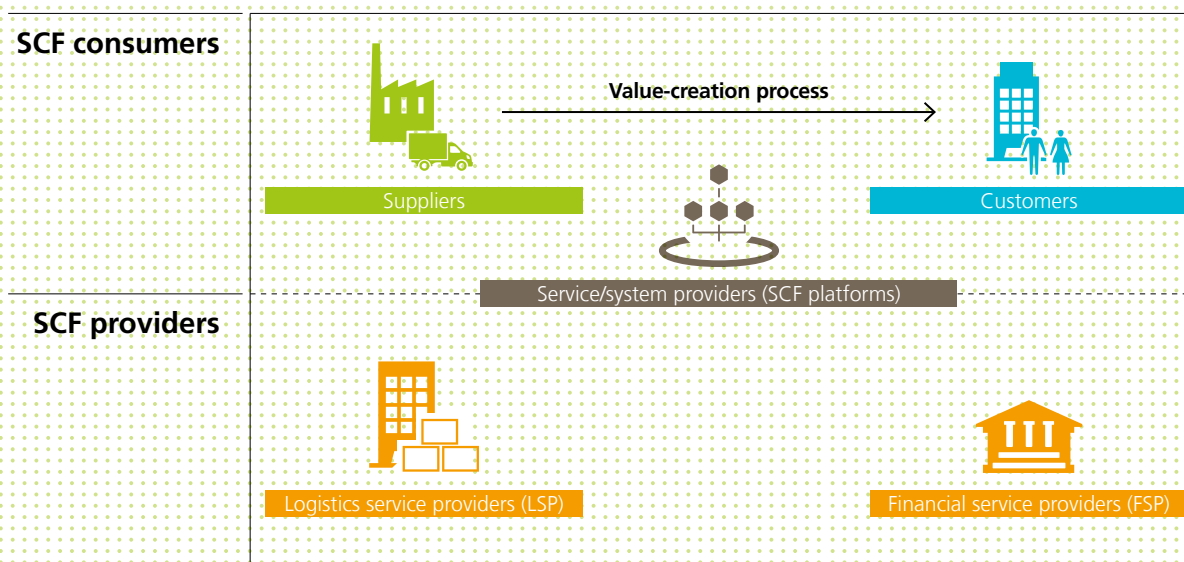
The third and current stage of development has the highest level of maturity with respect to the SCF solutions and their reach. SCF solutions at this level enable complete process automation for all stakeholders concerned and a global, common trade network where the physical and financial integration of supply chain partners is set up.

...and requires the integration of various stakeholders

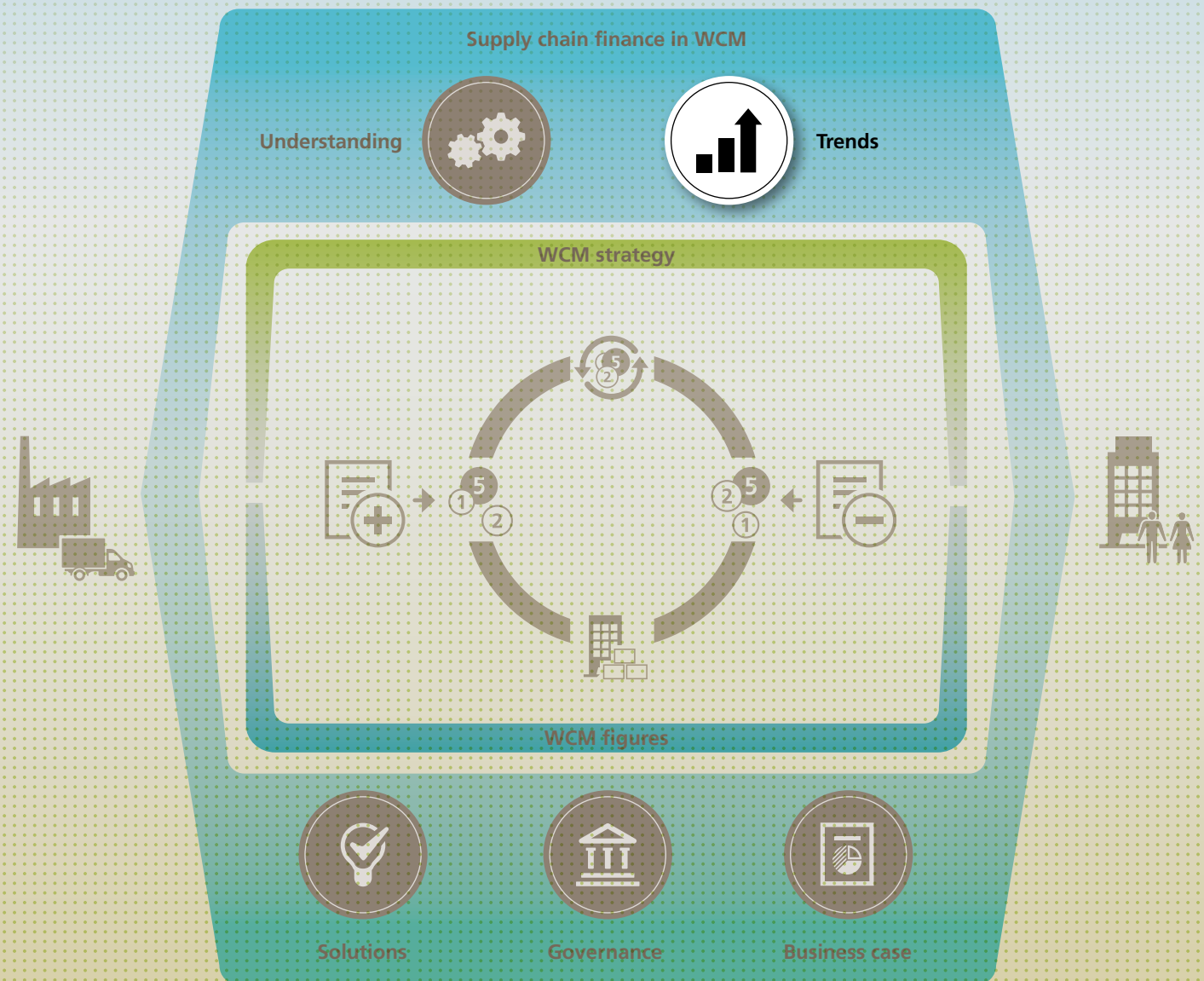
SCF solutions are generally based on a supplier-customer relationship and the value-creation process that lies between them. The demand side is made up of companies seeking to bridge the financing gap between production and incoming payments through external financing.

The SCF supply side is less transparent and characterized by great complexity. Financial service providers (FSP), traditionally represented by banks, are key players. For some time, a growing number of independent third-party service and platform providers have been acting as intermediaries between suppliers and customers. Their main task is usually providing an electronic link between the SCF supply and demand sides using suitable software solutions.

There are also internationally-oriented logistics service providers (LSP) which have added financing solutions to their traditional range of services. They generally act as an intermediary and play a key role in inventory financing solutions in particular. Due to their proximity to customers and high degree of integration into operational value-creation processes, they are an important source of information in determining credit risk.



SCF trends



The marketability of the SCF solutions on offer is now firmly established

Modern SCF solutions provide Swiss companies with highly promising opportunities for improving their working capital on a cooperative basis along the supply chain. A general trend observed on the SCF market is that more solutions are being developed which are characterized by high-quality networking capability, modularization and technology penetration. Blockchain technology, above all, currently offers additional development impetus in this field.

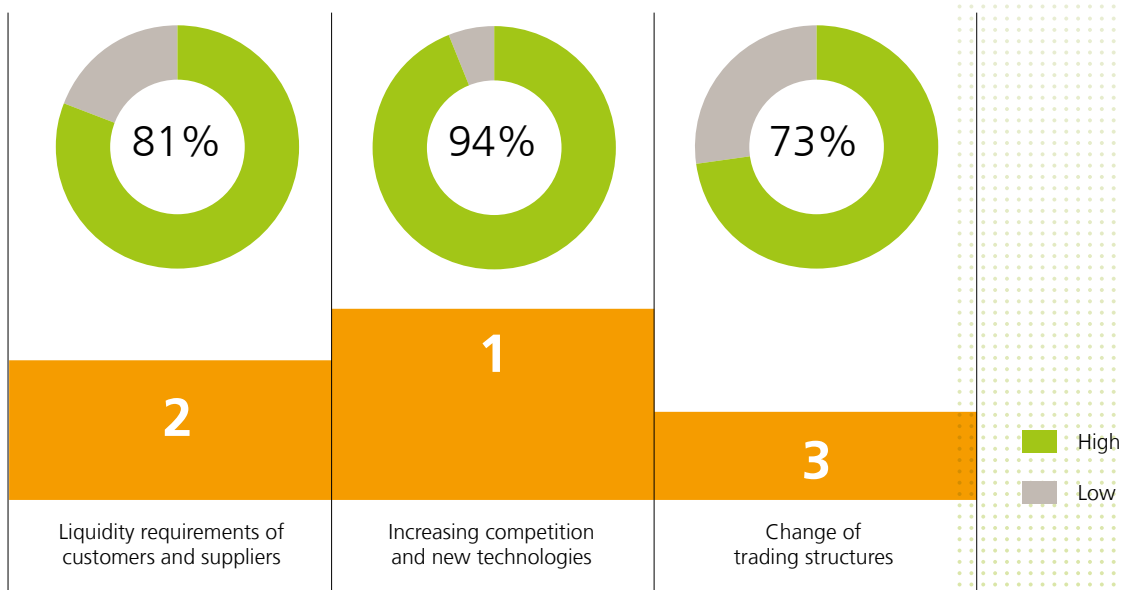
Market developments are strongly driven by companies' need to secure their liquidity long-term without great administrative expense. When deciding on an SCF provider, companies place great emphasis on global usability and market experience. Closely related to this is the need for technical implementation within the company – particularly integration into ERP systems – to remain simple, while ensuring the need to change existing processes is as low as possible. The latter requirement includes in particular the desire for the SCF platform to be as straightforward as possible for supply chain partners to use.

Requirements from SCF solution providers



Growing competition and increasing need for liquidity are the most important drivers for SCF

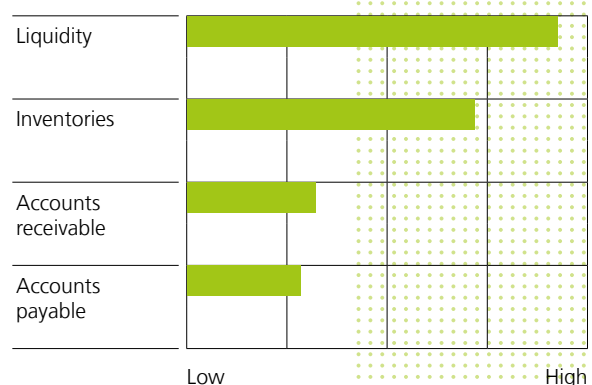
Importance of SCF drivers



Study participants classified increasing competition and cost pressure and the greater requirement for liquidity among supply chain partners as the most important drivers in the rapid rollout of new SCF solutions. A relevant enabler in this respect is the increasing penetration of platform concepts, which now make the WCM positions of small and medium-sized enterprises (SMEs) eligible on the capital and financial markets. The high level of dynamism on the SCF market is attributed to the increasing integration of companies into international trading structures.

There is consensus amongst those surveyed that SCF can achieve improvement potential in all four areas of WCM. The potential is classified as particularly high in inventory and liquidity management. This classification reflects the fact that many different approaches exist within the field of inventory financing but most of them are not yet at a very mature stage.

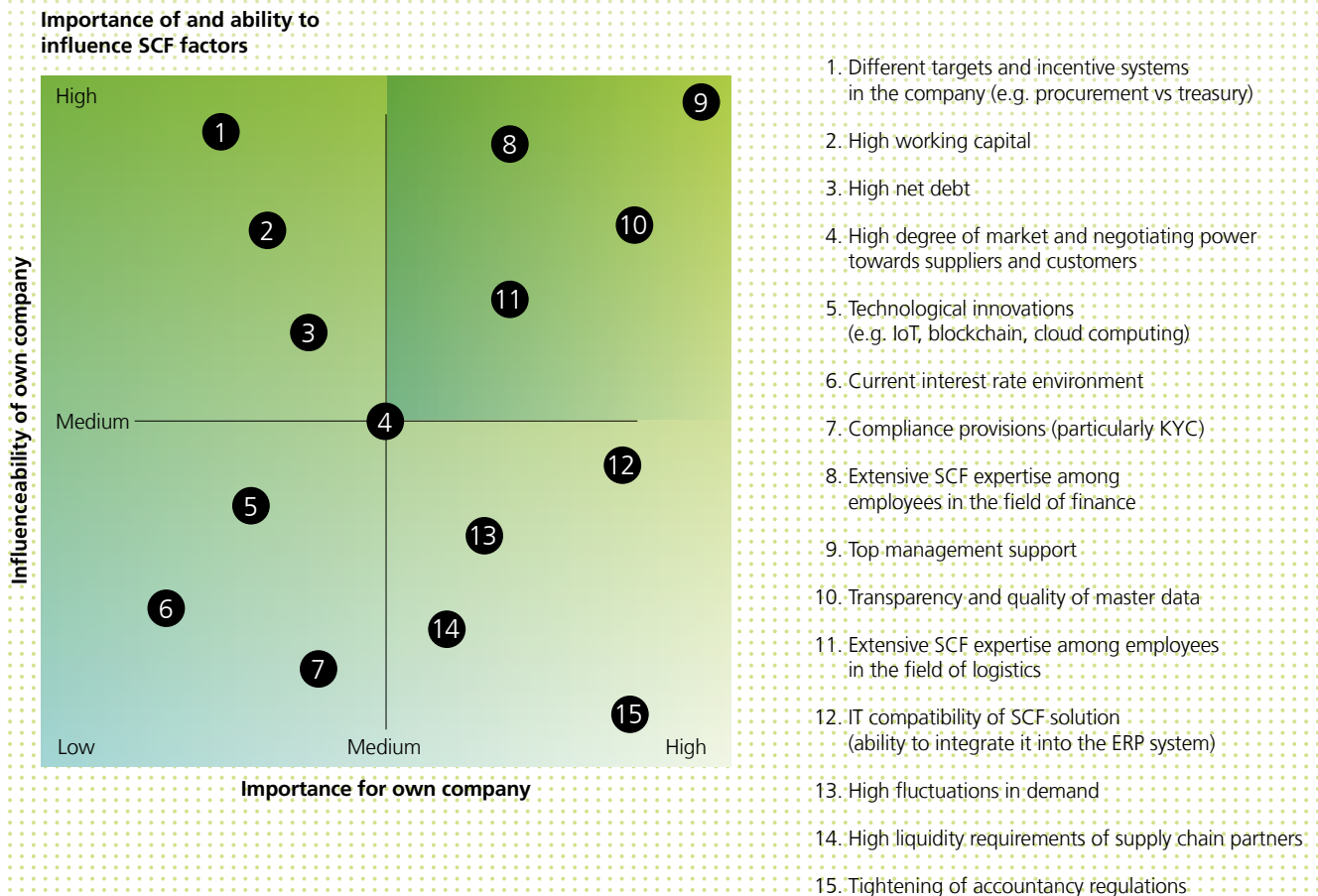
Estimation of the potential of SCF in the four WCM areas



Top management support is the most significant factor for SCF within the company

Swiss finance managers identify enabling and inhibiting factors in the successful integration of SCF at their own company. It is interesting to note that those surveyed attributed a high degree of importance to factors which can be influenced by their own company. Examples of this are the top management support, the quality of the master data and the SCF expertise of employees in the areas of finance and logistics. These factors are not just deemed success factors but can also be controlled by their own company to a large degree.

By contrast, significant factors were also identified which can be influenced by their own company to only a small extent. These include high fluctuations in demand and the tightening of accounting regulations.



Case study – Nestlé

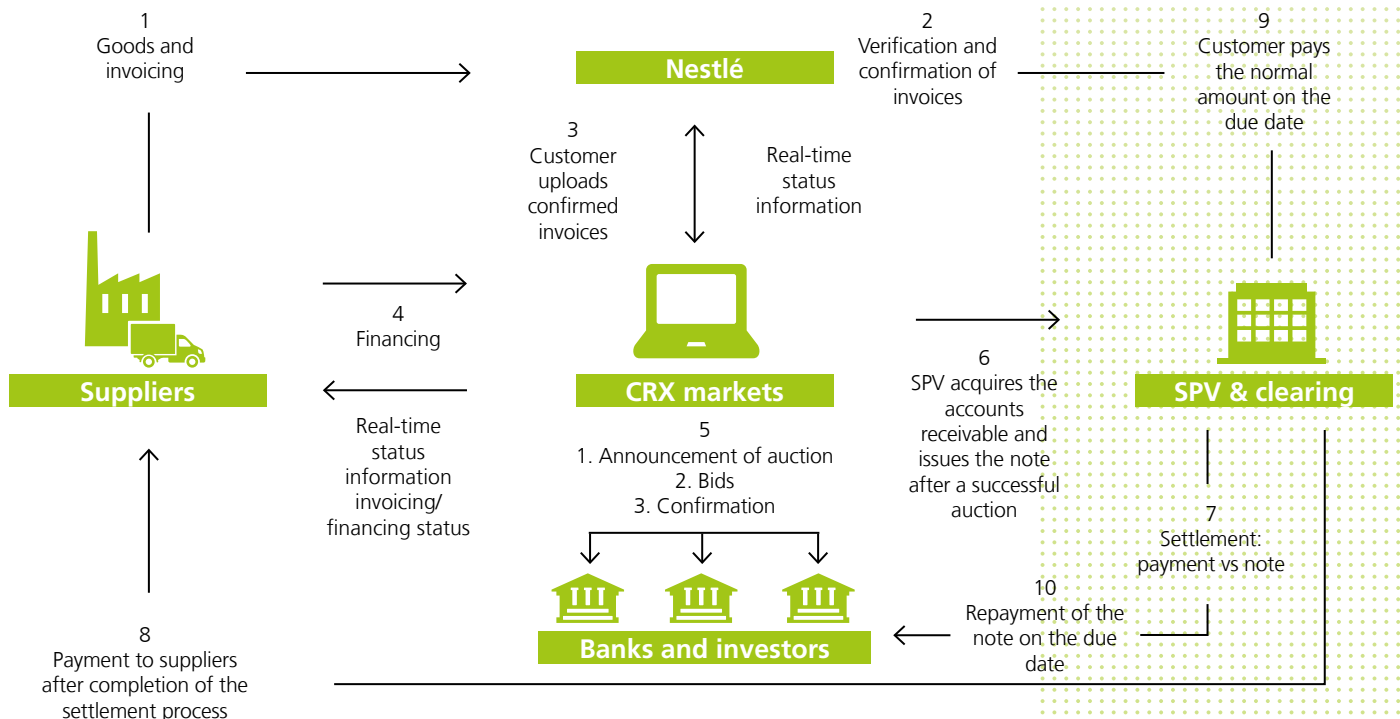
Flexible, automated and transparent supplier financing...

The challenge

Complex supply chain structures at international large corporations require efficient and agile supplier management. In this respect, Nestlé faced the challenge of centralizing its procurement functions in the global markets and ensuring the financial stability of its strategic suppliers.

The solution

CRX's SCF platform solution provided Nestlé with an integrated approach which offers a homogeneous, flexible and easily scalable financing solution for various supplier groups. The straight-forward and seamless integration of the CRX solution into Nestlé's ERP system (via add-on) meant that existing procurement processes could largely be retained and downstream processes significantly improved. Financing is organized via an auction platform on which the selected partner banks and professional investors can bid for supplier accounts receivable confirmed by Nestlé in the form of securities. CRX thus provides Nestlé and its suppliers with several ways of accessing attractive working capital financing.



...with simultaneous improvement of working capital

Main advantages

Transparent price structure thanks to auction principle

Lean ERP integration thanks to innovative add-on

Attractive financing thanks to recourse to the customer's credit standing (Nestlé-AA)

Optimization of WCM thanks to modification of payment terms and use of an innovative financing solution



Purchaser



Add-on



CRX markets

Functionality of ERP integration (via add-on)

- No change to the existing purchase-to-pay process
- No SWIFT requirement
- No additional bank accounts required

- Add-on automatically transports invoice details and status reports between the ERP system and the CRX portal
- Accounting processes remain unaffected

- Conditions and limits for suppliers are administered in the CRX portal
- The highest standards of data security and protection, complete audit trail, ISO 27001 and BaFin audit

Nestlé is the world's largest food and beverage company and Switzerland's largest industrial company. Nestlé is ranked 66th in the Fortune Global 500 List, posted turnover of CHF 89.8 billion in 2017 and has 323,000 employees worldwide.

Case study – chemical producer

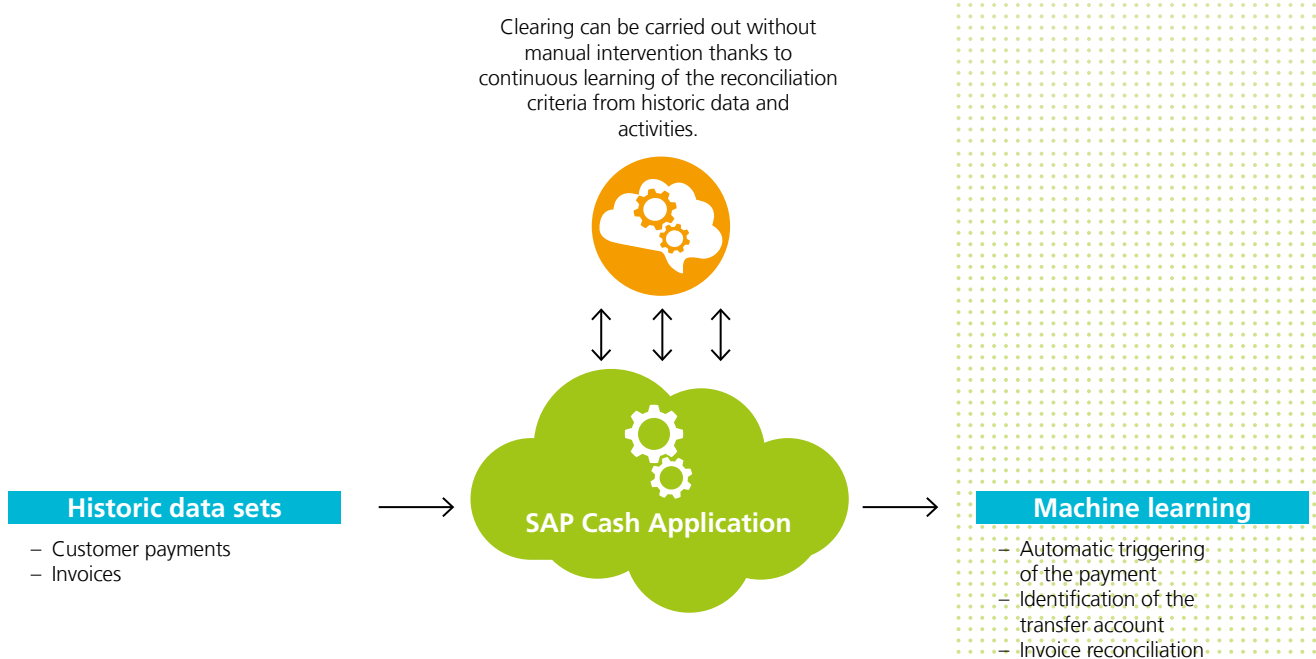
Accelerated and intelligent accounts receivable reconciliation...

The challenge

Due to increasing cost pressure, the globally operative chemical producer was forced to streamline and automate labour-intensive manual tasks, such as reconciling customer payments with outstanding accounts receivable.

The solution

Through the introduction of the “SAP Cash Application” software, the chemical producer was able to fully automate the process of reconciling incoming payments with outstanding accounts receivable and to permanently reduce operating costs. The software is based on machine learning technology and automatically assigns incoming payments to outstanding accounts receivable based on historic clearing data. In addition to detailed customer- and country-specific data, historic data on payments and invoices is also processed and evaluated as part of the reconciliation process.



...thanks to the efficiency of machine learning

Main advantages

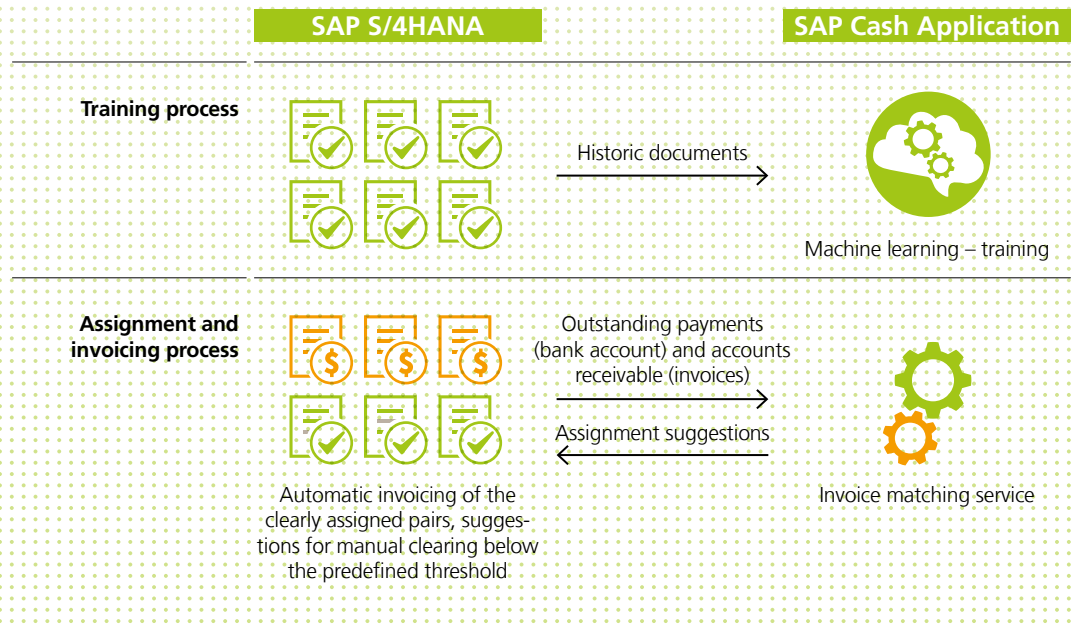
DSO reduction thanks to improved reconciliation of incoming payments and outstanding invoices

Lower operating costs thanks to the efficiency of machine learning

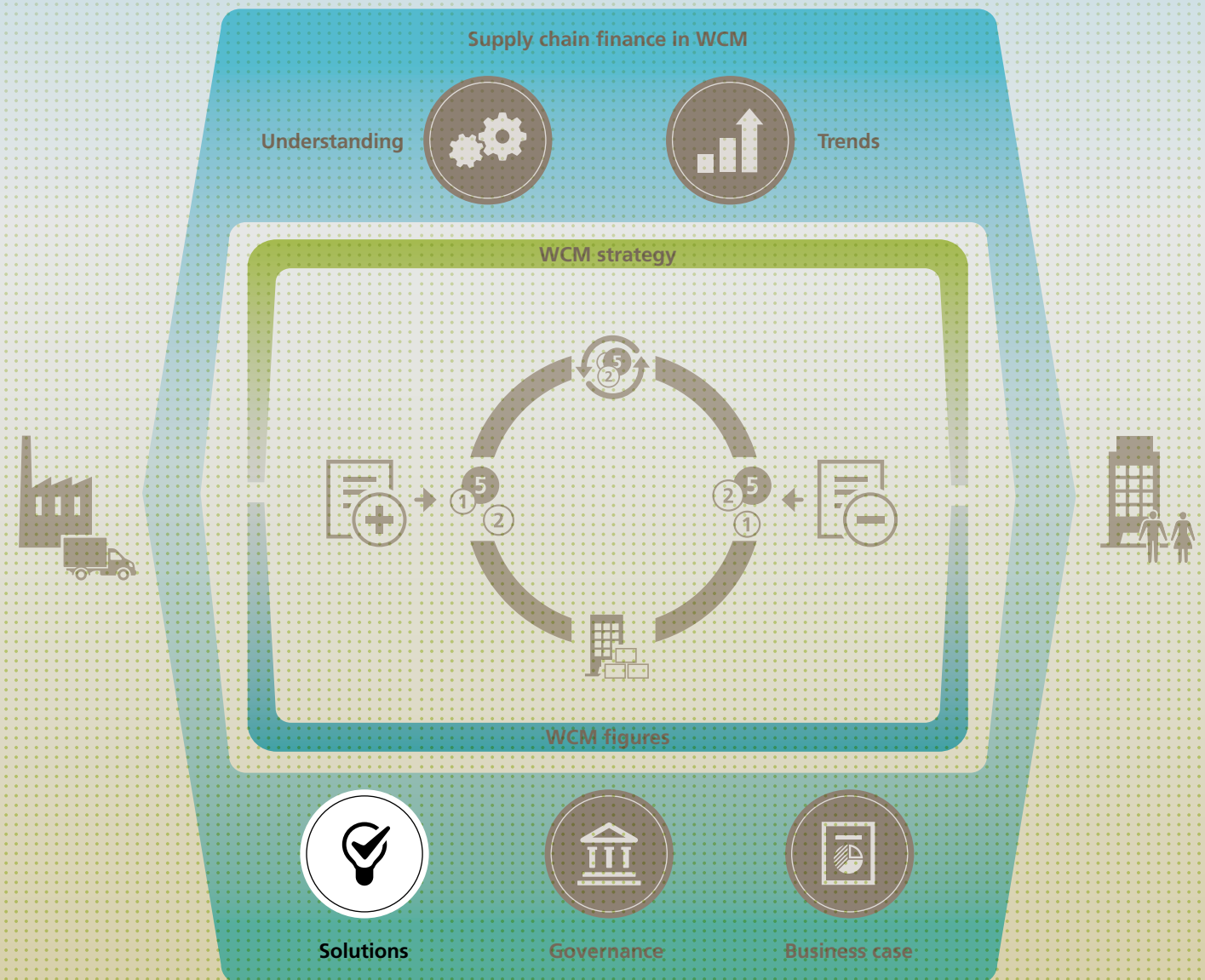
Focus on core activities thanks to minimization of manual interventions

Improved scalability of shared services thanks to modular solution structure

The SAP Cash Application in detail



SCF solutions

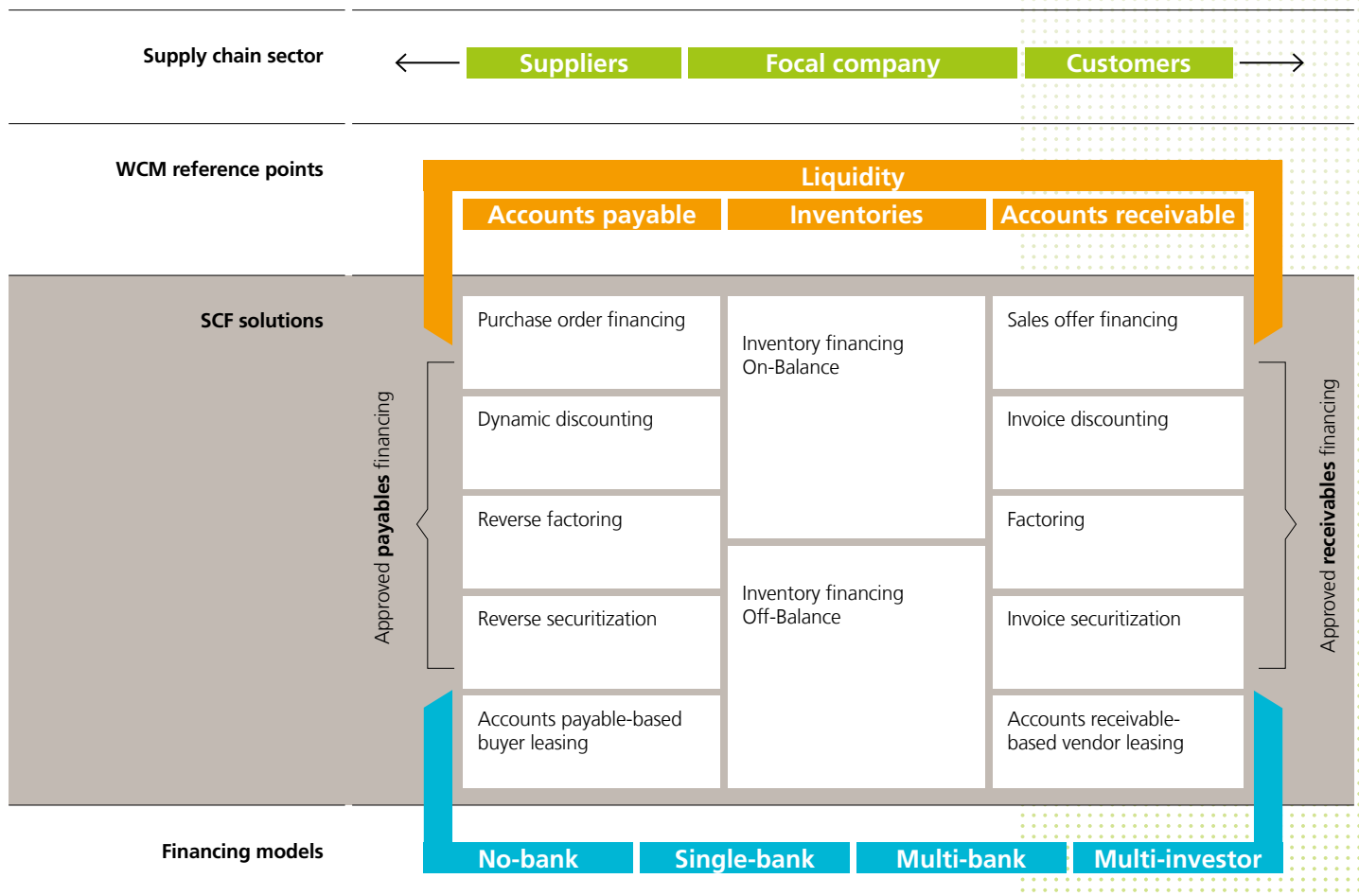


A wide array of SCF solutions is available to companies

Thanks to a wide array of SCF solutions, companies have many new options for managing their net working capital along the supply chain. There is already a range of technologically advanced SCF solutions available on the market for the WCM reference points of accounts payable and receivable. Accordingly, each company must assess the potential for improvement offered by a particular SCF solution. This also applies to individual supplier and customer groups. The underlying financial models need to be examined closely and adapted to any specific needs. For example, the “no-bank” model would be suitable for companies with an appropriate liquidity buffer. Alternatively, the “multi-investor model” is well-suited to companies that are aiming to enlarge their financing basis.

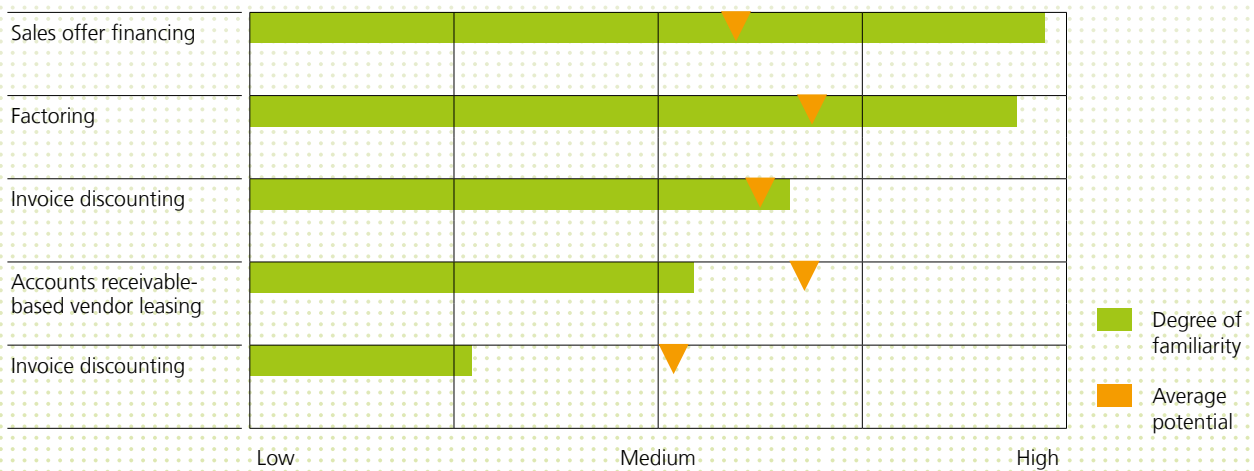
SCF solutions for inventories are currently not as well developed. The survey shows, however, that inventory financing solutions offer the most innovative potential for Swiss companies. Off-balance approaches in particular – which balance working capital connected to inventories at a financial or logistics service provider – were regarded by those surveyed as having big potential for improving their WCM.

Selected SCF solutions from the perspective of a focal company



SCF solutions in accounts receivable are considered to have mid- to high-level potential

SCF solutions for accounts receivable: degree of familiarity and estimated potential



The results of the survey show that SCF solutions for accounts receivable are generally relatively well-known. Sales offer financing and factoring solutions in which one or more receivables are sold to a financial service provider are particularly well known. Less known among those surveyed is invoice securitization, where accounts receivable are bundled and converted into short-term securities and offered to a broad base of investors on the capital market via a special purpose vehicle (SPV).

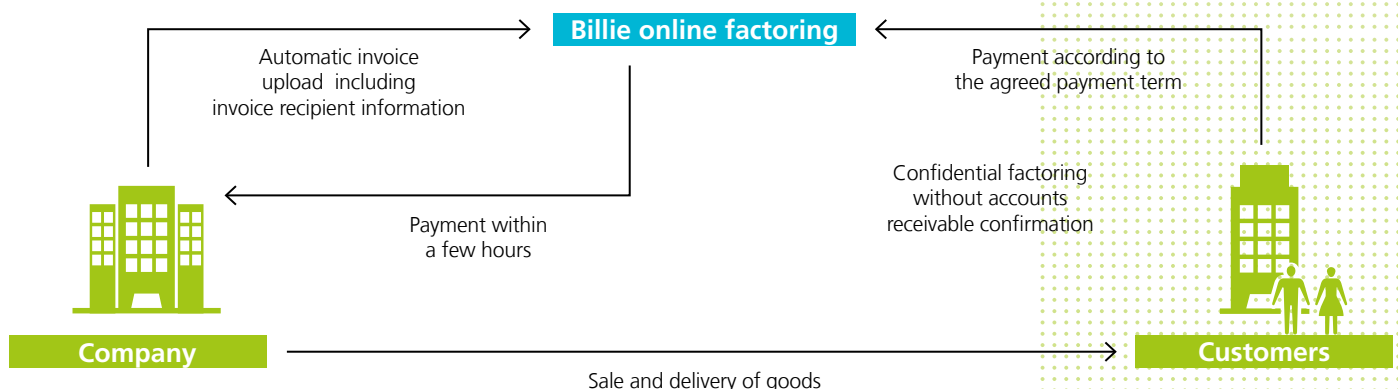
The study participants rated the potential of all SCF solutions for accounts receivable as medium to high. This assessment can be attributed firstly to the high level of discrepancy between the actual and agreed upon payment terms at Swiss companies. Secondly, SCF solutions offer the sales side the option of outsourcing time-consuming payment collection processes and reducing credit risk. In particular, small and mid-sized companies that have difficulty finding the resources for effective accounts receivable management could stand to benefit from enormous increases in efficiency.

Case study – Billie**Billie-Kreditlinie 4.0 generates liquidity at the push of a button...****The challenge**

Nearly half of all B2B invoices are paid around three weeks late, even by solvent companies. This hits SMEs with limited access to financing particularly hard. Unpaid invoices not only add to their administrative load, but also put the company in danger of liquidity bottlenecks. Complicating the situation is the fact that traditional financing services from banks are generally not geared towards the short-term liquidity needs of SMEs.

The solution

The solution offered by Billie is notable for its speed and simplicity. It combines the most useful components of existing factoring solutions. In practice, the recipient of the invoice will not be informed that their receivables have been assigned and will not need to provide confirmation (confidential factoring). The process is highly digitized and offers access to financing in just seven minutes. In contrast to traditional factoring, the time-consuming task of submitting documents is no longer necessary.



Billie is an online factoring company headquartered in Berlin. As a fintech company, Billie offers a fully digital factoring solution for companies thanks to modern rating technology.

...and reduces application time to seven minutes

Main advantages

Flexible financing thanks to a reduced application process of just seven minutes

Reduction of complexity thanks to immediate payment of the invoice amount

High level of confidentiality thanks to BaFin licencing and confidential factoring

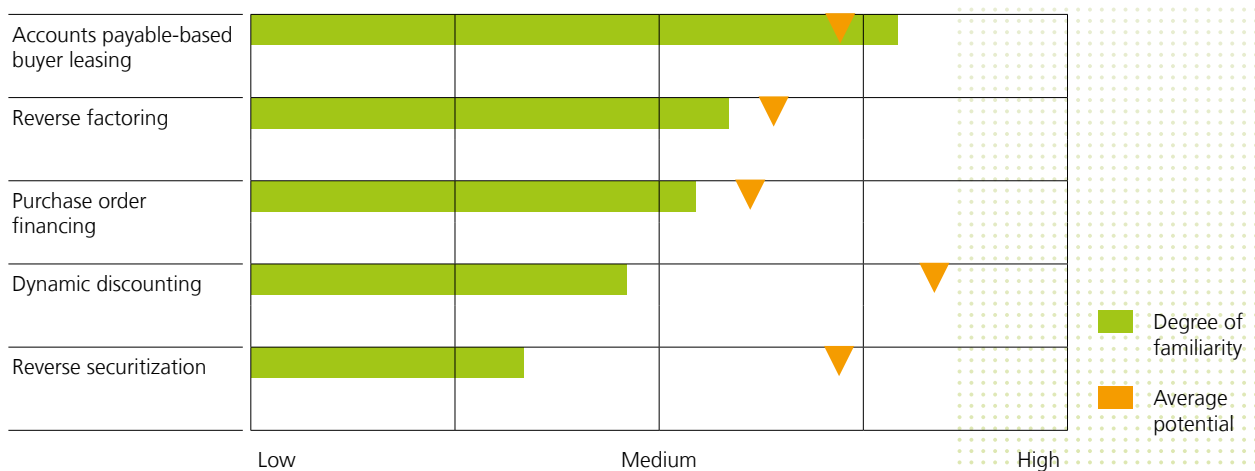
Reduction of administrative effort thanks to removal of contract and minimum turnover requirements

What sets Billie apart from the competition

	Billie	Traditional factoring provider
Confidential factoring	✓	✓
Payment within just a few hours	✓	✓
Factoring for individual invoices	✓	✗
Immediate onboarding	✓	✗
No minimum contract term	✓	✗
No minimum factoring volume	✓	✓
Paperless contracts	✓	✗
100% online (no paper documents, no on-site due diligence)	✓	✗
Fully automated invoice upload via a digital interface	✓	✗

In accounts payable, lesser-known SCF solutions are considered to have the highest potential

SCF solutions for accounts payable: degree of familiarity and estimated potential



Study participants were on average less familiar with the solutions for accounts payable, and their practical application appears to show room for improvement. Companies both large and small have yet to take full advantage of the procurement benefits offered by SCF programmes.

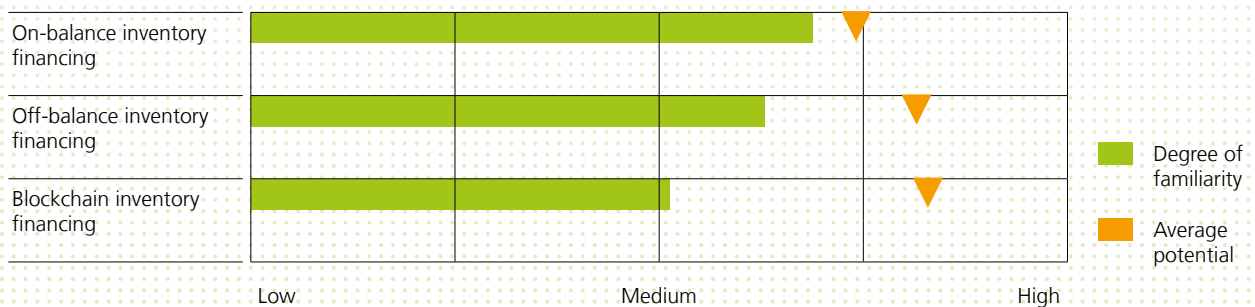
The results of the study are surprising, as an analysis of the key indicators shows that Swiss companies are significantly behind their European neighbours when it comes to accounts payable management. Only accounts payable-based buyer leasing was better known and actively used.

It is notable that the lesser-known SCF solutions were seen as having the most potential. Respondents regarded dynamic discounting in particular as a source of high potential. This was due to the fact that dynamic discounting enables procuring companies to offer their suppliers dynamic payment methods – and thereby flexible pre-financing – via an SCF platform.

All in all, the potential of SCF solutions in accounts payable is estimated to be high. There are only very minor differences between the level of potential seen for individual SCF solutions.

SCF solutions for inventories are considered to have the highest potential

SCF solutions for inventories: degree of familiarity and estimated potential



Despite enjoying just a medium degree of familiarity among those surveyed, SCF solutions for inventories were seen as having an above average level of potential compared to other areas of WCM. The reason for this, according to participants in the study, is that improvements in inventory management are felt in a comparatively high number of different areas.

For example, implementing off-balance financing leads not only to a reduction in the size of the balance sheet and capital commitment costs, but also to an increase in operating efficiency thanks to outsourcing of logistics processes.

Compared to accounts payable and receivable, SCF solutions for financing inventories generally penetrate deeper into the operative processes of a company. However, many Swiss companies are not willing to adapt their inventory management processes and underlying infrastructure and instead cling to a still prevalent silo mentality. The finance professionals surveyed therefore see this deeper penetration as a challenge that could meet with resistance within the company. With regard to off-balance inventory financing, legal aspects (e.g. substance over form) are also seen as a particular challenge. However, this had only a limited impact on how the potential was evaluated.

Case study – Marco Polo

Flexible trade financing between global companies and leading financial institutions...

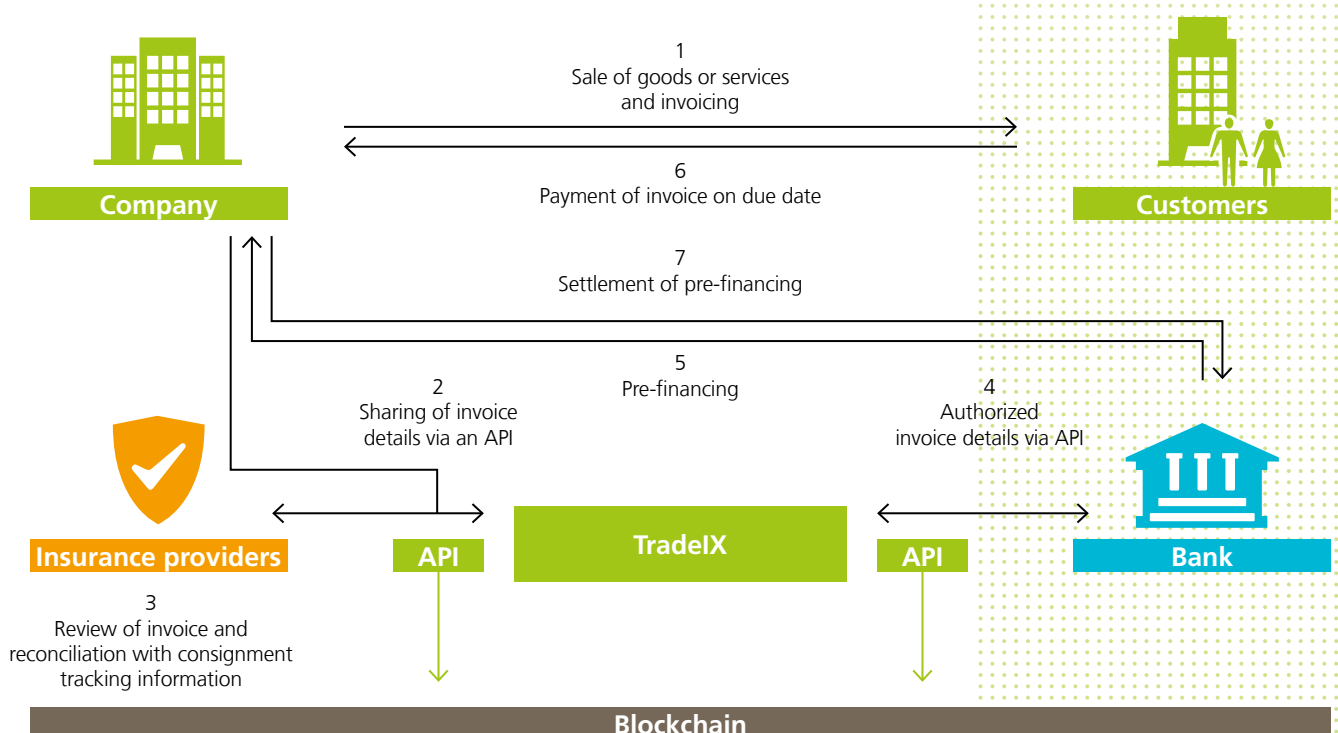
The challenge

The finance and IT systems that support the financing of global trade (keyword: letter of credit) are out of date and involve many manual tasks. This generates significant costs, risks and frictional losses for all parties concerned. Inefficient IT systems set technical limitations on trade financing solutions, lead to a poor customer experience and limit the possibilities for financing capital tied up in trade.

The **Marco Polo Consortium** is a trade financing network comprised of more than a dozen leading banks, as well as software and technology companies. The platform that it has developed is setting new standards and is based on blockchain technology.

The solution

The goal of the Marco Polo initiative is to better meet the needs of commercial customers by combining physical, informative and financial supply chain flows with the optimized use of digital commercial data. Thanks to its increased level of transparency, the blockchain-based trading platform allows for easy and flexible access to financing for all parties involved in global commerce. At the same time, the risk level and the number of manually performed tasks are reduced, thereby increasing operative efficiency.



...thanks to blockchain-based, real-time connectivity
between all partners

Main advantages

Increased transparency and security thanks to cooperation within a global ecosystem

Efficiency improvement thanks to reduction in operating risk

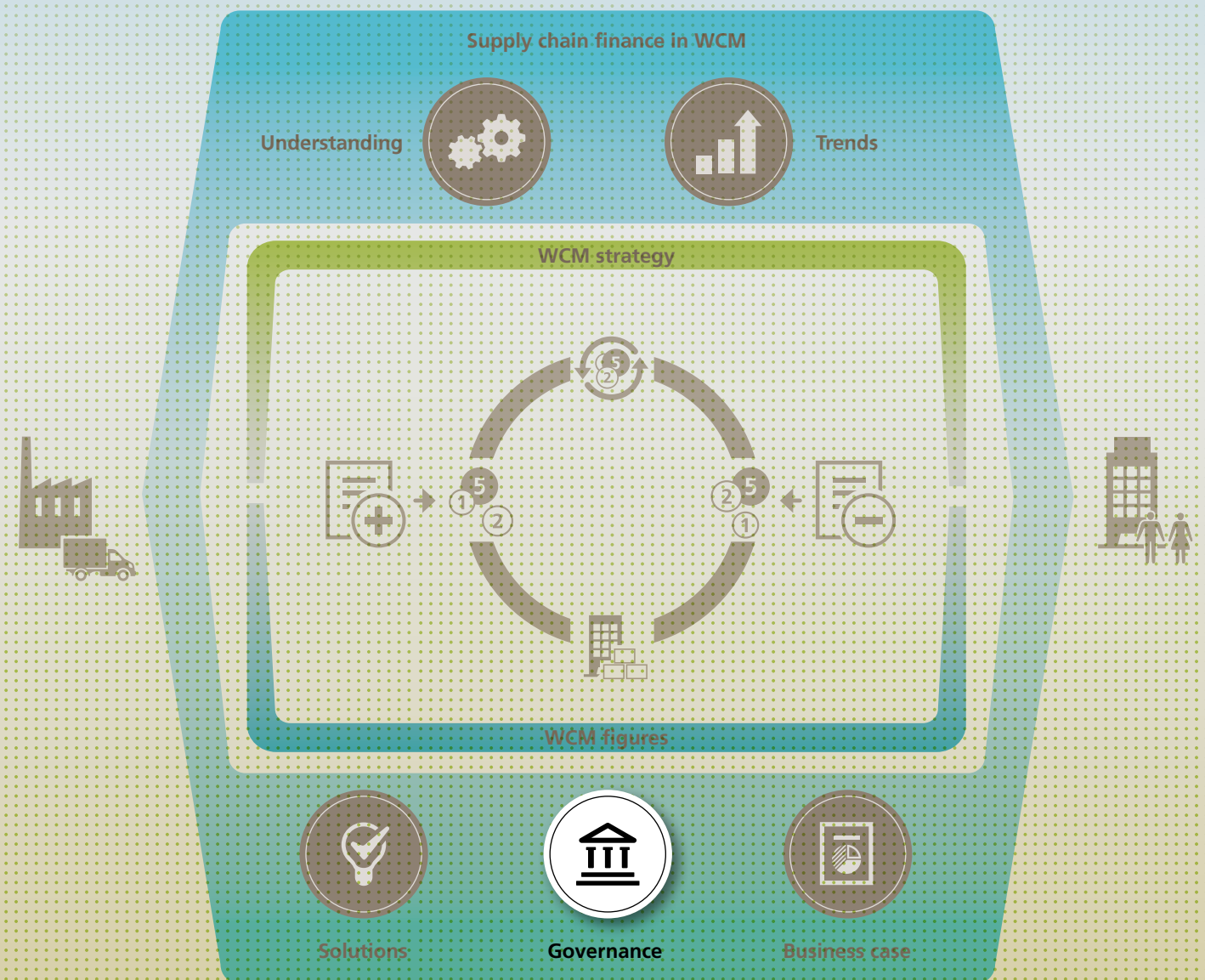
Integration of external and internal systems thanks to intelligent interfaces

Access to flexible financing thanks to different financing options

What differentiates the blockchain-based platform from traditional platforms

Activity	Traditional trading platform	Blockchain-based trading platform
Data storage	Centralized	Decentralized
Documentation	A large amount of documents need to be managed	Only one document is managed and reconciled
Integration of third parties	Complex and time-consuming	Efficient integration of multiple parties (e.g. banks)
Transaction costs	Relatively high	Low
Data integrity and security	Moderate	Very high thanks to cryptography
Confirmation type	Manual	Automatic, triggered by smart contracts

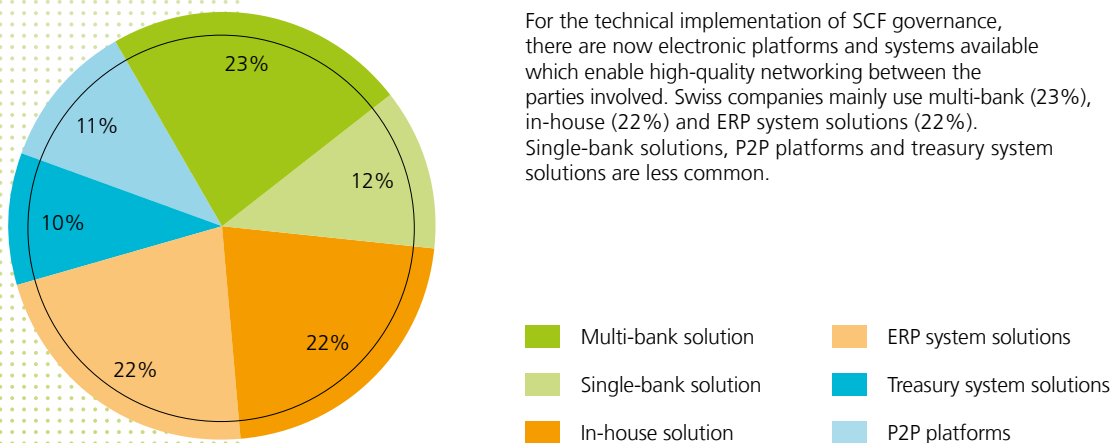
SCF governance



Swiss companies use various platforms to manage their SCF programme

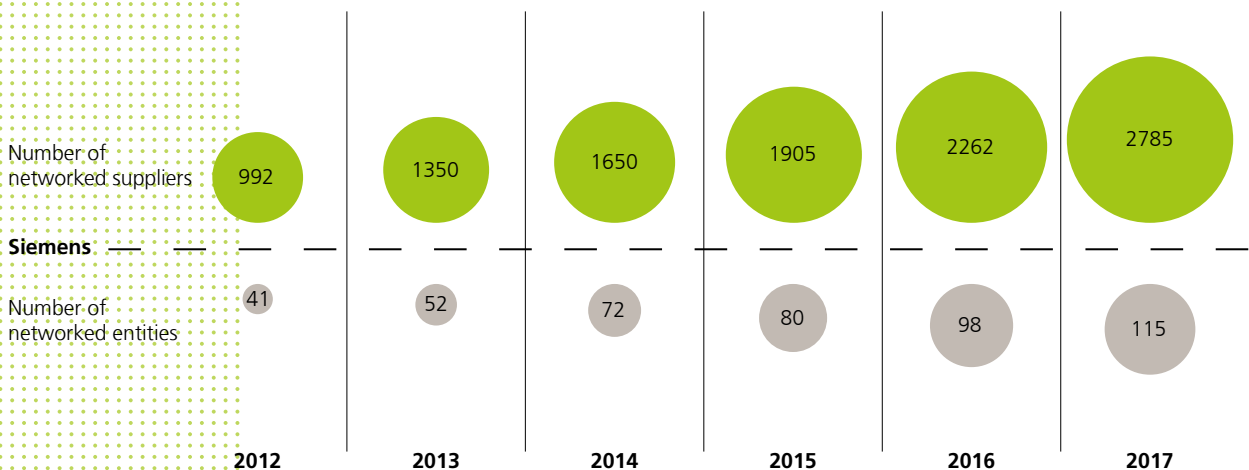
SCF governance broadly describes the organizational framework for the company-wide management and monitoring of an SCF programme. Effective SCF governance is of major importance because it assigns responsibilities, defuses conflicting goals and defines the nature of cooperation between the parties involved.

SCF platforms used



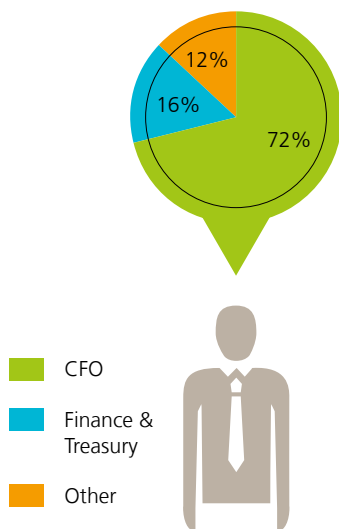
The relevance of an effective SCF governance structure is illustrated by the example of Siemens. The SCF programme initiated in 2012 is based on a multi-bank solution and by the end of 2017 had been rolled out at 115 subsidiaries and 2,785 suppliers worldwide.

Numerical data for Siemens' SCF programme



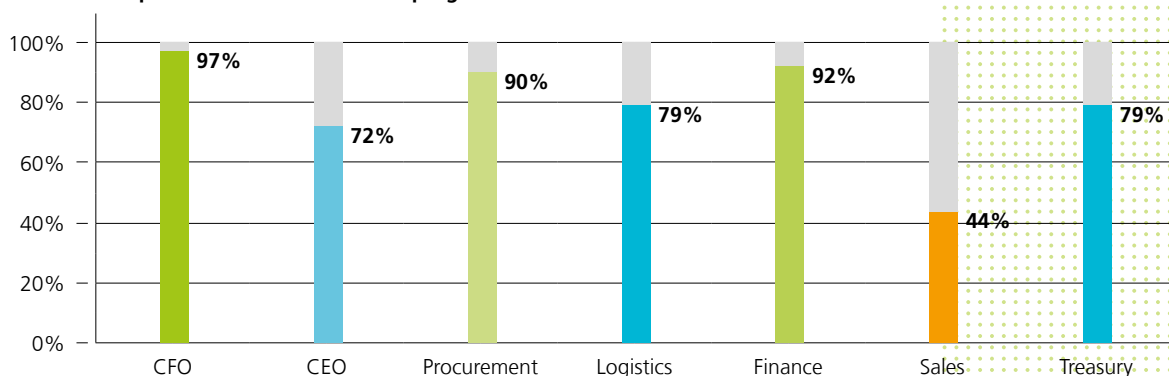
Supply chain finance is the responsibility of the CFO and many other parties

Responsibility for the SCF programme



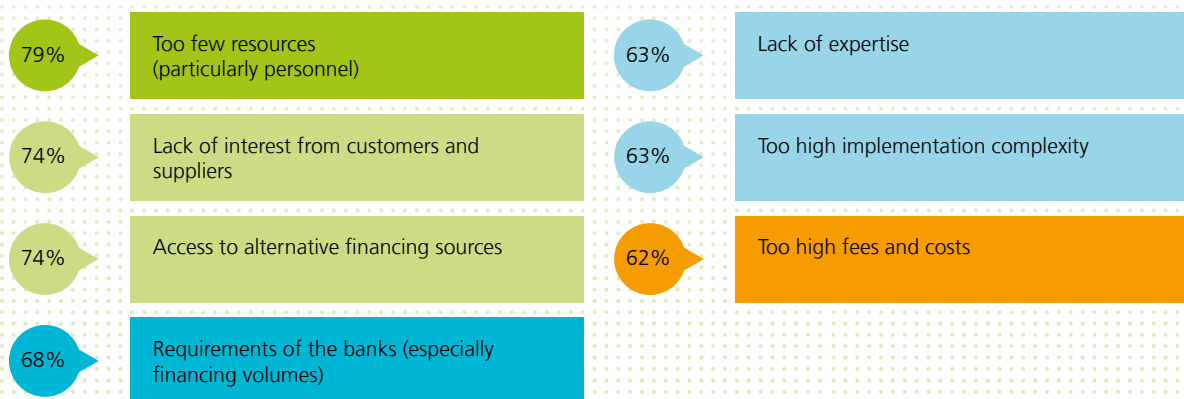
SCF is regarded as a clear matter for CFOs. 72% of the study participants indicated that their company's CFO is responsible for managing and reporting on the SCF programme. A minority believe primary responsibility lies with the treasury and finance department. However, respondents also said it was difficult to assign clear responsibility to one person. This is because the duties, decision-making authority and scope of responsibility of SCF participants are often not clearly defined. There is not yet a "Chief SCF Officer" or "Chief Working Capital Manager" at most companies. These views correlate with the results of the analysis on the parties involved in SCF. Over 90% of the companies surveyed indicated that their logistics and procurement units are key players in their SCF programmes. Sales is less relevant at 44%. One of the reasons for this is the relatively low use of factoring in Switzerland. In summary, the results show that several functional units are involved in SCF programmes at Swiss companies, depending on the chosen SCF solution. SCF programmes should therefore be managed by cross-functional teams under the control of the CFO.

The parties involved in the SCF programme



A lack of resources is the biggest obstacle for SCF programmes

SCF obstacles from the company's perspective



Reluctant companies indicate a wide range of reasons why they have decided against setting up their own SCF programme thus far. Small and medium-sized enterprises in particular complain that, in comparison with larger companies, they lack the resources required to undertake SCF projects. 74% of the Swiss companies surveyed also pointed to a lack of interest from customers and suppliers and indicated that they already had sufficient access to alternative financing sources.

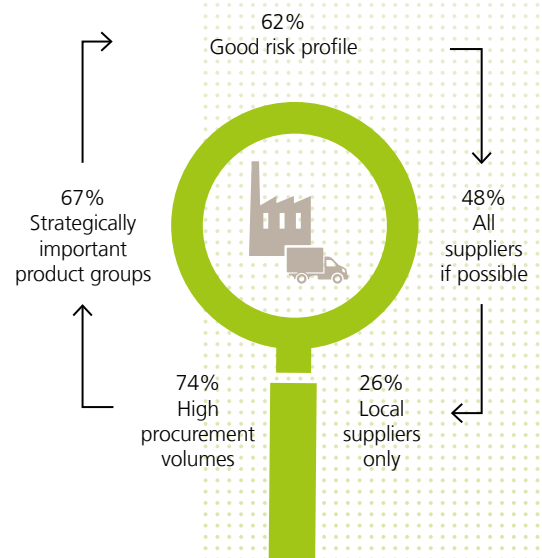
Reluctance to use SCF solutions was apparent at companies with smaller order volumes and average to high financing complexity. 68% of the companies surveyed indicated that they could not meet the demanding requirements of financial service providers with regard to transaction volumes, annual turnover or evidence of creditworthiness.

63% of those surveyed also believe that there is inadequate SCF expertise in their company, while 62% said charges and costs were too high.

A proactive and clearly structured supplier onboarding process is mandatory for...

Leading Swiss companies which have already implemented a reverse factoring solution agree that supplier onboarding presents major challenges. Survey respondents indicated that successful implementation was ultimately dependent on suppliers' willingness to make active use of the solution and the corresponding SCF platform. This is why it is important to adopt a proactive approach to onboarding, to structure it clearly and to make the necessary process changes as easy as possible for suppliers. Eight key steps were identified at all companies surveyed.

Criteria for the selection of suppliers



1

Strategy definition

The study participants consider the development of a joint SCF strategy as the starting point for successful supplier onboarding. The key issue is which corporate objectives are to be achieved by the reverse factoring programme.

3

Selection of suppliers

Not all suppliers qualify for participation in a SCF programme. The survey reveals that Swiss companies mainly prefer suppliers with a high procurement volume (74%). Suppliers of strategically important product groups (67%) and those with a good risk profile (62%) are also prioritized.

2

In-house training

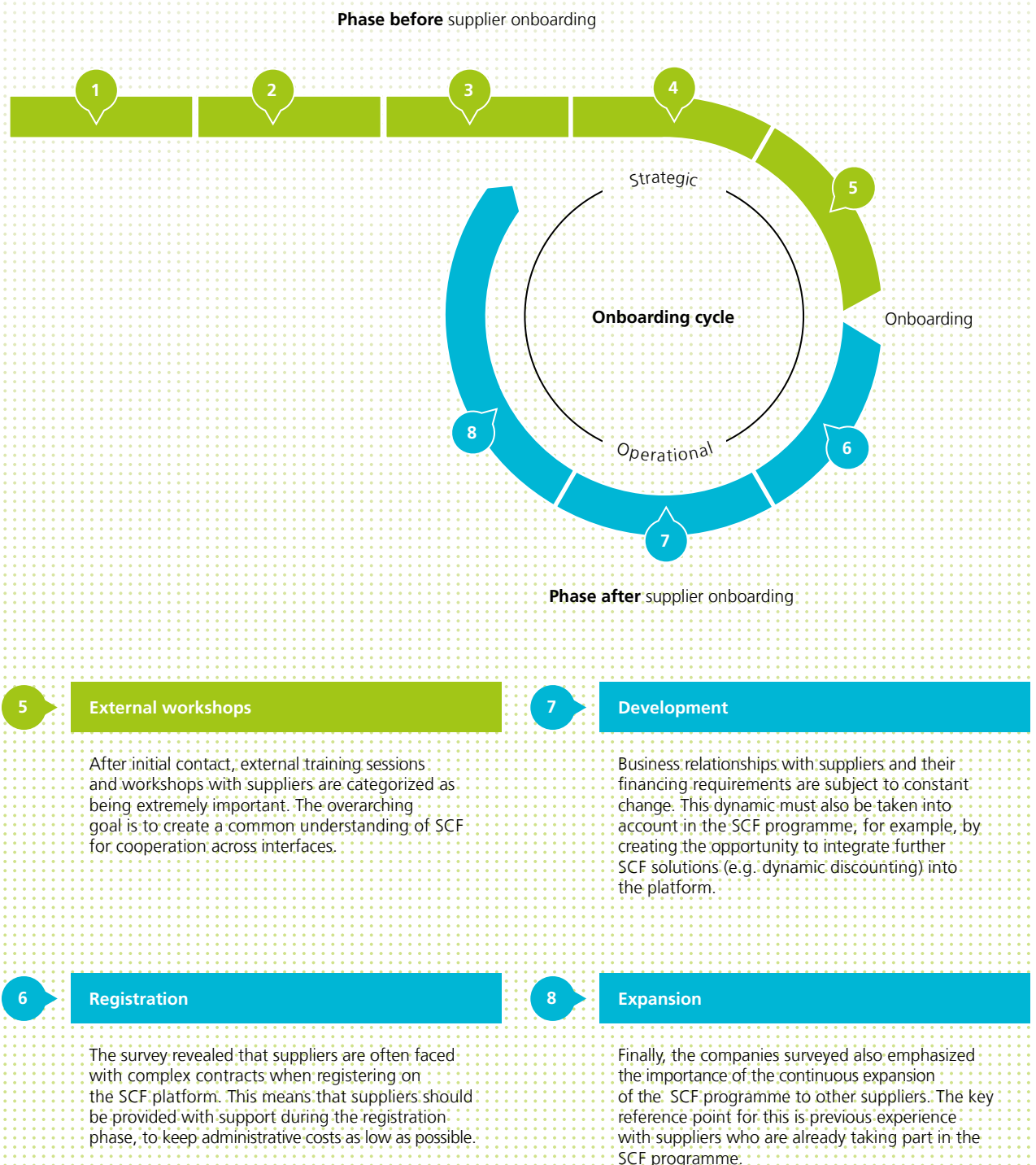
Over 90% of the study participants regard the procurement department as a key player in supplier onboarding as it is usually the main contact partner for suppliers. In light of this, it is vital that all relevant purchasers receive training at the very outset, to ensure they acquire the necessary finance and sales knowledge.

4

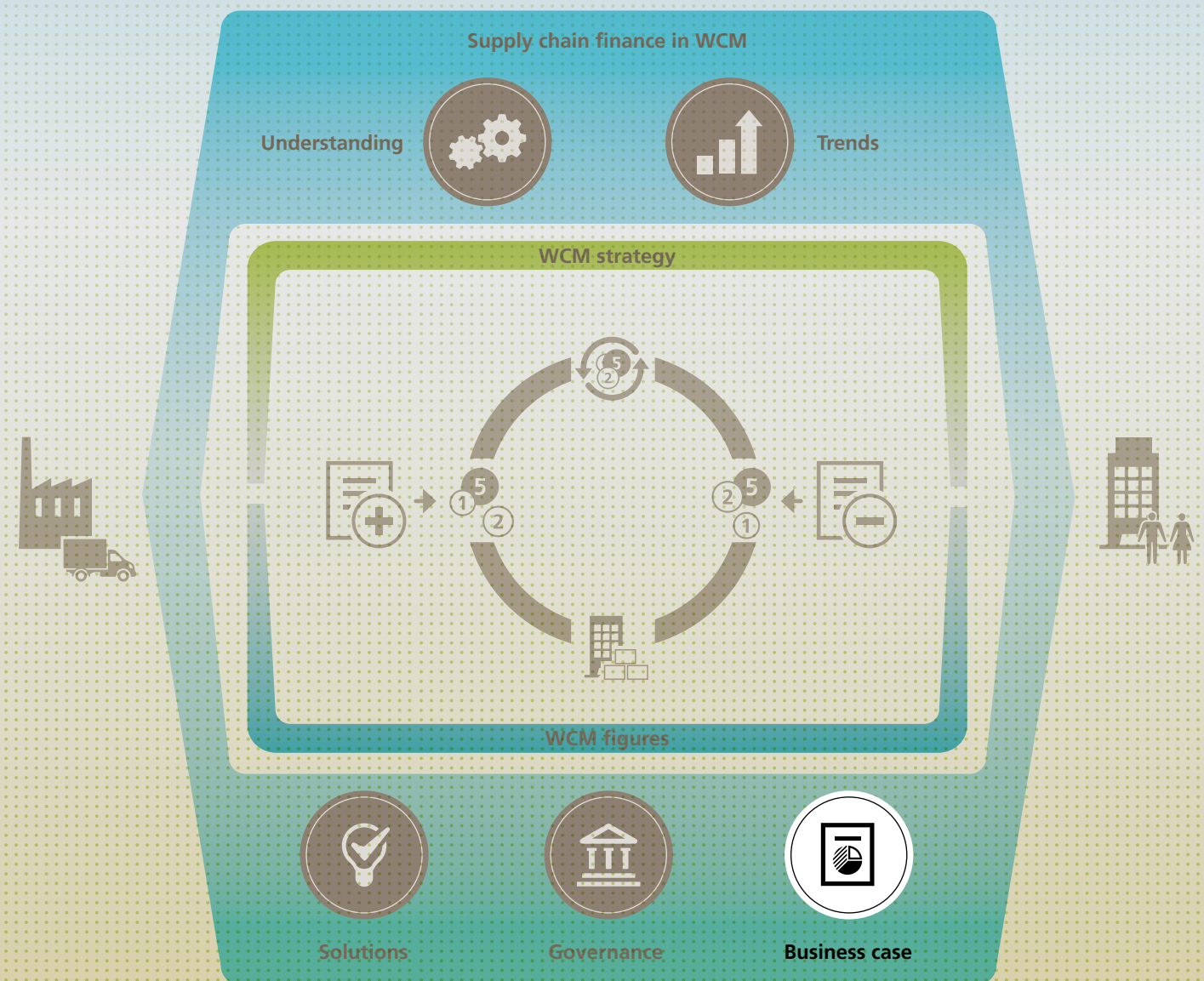
Initial contact

Swiss companies give high priority to the initial contact during which the SCF programme is announced. In specific terms, the emphasis should be placed on explaining the reasons for the introduction of the SCF programme, highlighting the benefits for suppliers and providing information on how the programme will proceed.

...the successful implementation of a reverse factoring solution



SCF business case



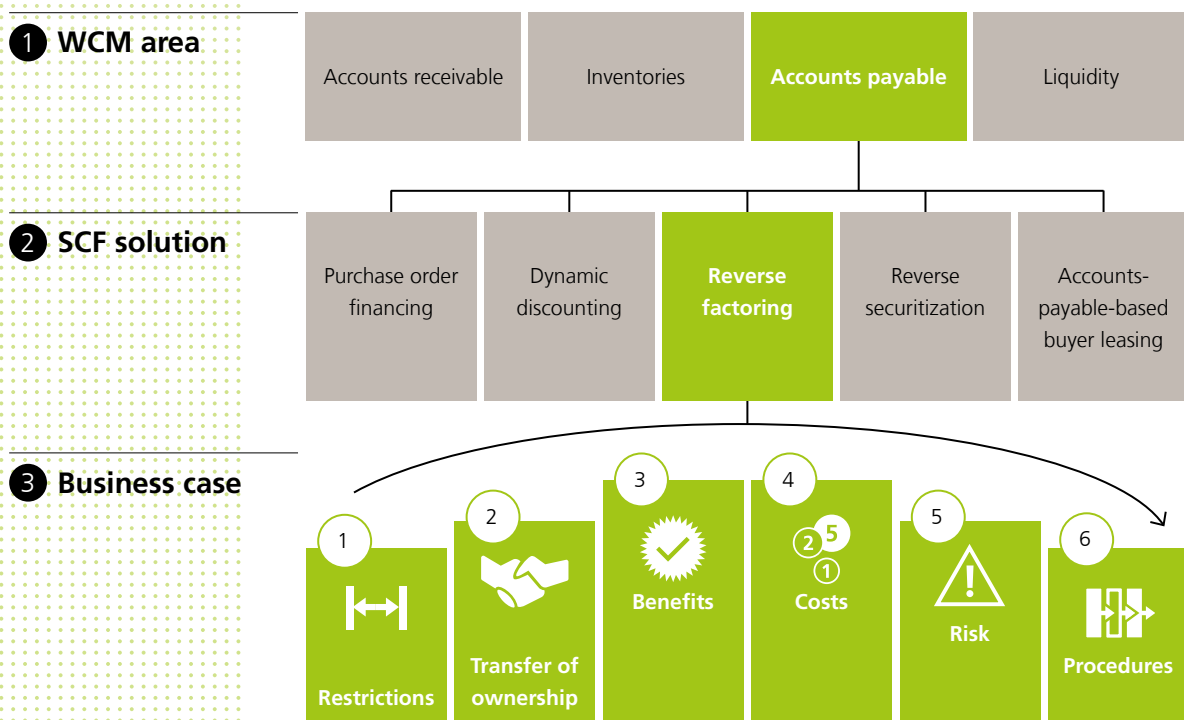
The reverse factoring business case consists of three steps

As a first step, the four reference points of accounts receivable, inventories, accounts payable and liquidity can be used by companies in supply chains to integrate SCF solutions into WCM.

After deciding which of these four WCM areas to focus on, the second step is to consider which SCF solution is most suitable for achieving the targeted objectives.

In the third step, the following questions then have to be addressed when deciding on the business case: what benefits can be produced through the implementation of the SCF solution and how high are the potential costs? What is the procedure, which risks exist and which restrictions must be taken into account? Which contractual provisions (e.g. transfer of ownership) have to be considered?

The following checklist summarizes the key aspects of a SCF business case using the example of a reverse factoring solution and provides guidance from the perspective of a purchasing company. A key issue here is costs and fees, as they are often not mentioned during discussions. This means the list is not exhaustive.



Not all supplier receivables are suitable for financing

1



Restrictions

Most providers of reverse factoring solutions define a series of preconditions for procuring companies that wish to pre-finance their suppliers' receivables. Common requirements include:

Purchasing volumes, frequency of transactions and relationship

- The procuring company must always have a particular annual procurement volume (a common lower limit is CHF 10 million)
- The supplier/customer relationship behind the accounts payable must not become the subject of a trade dispute

Financing and collateral

- The financing can only be used for transactions in certain currencies
- The reinsurability of the procuring company equal to the financing amount must be provided
- The suppliers' receivables must not be already pledged or assigned as collateral

2



Transfer
of ownership

Financing as part of a reverse factoring programme is paid out in return for financial assets (supplier's receivables), ensuring that the funds are repaid to the finance provider at a later date. It is therefore important to understand the legal aspects associated with this transfer. The most common types of ownership transfer in reverse factoring are the sale of accounts receivable, the assignment of receivables and the pledging of accounts receivable.

Types of ownership transfer in reverse factoring

Sale of accounts receivable	Assignment of receivables	Pledging of accounts receivable
Suppliers' accounts receivable are legally sold to the SCF finance provider, which then takes over the payment collection process.	The suppliers still retain ownership of the accounts receivable, but transfer them to the SCF finance provider.	The suppliers create a loan-based certificate for pledging the accounts receivable to the SCF finance provider.

With reverse factoring in particular, it must be established whether the supplier's accounts receivable relating to a procuring company have to be transferred to the SCF finance provider individually or together and whether the supplier has to sign a written declaration on the assignment of their receivables to the finance provider.

Reverse factoring creates significant added value

3

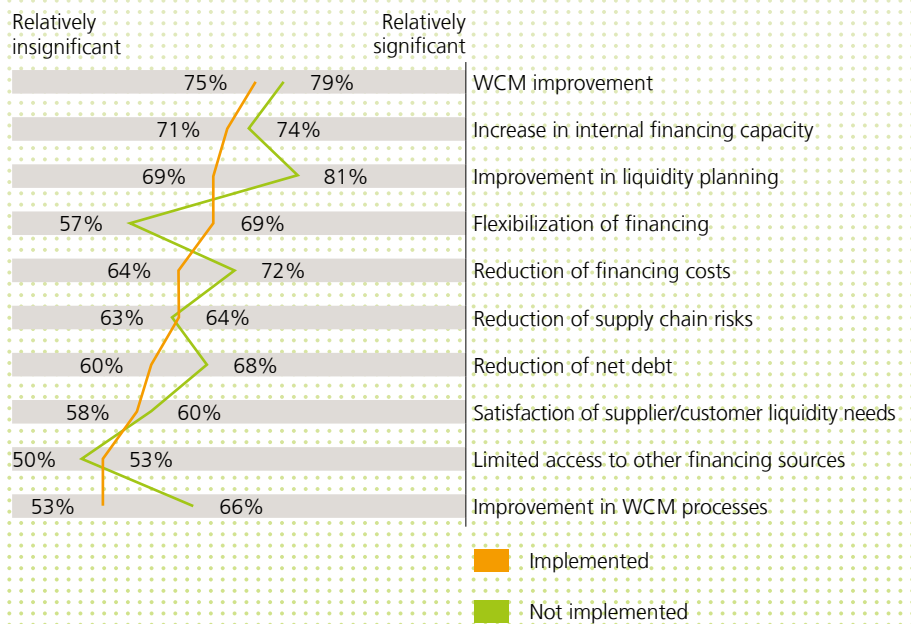
A reverse factoring solution has many benefits. Swiss companies regard the main benefits as the improvement of working capital (DPO extension), the strengthening of internal financing capacity, the improvement of liquidity planning and the reduction of financing costs.

For companies which have already implemented a reverse factoring solution, greater financing flexibility and the reduction of supply chain risks (particularly suppliers' risk of default) are also significant reasons.

For companies which have not yet implemented a reverse factoring solution, the main reasons are reduction of net debt and the improvement of WCM processes. In particular, these include the standardization of payment objectives and improved information links with suppliers.



Benefits



Implementation period



Swiss companies required an average of seven months for the implementation of their reverse factoring solution (downward trend)

Satisfaction



Almost all companies which have introduced a reverse factoring solution rate the programme as being successful

One-off and recurring costs are incurred over the life cycle of a reverse factoring programme

4

The implementation of a reverse factoring solution does not just produce benefits but also involves HR expense, charges and costs. Two types of costs are generally incurred for the purchasing company:

1

One-off costs

- 1. Implementation costs:** During the selection, introduction and integration of the chosen SCF solution into the existing ERP system, various costs are incurred for hardware, software, licences, process migrations and creditworthiness checks of the procuring company.
- 2. Training costs:** To ensure successful implementation, all in-house employees, particularly from the procurement and treasury departments, must be notified of the changes and receive appropriate training. The level of costs depends significantly on the number of entities required to receive training. Some providers include the training costs in the licence fee.

2

Recurring costs

- 1. Financing charges:** These are made up of the interest rate and the spread. The latter indicates the risk premium that the SCF finance provider receives as compensation for the financing risk assumed. The interest rate in Europe is generally based on Libor or Euribor, depending on the country in which the SCF solution was set up.
- 2. Staff costs:** Personnel expenses which are not always easy to define are incurred through the introduction of a reverse factoring programme. As well as the employees in the legal and finance departments, these also include staff from the procurement department who negotiate the contractual details with the suppliers and who are responsible for supplier onboarding.
- 3. IT operating costs:** Capital and operating costs are incurred for the operation of the SCF solution. The costs for IT services and support depend on the time required and should ideally be defined in specifications.
- 4. Consulting services:** Particularly in global reverse factoring programmes, operating costs are incurred for various services, such as the administration of the SCF solution in other countries, with a view to tax law and accounting.

2 5
1
Costs

There is no such thing as risk-free financing: this also applies to reverse factoring

5



Risk

The greater the financing risk involved in a reverse factoring programme, the higher the interest rate applied by a SCF finance provider for financing. The interest rate should reflect the risk diversification and risk of exposure for the SCF finance provider. There are generally four different options with regard to risk diversification:

A

Risk transfer to the supplier: The risk is completely transferred to the supplier. In the case of unsettled accounts receivable, this must cover the default (sale of accounts receivable with recourse).

B

Risk transfer to the financial service provider: if accounts receivable are not settled, the financial service provider is liable and assumes the default risk (sales of accounts receivable without recourse).

C

Transfer of risk to the purchaser: The risk is completely transferred to the procuring company.

D

Distribution of risks between the parties: The default risk is distributed between the parties involved.

Note: in the event of fraud or violation of the agreed obligations, recourse can usually be taken against the individual parties, irrespective of the transfer of risk originally chosen.

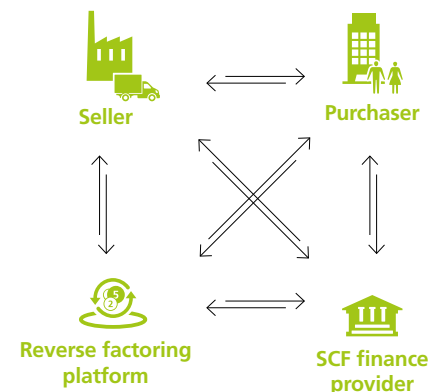
6



Procedures

Modern reverse factoring solutions are digitized, sector-specific and are introduced based on specific company characteristics. In particular, the following issues have to be addressed to ensure smooth process management:

- Do the suppliers have to carry out payment collection for the SCF finance provider?
- Is the SCF finance provider obliged to provide financing if certain defined conditions are met or not?
- Which SAP process migrations must be carried out?
- Can the original due date be changed to produce a consolidated due date for all invoices in a certain period?
- Can the payment terms or discount limits be changed by the SCF finance provider?
- When does the purchasing company confirm the supplier invoices?
- How much time does the SCF finance provider have to settle the supplier invoice (after receipt of the request from the supplier)?
- By when does the purchasing company have to repay the invoices to the SCF finance provider?
- How many currencies are available for the financing?



Annex



Key terms and explanations

- **Accounts payable-based buyer leasing** is a financing solution for reducing the investment-related capital commitment of purchasing companies. Accounts payable-based buyer leasing enables the usage-oriented provision of capital goods.
- **Accounts receivable-based vendor leasing** is a financing solution used in particular during the sale of capital goods. Accounts receivable-based vendor leasing enables companies to provide capital-intensive products in combination with a financing solution as a package and is usually provided in cooperation with a leasing company.
- **Advanced analytics** covers a wide range of research methods that enable companies to analyse data which cannot be evaluated using traditional data processing methods due to its complexity, dynamics and structure. These include methods such as big data, predictive analytics and data mining.
- **At-shipment financing** is an innovative financing solution that enables the financing of goods during transport based on a track and trace system. Real-time data is used to create real risk profiles for financial service providers and to make transport inventories accessible for external financing as early as possible in a supply chain.
- **Automation** in the narrow sense refers to systems able to perform tasks and resolve problems independently (autonomously). One of the aims of automation in the context of WCM is to reduce manual activities and processing.
- **Blockchain technology:** A blockchain is a decentralized database in which monetary units or securities can be managed. Blockchain technology is based on smart contracts which not only check individual contractual conditions but also implement them automatically. The technology thus enables faster and more cost-effective processing of transactions.
- **Blockchain-based inventory financing** refers to the financing of inventories within a supply chain using distributed-ledger technology and smart contracts. Compared to current inventory financing solutions, an extended portfolio of inventories can be financed (more cost-effectively) through increased transparency and data quality.
- **Cash pooling:** Liquidity balancing within the group using central finance management that removes excess liquidity from group companies or balances liquidity shortfalls through loans.
- **Cash-to-cash cycle (C2C cycle):** Compared to static analysis of working capital, the C2C cycle enables a dynamic view of WCM. A dynamic view means that the cycle between liquidity and outgoing and incoming payments is recorded. The C2C cycle also enables good external comparability through which potential savings can be determined compared against various internal and external benchmarks. The indicator is also clear, easy to understand and can be calculated from publicly accessible data sources without great expense. Because of different cost accounting practices at companies, sales instead of manufacturing costs are used to calculate DIH and DPO in this study. This change enables external comparability but results in a reduction in accuracy. As well as the strengths of the C2C cycle, its weaknesses must also be taken into account in the evaluation of the study analyses. A first point of criticism is that the approach is susceptible to “balance sheet manipulation”. The external comparability is at the expense of accuracy; for example, changes during the year are not adequately taken into account. Finally, it should be noted that the approach does not take account of the actual level and “quality” of the capital commitment.

- **Dynamic discounting** is an SCF solution where the purchasing company offers the supplier earlier payment of the invoice. In contrast to conventional discounting, dynamic discounting uses dynamic payment methods and is generally conducted via a dynamic SCF platform available on the market. If a supplier makes use of the early payment option, a dynamic discount applies. The earlier an invoice is settled, the higher the discount.
- **Factoring** refers to the commercial, revolving transfer of a company's accounts receivable to a financial service provider or a factoring company. Factoring as an SCF solution provides companies with an increase in liquidity while at the same time reducing financing costs and unpaid invoices. Genuine factoring occurs when a factor assumes the credit risk. If the risk of loan loss is not assumed, this is referred to as recourse factoring.
- **Financial hedging** is used to protect transactions against financial risks, such as price and exchange rate fluctuations.
- **Fintech (financial technology)** is a general term for technologically driven financial innovations and is often equated with companies that provide new kinds of financing instruments and services.
- **Holistic working capital management (WCM):** the business-oriented reduction of working capital (e.g. through the systematic extension of days payable outstanding (DPO)) can have a negative impact on relationships with customers and suppliers and result in liquidity bottlenecks. In view of this, holistic WCM takes account of the interests of the supply chain partners and aims to improve the integration of information and simultaneously reduce the capital tied up within a supply chain.
- **In-house bank:** This represents an important part of modern treasury management and aims to centralize risk management, group financing and payment transactions.
- **Invoice discounting:** In contrast to conventional factoring, invoices for accounts receivable are not sold to a factoring company with invoice discounting, but are instead used only as collateral for short-term financing (asset-based lending approach). The use of digital invoice discounting platforms provides companies with flexible access to liquidity while also reducing the risk for external financial service providers through increased transparency.
- **Invoice securitization** is an SCF solution where accounts receivable are sold. In contrast to conventional factoring, accounts receivable are bundled and converted into short-term securities and offered to a broad base of investors on the capital market via a special purpose vehicle (SPV). The payment default risk is generally assumed by the investors.
- **Level of maturity:** Companies' level of maturity is determined to identify best practice approaches and optimization potential. Recommended courses of action are provided by the average value of the best 10 companies (top 10) in a specific WCM field compared with the average value of the entire sample.
- **Off-balance inventory financing** refers to the financing of inventories where operational goods logistics and ownership are transferred to an external logistics service provider. This results in a reduction in costs due to lower storage and logistics costs and an increase in liquidity through a reduction in the capital tied up in inventories.
- **On-balance inventory financing** is an instrument for financing inventories. In contrast to the off-balance solution, the inventories remain on the purchasing company's balance sheet with the on-balance solution and serve only as a guarantee for a credit agreement (asset-based lending approach).

- **Preferred customer** is a long-term management strategy through which a purchasing company stands out from other competitors by providing exceptional products and services for suppliers (e.g. rapid settlement of invoices). Companies become preferred customers if they succeed in structuring the relationship between their procurement and the supplier's sales units better than their competitors.
- **Preferred supplier** refers to a long-term management strategy through which a supplier stands out from competitors through exceptional products and services (e.g. the provision of generous payment terms). Companies become preferred suppliers if they succeed in structuring the relationship between their sales and the procurement organization of the customer concerned better than their competitors.
- **Purchase order financing** is an SCF financing solution agreed between purchasing companies and suppliers to achieve financing at an early stage (at the time of the order).
- **Reverse factoring** is a conventional SCF solution which essentially enables a customer to obtain pre-financing of liabilities from their supplier. With reverse factoring, a factoring provider concludes a contract with the buyer of goods (purchasing company) in which it undertakes to pre-finance the liabilities of its suppliers. Key requirements that have to be met for the successful implementation of a reverse factoring solution are good creditworthiness of the purchasing company and the onboarding of suppliers onto an SCF platform.
- **Reverse securitization** is an SCF solution where, in contrast to traditional invoice securitization, the entire credit risk is concentrated in the initiating purchasing company. The assets to be financed are sold to a special purpose vehicle (SPV) at a discount and then sold to private and institutional investors on the capital market.
- **Return on capital employed (ROCE)** is an economic indicator which shows how efficiently a company uses the capital available to it.
- **Sales offer financing** refers to financing solutions that suppliers use to promote the sales of their products and to create financial flexibility for customers (e.g. through the use of payment by instalments).
- **Self-financing capacity:** This indicates the extent to which companies can make investments without having to rely on external financing sources.
- **Smart contracts** are blockchain-based computer protocols which enable customer and supplier contracts to be shown and verified digitally. As agreed provisions are set out digitally in smart contracts, they can be executed and implemented in a decentralized and autonomous manner.
- **Supply chain finance (SCF)** extends the perspective of WCM to the entire supply chain and addresses the company-wide optimization of financial structures and payment flows in company networks. The aim of SCF solutions is to create added value for all parties concerned by adopting a holistic approach to financial processes between suppliers, purchasing companies, and external financial and logistics service providers.
- **Working capital:** Various definitions of working capital exist in theory and practice. Working capital is essentially the capital required for business operations minus current liabilities. The latter is often equated with liabilities from supplies and services.

Methodology and background of the study

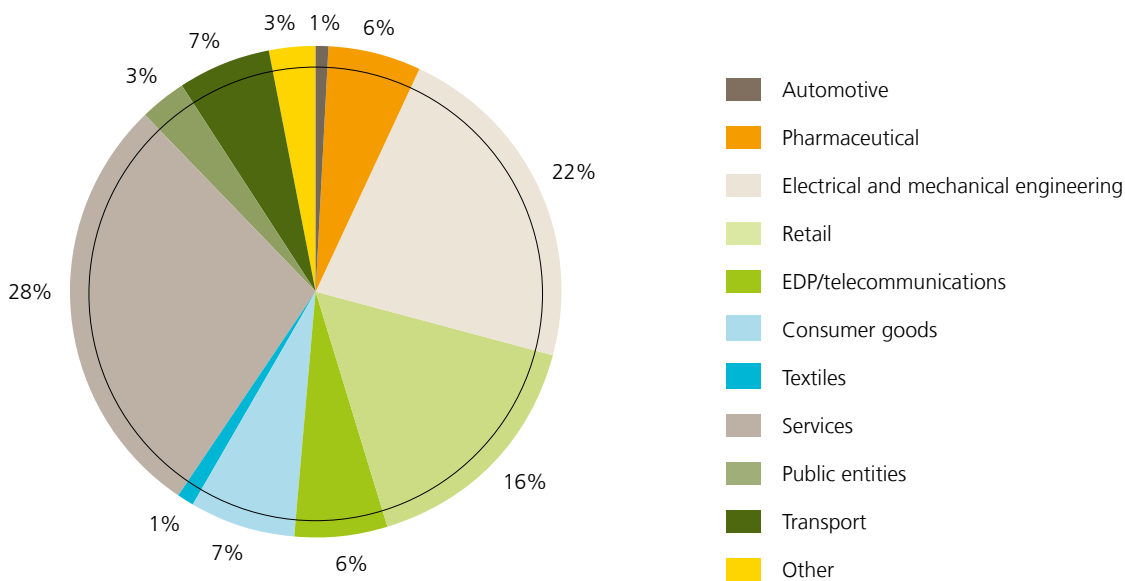
The starting point of the WCM Study 2018 was the supply chain-oriented analysis of WCM at Swiss companies and the focus topic of supply chain finance (SCF). It examines the following key issues:

- What impact does holistic WCM have on performance, and what are the implications for Swiss companies?
- What potential do individual SCF solutions have and to what extent do they contribute to managing changing WCM requirements?
- Which SCF solutions are particularly relevant to WCM at Swiss companies and how can they be successfully implemented?

Methodology

The WCM Study 2018 is based on primary and secondary data which was initially analysed in a differentiated manner based on the individual topics and then interpreted in a correlated manner. Both qualitative estimates and quantitative information were used. All information and data was thoroughly checked, validated and systematically prepared.

Sector affiliation of study participants



Information sources

The WCM Study 2018 is based on two data sources:

- 114 questionnaires (WCM expert survey 2018)
- Economic and financial databases (in particular, Bloomberg and Thomson Reuters Eikon)

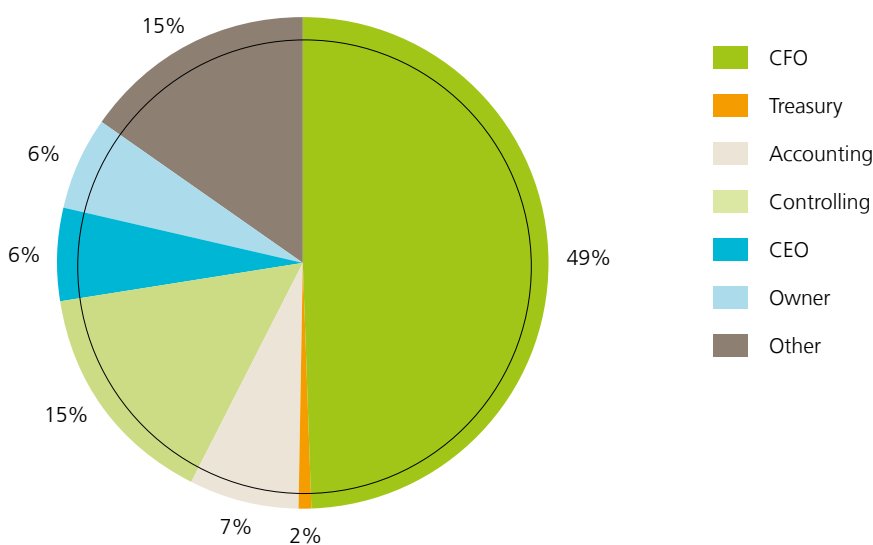
The external data sources were used for the calculations in the WCM figures section in particular. This enables the supply chain-oriented analysis of the cash-to-cash cycle to be carried out and the database to be significantly increased.

All further evaluations are based on the questionnaires carried out during the period March to May 2018 as part of the WCM expert survey 2018. The expert survey is restricted to the Swiss market and focuses on various issues concerning WCM and SCF.

Study participants

The WCM Study 2018 covers several sectors to provide the most comprehensive insight possible into WCM at Swiss companies. The sample includes a total of 114 companies from 11 different sectors, whereby major corporations (over 250 employees) account for 30% and small and medium-sized enterprises 70%. The balanced composition of the sample aims to increase the representative nature and generalizability of the study results for the Swiss market.

Function of the study participants



Supply Chain Finance Lab

The Supply Chain Finance Lab of Swiss Post (SCF Lab) at the University of St. Gallen conducts research on financial supply chain management at the interface between knowledge and application. The research activities focus on the broad and not distinct topics of working capital management and supply chain finance. The annual WCM Study and the Swiss WCM Awards are a major part of the SCF Lab's activities.

WCM Study

The WCM Study was published for the first time in 2014. It sought to determine the current performance level of Swiss companies in WCM and to identify good practices. With its focus topic of supply chain finance, the WCM Study 2018 builds on these objectives and provides valuable impetus for creating financial flexibility for the entire supply chain.

Swiss WCM Awards

The Swiss WCM Awards recognize outstanding overall working capital management performance and innovative solutions in the categories of "Performance Excellence" and "Innovation", thereby making a significant contribution to improving WCM in the long term. The jury of the Swiss WCM Awards is made up of the following high-level experts:

- Prof. Dr Wolfgang Stölzle (chair of the jury and Professor at the Institute for Supply Chain Management at the University of St. Gallen)
- Adrian Brönnimann (Head of Individual Customers, PostFinance)
- René Cotting (CFO, ABB Switzerland)
- Pascal Koradi (Member of the Management Board of the CFO Forum Switzerland)
- Tobias Knechtle (CFO, Valora Holding)
- Rolf Renz (CFO, Siemens Schweiz)
- Mario Rossi (CFO, Swisscom)

Further studies and recommended literature

WCM Studies from previous years:

- **Hofmann, E., Martin, J. (2017):** Working Capital Management Studie 2017 – Digitalisierung. Supply Chain Finance Lab of Swiss Post at the University of St. Gallen, Berne.
- **Hofmann, E., Martin, J. (2016):** Working Capital Management Studie 2016 – Trends. Supply Chain Finance Lab of Swiss Post at the University of St. Gallen, Berne.
- **Hofmann, E., Martin, J. (2015):** Working Capital Management Studie 2015. Supply Chain Finance Lab of Swiss Post at the University of St. Gallen, Berne.
- **Hofmann, E., Martin, J. (2014):** Working Capital Management-Performance Excellence-Studie Band 2014. Cuvillier Verlag, Göttingen.

Selected literature recommended by the authors:

- **Hofmann, E., Strewe, U., Bosia, N. (2017):** Supply Chain Finance and Blockchain Technology: The Case of Reverse Securitisation. Heidelberg: Springer.
- **Hofmann, E., Schneider, C., Wetzel, P. (2017):** Working Capital Management bei Eisenbahnverkehrsunternehmen. Controller Magazin, 42nd volume (issue 5). 4–13.
- **Hofmann, E., Johnson, M. (2016):** Supply Chain Finance – some conceptual thoughts reloaded. International Journal of Physical Distribution & Logistics Management, 46 (4), 1–8.
- **Templar, S., Hofmann, E., Findlay, C. (2016):** Financing the End-to-End Supply Chain: A Reference Guide to Supply Chain Finance. London: Kogan Page.
- **Hofmann, E., Martin, J. (2015):** Versteckte Schätze – Working Capital Management. UnternehmerZeitung, 21 (3), p. 58–59.
- **Hofmann, E., Martin, J. (2013):** Finanzströme im Griff: Working-Capital-Manager als neues Berufsbild in der Logistik. Lebensmittelzeitschrift, 64 (42), p. 44.
- **Hofmann, E., Belin, O. (2011):** Supply Chain Finance Solutions: Relevance – Proposition – Market Value. Springer, Berlin Heidelberg.
- **Hofmann, E., Maucher, D., Piesker, S., Richter, P. (2011):** Wege aus der Working Capital-Falle – Steigerung der Innenfinanzierungskraft durch modernes Supply Management. Springer, Berlin Heidelberg.
- **Hofmann, E., Kotzab, H. (2010):** A Supply Chain-Oriented Approach of Working Capital Management. Journal of Business Logistics, 21 (2), p. 305–330.

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PostFinance Ltd
Working Capital Management
Competence Center
Mingerstrasse 20
3030 Berne
Switzerland

Telephone +41 31 667 98 85

postfinance.ch/wcm

University of St. Gallen
Supply Chain Finance Lab
of Swiss Post
Dufourstrasse 40a
9000 St. Gallen
Switzerland

Telephone +41 71 224 72 91

iscm-scf-lab.unisg.ch