Deutsche Bank
Corporate Bank

Working capital finance – the future

#PositiveImpact

Asset finance insights from industry experts

Contents

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Executive summary

The Covid-19 pandemic has changed the world in a way that few other historic events have equalled. One impact is that many companies need to pay increased attention to the financing and structure of their working capital.

Once-esteemed just-in-time thinking is being challenged. Companies, together with entire countries are prioritising security of supply and financing. Reductions in sales, interrupted supply chains and a lack of planning are significant triggers. At the time of publishing in early 2022, the global economy is facing a massive increase in raw materials prices as well as shortages of intermediate products. At the same time, geopolitical challenges have increased while, in addition, the net zero energy transition must be managed and its political implications resolved.

For corporate treasurers in Europe, supply chain disruptions remain the biggest challenges they face, according to a survey published in October 2021 by Economist Impact in cooperation with Deutsche Bank.[1]

Addressing the question of how supply chains can become more resilient in the future is therefore becoming paramount. Alongside this is the need to rethink working capital financing. Going forward, corporates will need to balance the different objectives of operational stability from larger inventories, but at the cost of lower profitability.

To complicate matters further, it is not just the pandemic that is impacting supply chains. The global megatrend of sustainability is also fundamentally changing the way we work with suppliers. In the wake of the new German Supply Chain Act, companies will have to assume even greater responsibility for compliance with human rights and environmental standards in their supply chains. Investors, customers and employees are also increasing the pressure on companies to operate more sustainably. Financing solutions linked to key sustainability performance criteria can help incentivise companies and their suppliers to behave in a more ESG-compliant manner.

The second major megatrend that will shape working capital financing in the future is digitisation or the Internet of Things (IoT). There will soon be a time when customers will no longer have to buy machines or equipment but will be able to pay for actual capacity and asset utilisation. Such usage-based business models are gaining in popularity because they can help improve production through real-time utilisation data generated from the asset itself and this is much more efficient in terms of offsetting the depreciation cost from wear and tear of the asset.

Such models also allow the customer to make their cost base more flexible and adapt it to the sales of its end products. However, these business models also require new financing solutions, which companies and banks need to develop together. At the same time, digitalisation is ensuring that working capital financing is increasingly the focus of fintechs, which are entering the market with new product solutions and convenient platform offerings. This development will also call for new types of collaboration models in the future.

Theme 1: Working capital efficiency vs procurement security: Global crises shift priorities. Inventory finance enables strategic inventory management and optimised balance sheet ratios

Theme 2: Public and regulatory pressure on companies to ensure sustainability in their supply chains is growing. Financing solutions linked to ESG performance criteria are gaining traction

Theme 3: The transformation to Industry 4.0 will ensure that usage-based business models and Asset-as-a-Service (AaaS) schemes increase in popularity

Theme 4: Ecosystems, contextual banking and fintechs are permanently changing the structure of working capital financing

These themes are explored in more detail below.

Theme 1:
Working capital efficiency vs procurement security: Global crises shift priorities. Inventory finance enables strategic inventory management and optimised balance sheet ratios

1.1 Background

In more than 30 years since reunification never have Germany's industrial companies complained so much about supply bottlenecks as in 2021. According to the ifo Institute for Economic Research, in Q3 of 2021 more than 60% of German companies suffered from bottlenecks in the availability of intermediate products. The automotive sector is particularly affected but, overall, an above-average number of companies across all sectors are currently struggling with supply bottlenecks.[2]

These are by no means purely German challenges. The trade war between the US and China, the UK's exit from the European Union and, in particular, the Covid-19 pandemic have hit global supply chains hard. This influence is evidenced by the current shortage of semiconductors and microchips. Demand, which has been rising unabated for years, is currently being met with only limited supply. In China, for example, production facilities were shut down or operated on a severely restricted basis in 2020 following the imposition of strict quarantine measures. This trend continued in 2021, as evidenced, for example, by the closure of the Chinese ports of Yantian and Ningbo[3] soand the temporary shutdown of processing plants in Southeast Asia.

But limited supply is not only due to the effects of the pandemic. In addition, there were extreme weather events in the US state of Texas, where power outages resulting from an unusually severe winter caused the shutdown of several chip factories, and the temporary blockage of the Suez Canal in spring 2021.

In addition to the shortage of raw materials and intermediate products, companies must also contend with rising purchase prices. In particular, producer prices for metals, crude oil and natural gas have risen sharply in recent months. In October 2021, the index of import prices rose by 21.7% year-on-year, while energy import prices spiked even more sharply at 141% higher year-on-year.[4] As a result, the inflation rate in Germany also increased significantly – in November 2021, it was 5.2%. Several structural factors suggest that business and consumers should prepare for higher inflation rates in 2022 and subsequent years.[5]

These developments are forcing many industries to rethink their current procurement and working capital financing structures. Until very recently, many companies have purchased in such a way that, wherever possible, preliminary products are delivered only when they are actually needed for production and to fulfil customer orders. However, this "just-in-time" approach then led to significant business interruption during the pandemic.

There is therefore much to suggest that the shortage of intermediate products will remain more than a temporary phenomenon. After all, if companies and countries focus more on their own supply security, this could in turn lead to bottlenecks elsewhere. To strengthen the resilience of the wider supply chains, companies need new strategies.

1.2 Strategies for more stable supply chains

Companies can ensure procurement security using three basic approaches:

- Supplier retention and diversification: Targeted investments in supplier loyalty, such as supplier finance programmes, strengthen the partnership and bind the parties more closely together – even in crisis situations. Yet in order to avoid entire plants coming to a standstill in the event of a supplier failure, companies must simultaneously make themselves less dependent on individual suppliers. However, building business relationships usually takes time, so companies should identify new or replacement suppliers as a precaution – rather than waiting until the crisis erupts.
- Insourcing or local procurement: International supply chains are particularly susceptible to disruption. The numerous border closures in the wake of the pandemic have made this painfully clear to many companies. The geopolitical conflicts between the US, China and Russia also harbour risks. Accordingly, it will become even more important for companies to have suppliers on site in the future. Local sourcing also reduces dependence on container capacity availability and volatile freight rates.
- Rising inventory levels: Supply chains become more robust when companies shift their inventory management strategy from just-in-time (JIT) to just-in-case (JIC). Specifically, this means that products are bought to be kept in stock as protection against unexpected increases in demand or price. However, the JIC strategy also ties up more capital because of this increased inventory, which means that companies and financial institutions need to jointly develop new financing solutions. The goal should be to allow companies to maintain larger inventories while maintaining balance sheet efficiency.

For each of these three strategies, there are suitable financing approaches to ensure that companies remain flexible, free up cash and optimise their balance sheet despite implementing increased procurement security measures (see Figure 1). Section 1.3 takes a closer look at inventory finance. Companies have historically used this instrument only rarely, so it still offers much potential for optimising working capital.

Strategy	Financing requirements	Total assets	Profitability	Solution approach
Supplier loyalty and diversification of suppliers	↔	↔	↘	Supplier finance, Dynamic discounting Reverse factoring
Insourcing and local procurement	↑	↔	↓	Investment loans
Rising stockpiling	↑	↑	↓	Inventory finance

Figure 1: Strategies for more procurement and price security alongside suitable working capital financing solutions

However, Figure 1 also illustrates that banks need to rethink the way they assess a company's working capital management performance. Classic financial ratios – such as net working capital or the net working capital ratio – and their interpretation appear to be of little use against a backdrop of the increasing importance of procurement security and acquiring vital inventory ahead of time. In future, it will be more a matter of assessing whether a company has found the right balance between security and profitability.

A rethink is also needed on the valuation of inventories as loan collateral: When companies understand strategic warehousing as an integral part of their corporate strategy, the valuation of these collaterals becomes more important. It is true that the valuation level or its markdowns also depend to a great extent on the demand for the input products stored – and this does not change as a result of higher inventory levels. However, larger usage data pools and specialised recovery expertise offer opportunities for more accurate inventory valuation.

1.3 Inventory finance in focus

Inventory finance enables companies to secure liquidity in times of rising inventory levels and at the same time provide balance sheet relief. In essence, this is asset-based interim financing based on the value of the respective preliminary products. Figure 2 illustrates the effect on the company's balance sheet.

This solution is particularly suitable for companies with high inventory levels and low stock turnover. As a rule of thumb, it can be assumed that if the commitment period of current assets exceeds 90 days, it may be worth considering inventory finance. These solutions are, though, generally more expensive than the established working capital offerings – receivables purchasing and supplier financing. Therefore, the level of capital costs should also be included in the decision-making process.

Demand for traditional inventory finance solutions is currently rising, especially in the automotive, telecommunications, technology and manufacturing industries, although not only these sectors. The pandemic has also led seen industries such as retail look for solutions to improve their inventory financing. This can be explained by the so-called "bullwhip" or "whiplash" effects[6] .

In principle, inventory finance has the advantage of being suitable for all products provided they are freely tradable goods that are not subject to, for example, any special licensing requirements. Preliminary products with limited availability on which the customer depends, for example individually manufactured tool parts, are particularly well suited to this form of finance. For preliminary products subject to large price fluctuations – such as commodities traded on stock exchanges – companies should, on the other hand, consider alternative financing solutions.

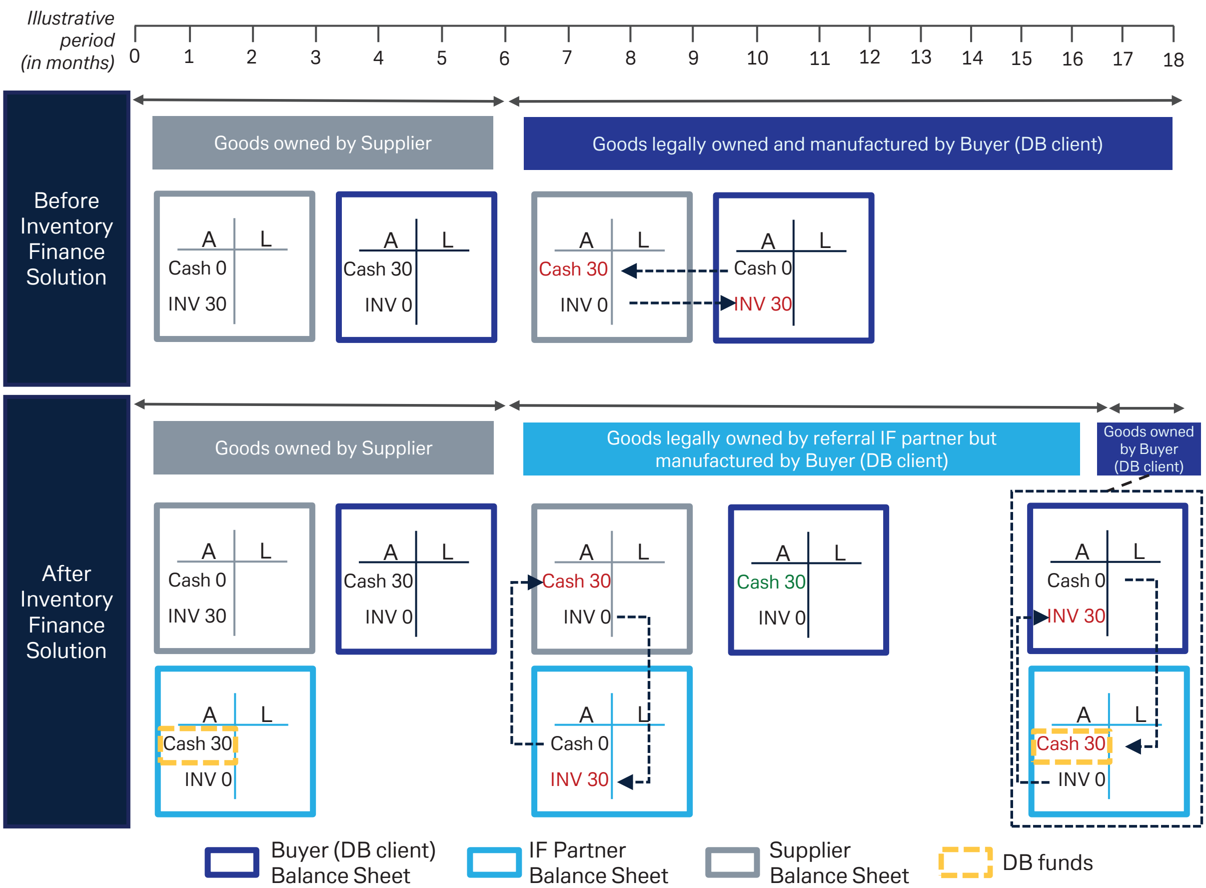

Figure 2: How inventory financing works

There are three distinct types of inventory finance: each reflecting the role of the bank and the type of refinancing:

- Refinancing by specialised provider: With this approach, the inventory finance provider is the customer's contractual partner. So Deutsche Bank would broker the transaction and can support with additional products, for example guarantees or letters of credit, if required. However, refinancing is carried out by the inventory finance provider, which is why the customer's own risk assessment by the provider is required.
- Refinancing by means of purchase of receivables: With this second option, Deutsche Bank acts as the financing partner. In this process, the inventory finance provider sells its (future) receivables from the customer to the Bank. The prerequisite for this is an unconditional payment commitment from the customer, which the inventory finance provider assigns to Deutsche Bank together with the receivables. The advantage of this solution is that the financing is based on the customer's pre-existing credit rating. However, the Bank usually requires that the due dates of the (future) receivables are already determined. This approach therefore offers the customer only limited flexibility.
- Refinancing by means of credit line: In the third option, Deutsche Bank also acts as a financing partner – but refinances the transaction by means of a credit line or via a special purpose vehicle (SPV) that was established by the inventory finance provider for this particular transaction. The

prerequisite in this case is that the customer gives an unconditional commitment to accept the goods. He/she can choose the time of acceptance flexibly – a clear advantage over the second option. However, the Bank's risk assessment is more complex for this option. In addition to the customer's credit rating, it must also consider the performance risk of the inventory finance provider.

1.4 Outlook and other approaches – platform solutions

A platform solution for inventory finance might also merit consideration – given this option already exists in the area of supplier finance. However, it would be necessary that customer requirements and the market environment allow transaction structures to be standardised. Here, the technical infrastructure of existing platform solutions could be used and extended to include inventory data.

Theme 2:

Public and regulatory pressure on companies to ensure sustainability in their supply chains is growing. Financing solutions linked to ESG performance criteria are gaining traction

2.1 Background

The global megatrend toward a more sustainable world economy is also having an impact on global supply chains. A major reason for this is regulation: On 11 June 2021, the German Bundestag passed the Supply Chain Act.[7] It stipulates that German companies, as well as foreign companies based in Germany, will in future be responsible for compliance with human rights and environmental requirements in their supply chains. Companies with more than 3,000 employees will be subject to the law from January 2023 and companies with more than 1,000 employees must comply with these requirements from January 2024.

Due diligence covers the entire supply chain, from raw materials to the finished product. If a company receives "substantiated knowledge" of human rights violations at indirect suppliers, it must take appropriate action. Compliance with the law is checked by the Federal Office of Economics and Export Control (BAFA). In the event of violations, it can impose fines of up to 2% of average annual sales, depending on the size of the company.[8]

Legislators in other European countries, such as France and the Netherlands, have also introduced similar regulations.[9] These national laws by EU member states increase pressure on the European Union to also act. The goal must be to close regulatory gaps and set uniform standards within the EU through binding requirements. The EU Commission originally planned to present a legislative proposal on due diligence requirements for the protection of human rights and the environment in the supply chain as early as June 2021.[10] However, as of January 2022 this proposal was still pending.

Alongside regulation, the requirements of customers, suppliers, employees and investors are equally crucial for companies' sustainability efforts. Each group is increasingly placing value on companies operating sustainably – and in doing so, they expect companies to also keep an eye on their suppliers and the entire supply chain. Stakeholder pressure is often greater than regulatory pressure, and their requirements can go well beyond the legal minimum.

2.2 Solution approaches

In the future, companies will be required to track, document and verify their supply chains more closely than ever. For this to be possible, they should initiate a comprehensive evaluation of their existing compliance and due diligence programmes. This is the only way to identify risks at an early stage and initiate countermeasures. The effort involved for such monitoring depends on the respective risk profile of the company – in other words., the business model, the industry and, in particular, the countries in which the company operates.

Database providers or external consultants can help companies with this monitoring. For example, it makes sense to require direct suppliers to have an external environmental, social and governance (ESG) rating from providers such as EcoVadis or Sustainalytics.

Banks can also help companies improve sustainability performance in their supply chains. Deutsche Bank already offers financing linked to sustainability criteria, via so-called sustainability-linked loans. The margin is linked to the achievement of jointly set sustainability targets. This creates an additional incentive to operate in an ESG-compliant manner.

To date, such sustainability links have been used primarily in syndicated loans, but in future they will also be increasingly integrated into supply chain finance programmes. This would allow companies to grant preferential conditions to suppliers who meet certain environmental and social standards. In a 2021 survey of corporate treasurers, about half of the 125 respondents said they could envision using such programmes to incentivise their suppliers to be more sustainable.[11]

While suppliers benefit from financing advantages, buyers can deepen the relationship with their suppliers and assess their sustainability performance using a single metric. In turn, companies can use this information for the due diligence programmes explained above. The ability to access a more robust bedrock of data makes it possible to ground one’s own purchasing behaviour and habits in ecological and social sustainability.

Theme 3:

The transformation to Industry 4.0 will ensure that usage-based business models and Asset-as-a-Service (AaaS) schemes increase in popularity

3.1 Background

The Internet of Things (IoT) will significantly change the way industrial companies operate in the coming years. Linking machine and plant assets with sensors via cloud technologies allows companies to make their value creation more transparent, measurable and thus more efficient.

The data points can be used to develop new business models across industry sectors. For example, companies no longer need buy machines, but can use them as and when needed (pay-per-use). This approach is also described as "Capex-to-opex".[12] Customers can thus make their cost base more flexible and adapt it to the sales of their end products. In turn, machine and plant manufacturers can offer their customers additional services and complementary services such as maintenance (servitisation).

European companies are still largely in the early stages of developing these new tailored offerings. In the medium term, however, the share of usage-based business models as part of total revenue is likely to grow. Scaling these models requires new forms of financing because traditional sales financing no longer works when customers borrow rather than purchase the machine.

3.2 Solution approaches

In this environment, Asset-as-a-Service (AaaS) models will gain in importance. The central concept here is that neither the balance sheet of the plant manufacturer nor that of the plant user becomes the limiting factor. This is made possible through a range of financing and risk management solutions presented on or off the balance sheet.[13]

The bank plays a crucial role in this model: The full utilisation and investment risk can be outsourced to it, and as a financing partner this approach makes the model scalable. The bank also benefits from this. It achieves scalability by building a long-term, deep relationship with the manufacturer– instead of financing selectively on the manufacturer's side as in the past (see Figure 3).

Deutsche Bank has already developed an initial expansion stage of the technical AaaS platform required for this. It connects to customers' IoT systems, extracts the required data and initiates banking processes.

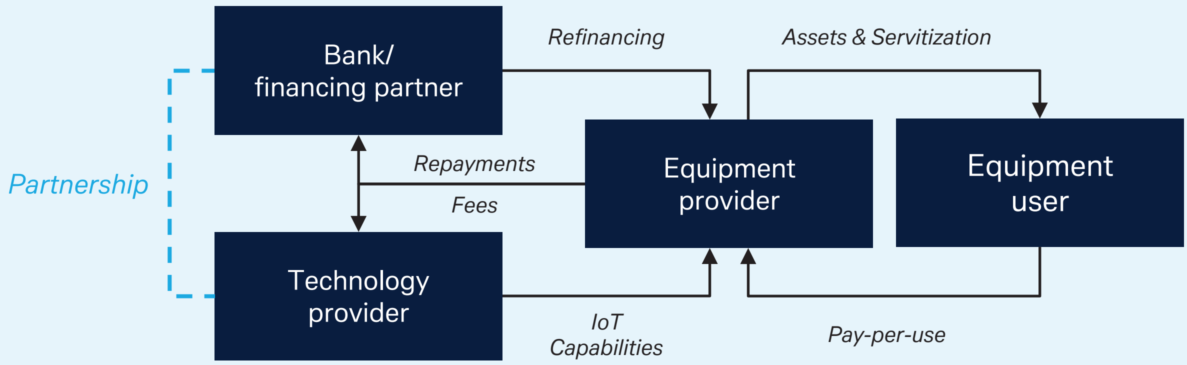

Figure 3: Asset-as-a-Service – a digital business model

Additionally, the Bank has developed a structure that allows manufacturers to offload assets via true-sale, taking the burden off the balance sheet. This also closes the working capital gap of opex business models because the cash flow from asset sales is directly available to the manufacturer, instead of accumulating via monthly or annual usage payments, which would be the case with a regular pay per use model. In other words, the sale of the machine by means of an off-balance sheet solution enables the entire revenue to then be directly realised and recognised. Therefore, ideally there is no sales gap, the revenue would not have to be stretched over a pre-determined period of time, and the liquidity of the equipment provider would not be impacted negatively as a result.

3.3 Challenges and outlook

Asset-as-a-Service is currently in its infancy. All parties involved still have further work to do before they can successfully implement this business and financing model.

Equipment manufacturers face the following challenges in particular:

- Internal synchronisation: Classic working capital products are usually selected by companies' finance departments. However, these functions are not always involved at an early stage in the development of IoT strategies and opex business models. They should therefore permanently ensure that an interface with in-house technology know-how (sensors, data availability, etc) is established.
- Coordination with the auditor: AaaS is an off-balance sheet solution. It must be agreed with the auditor how this is to be handled in comparison to the IFRS accounting rules of classic leasing.[14]
- Planning for utilisation and occupancy risks: Manufacturers must first develop a deep understanding of how their customers actually use their machines.

No financial or insurance products are yet available for third parties to assume these risks should the machine come to a standstill, interrupting the cash flows. This is likely to change as the number of data points grows. Initially the usage risks, including the effects of exogenous shocks, must be borne by the manufacturer and the user (e.g., via basic fees/minimum usage).

The banks are also in demand as AaaS platform and financial services providers and should bear in mind:

- Structuring of financing: It is difficult to imagine scaling growth using purely credit-based financing, as it increases the manufacturer's credit exposure. Also, once above a certain company size significant parts of sales can no longer be financed by one or a few banks. Thus, sustainable scaling of the business requires capital market-oriented structuring. Special purpose vehicles (SPVs) may offer an option here.
- Ensure security, privacy and data sovereignty: It must be ensured that transmitted data cannot be manipulated or compromised. Banks, as trusted partners that already process a large amount of sensitive data today, are ideally positioned as data intermediaries. For example, Deutsche Bank's platform only receives a subset of the data required for the financing and payment processes. This data is processed with the same security standards of a bank as, for example, relevant customer data is already processed today in payment transactions.

In addition, there are other industry issues that users of AaaS should be aware of:

- Establish standards for data formats: Deutsche Bank's interface provides extensive connectivity into customers' IoT systems by consuming data in the customer's form and format and "translating" it into the Bank's format. This means that there is already a great deal of flexibility, even for future data formats and assets. However, new industry standards are needed. Deutsche Bank therefore engages with various standardisation bodies such as Mindsphere and Fraunhofer.
- Establish marketplaces for asset remarketing: Plant users will not always use new machinery when it is possible to borrow or buy used assets. Currently, with such secondary or third-party use, there is an asymmetry of information between the seller, who knows how much a machine has already been used, and the buyer, who does not have this data. AaaS can help make this information transparent and find a fair price for the secondary or third-party marketing of used machinery. In the best-case scenario, resale can even be automated with it. Appropriate marketplaces could be established for this purpose in the future. The use of distributed ledger technology (DLT) would also be conceivable. Thanks to decentralised processing on DLT platforms, usage data can be documented in a tamper-proof manner and information asymmetries can be eliminated.

Successfully scaling opex business models in the current phase of the market will require many strong industry partnerships within the ecosystem of manufacturers, users, technology service providers, sensor manufacturers, security and software providers to develop industry standards. At the same time, initial experience must also be gained to enable faster scaling up and market adaptation of these new business models.

Theme 4: Ecosystems, contextual banking and fintechs change the structure of working capital financing on a sustainable basis

4.1 Background

The topic of working capital financing has, in recently years, increasingly become the focus of fintechs and technology groups. In addition, the pandemic has acted as a digitisation accelerator.

This is good news for companies, as estimates suggest around 80% of eligible assets worldwide do not yet benefit from targeted working capital management and that the remaining 20% can be further optimised.[15] The growing range of new types of working capital financing solutions is making it easier for companies to access them, regardless of the size of their turnover.

Specifically, the new market players want to create added value for companies through creative solutions and user-friendly platforms. Amazon is an example of this: the US tech giant is partnering with fintech Lendistry to offer short-term financing for Amazon sellers[16] and, in conjunction with ING Germany, financing with terms of up to 12 months.[17]

A new financing solution for business-to-consumer (B2C), used primarily by end customers and merchants is the "Buy Now, Pay Later" (BNPL) model. Similar to a purchase on account, the buyer pays only after a certain period of time, either in instalments or the entire amount. The key difference, however, is that the seller is paid directly by the financial service provider at the time of purchase. In addition to fintechs such as Klarna, Billie, Afterpay and Ratepay, established payment service providers (PSPs) such as PayPal also offer such solutions. From the B2C world, many of the players have now discovered the business-to-business (B2B) customer for themselves. Despite different risk profiles than those in the B2C business and the corresponding expertise or technologies, the market offers extremely high growth potential. In a new world of technology companies with banking licences and fintechs but with new types of financing solutions, there remains the question of how banks intend to position themselves going forward.

One answer to this lies in building ecosystems[18]: It has long been a necessity for banks to expand their traditional offerings to include digital solutions so that they can remain an established partner for financing along their customers' supply chains in the long term. The key will be to open up their platforms to the right fintechs and to use new technologies such as artificial intelligence and Big Data to add value.

Set up correctly, these partnerships are win-win arrangements: Banks benefit from the agility of fintechs in product development, while start-ups in turn benefit from the fact that banks enjoy the accumulated years of trust from their customers and can contribute their experience as regulated providers.

In addition to the development of platforms, banking that is adapted to the context of what it finances (contextual banking)[19] will also gain in importance. In future, banks should regard financial products as part of their customers' operating business. If, for example, the payment process can be seamlessly integrated into the buying process of an online store and concrete suggestions for financing can be integrated into the end customer's search processes, both the seller and his/her customer will benefit.

4.2 Practical examples

a) Trade Information Network

One example that demonstrates how ecosystems can help improve working capital financing is the Trade Information Network (the Network). Deutsche Bank established the Network in 2018 together with five other global banks to improve access to trade finance.[20] The six banks have set themselves the goal of building a global multi-bank and multi-company network. Companies can use the Network to provide their trading information easily, securely and directly to the banks of their choice. Figure 4 outlines the flow of information and transactions along the Trade Information Network.

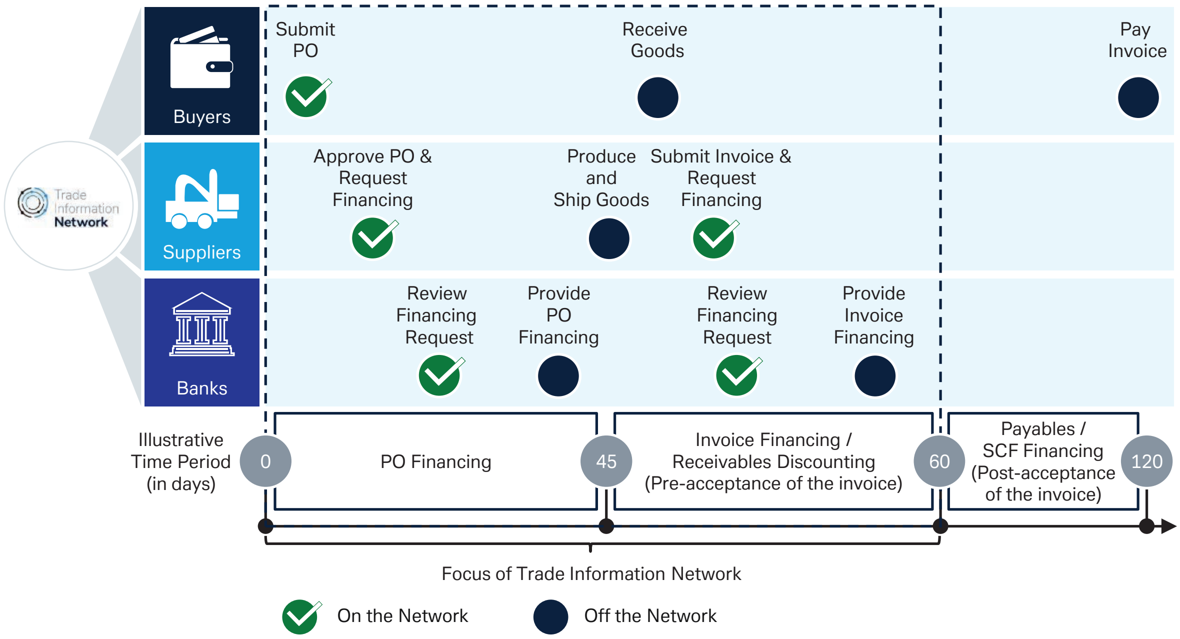

Figure 4: Transactions within the Trade Information Network

The Network provides financial institutions with access to trusted trading information, reducing the risk of double funding and fraud attempts. Here, the Network follows the invitation principle – which means that only companies that are already registered can invite new users to the Network. After a user registers on the platform, Trade Information Network Limited, the operator of the platform, verifies the request and activates the new account.

Companies connected on the Network can decide which orders will be placed (by the buyer) and which of them will be requested (by the supplier) to which bank for financing. The selected bank carries out the financing outside the Network. A financing request can also be made after the invoice has been issued and, if applicable, the amount can be used to repay the contract financing. The main objective is to help banks make an even better financing offer to their customers in the pre-shipment phase.

b) Traxpay

One example of collaboration with fintechs is Deutsche Bank's investment in the Traxpay platform. Companies can use this platform to combine different working capital solutions. Furthermore, customers can financially incentivise their suppliers to improve their sustainability performance thereby making supply chains more resilient and helping them attain ESG goals.

- Reverse factoring: This is debt-based supplier financing. The supplier assigns its receivables to the financing partner – for example, Deutsche Bank – and receives their funds immediately. The default risk is transferred from the supplier to the financing partner, enabling suppliers to save on financing costs and possible costs for credit default insurance. In return, the supplier grants the financing partner a discount based on the creditworthiness of the buyer.
- Dynamic discounting: Here, companies can use their own liquidity to pay supplier invoices early via the platform. The amount of the discount granted varies depending on the length of the outstanding payment term. Dynamic discounting benefits buyers and suppliers alike. Buyers have the opportunity to receive high returns on their free liquidity while strengthening their supply chain. Suppliers gain access to a flexible and bank-independent source of financing.
- Digital forfaiting: This allows companies to generate further liquidity by selling open trade receivables to a financing partner without recourse while receiving the agreed purchase price immediately. The timing and volume of these transactions can be chosen by the company itself permitting firms of all sizes to free up cash that would otherwise be bound up in receivables. As receivables are sold without recourse, this reduces the days sales outstanding (DSO) and therefore increases revenue. Buyers benefit from better payment conditions and – due to the non-recourse sale – the default risk on trade receivables is eliminated.

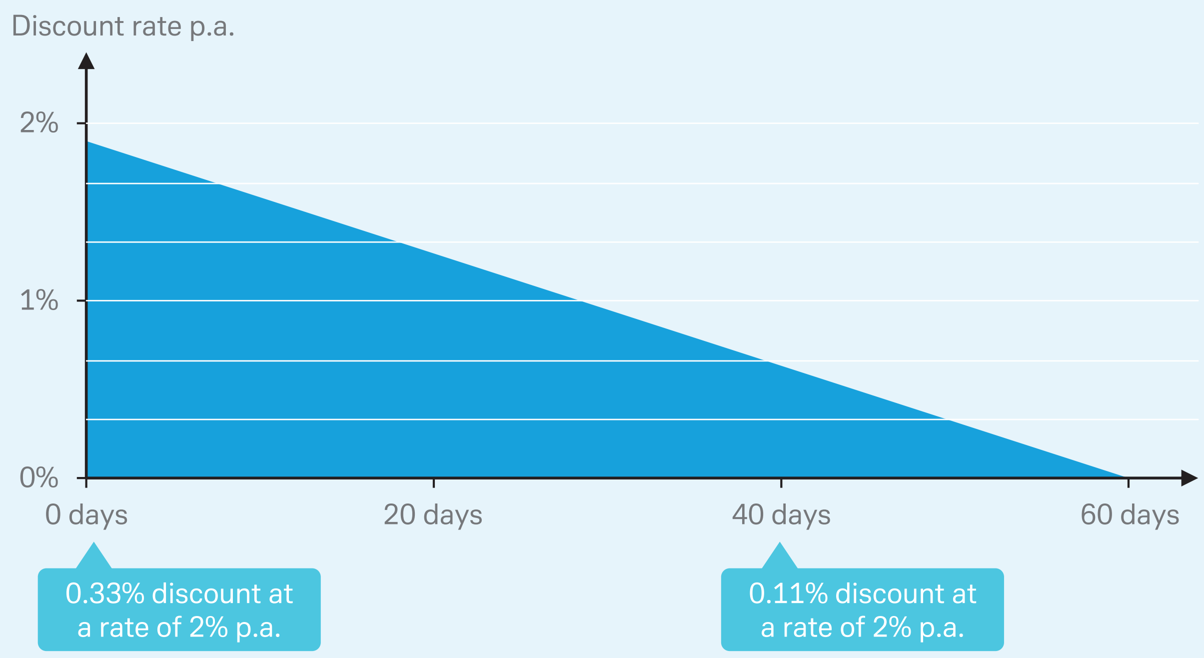

Figure 5: How dynamic discounting works

Conclusion and recommended actions

This white paper has outlined how working capital finance is facing major upheaval. Lessons learned from the pandemic, the increasing importance of sustainability and the new opportunities created by digitisation will create fundamental shifts in companies' future business models and, consequently, in their financing requirements.

It is recommended that finance managers therefore start looking today at how to equip their working capital financing for this multidimensional transformation. The same applies to banks, which should prioritise working with their customers to develop new viable solutions. As this paper explains, a start has been made but much remains to be done.

Endnotes

1 https://impact.economist.com/perspectives/strategy-leadership/treasury-connected/connected-with-suppliers/
2 https://www.ifo.de/publikationen/2021/zeitschrift-einzelheft/ifo-schnelldienst-092021
3 Approximately 90 % of all electronics exports from China pass through the port of Yantian (Handelsblatt, 28.07.2021)
4 https://www.destatis.de/DE/Presse/Pressemitteilungen/2021/11/PD21_536_614.html
5 Deutsche Bank Research: https://bit.ly/3lVLzhS
6 The "bullwhip" effect occurs when a decline in end-customer demand causes retailers to reduce their inventories. In turn, wholesalers are responding to a shortage of retail orders by cutting back on their own inventories, prompting manufacturers to slow down production. The "whiplash" effect occurs when customer demand picks up, retailers quickly order more goods, and wholesalers and factories run into supply shortages
7 https://www.bundestag.de/dokumente/textarchiv/2021/kw23-de-lieferkettengesetz-845608
8 https://dserver.bundestag.de/btd/19/286/1928649.pdf
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10 https://www.boersen-zeitung.de/lieferkettengesetz-in-eu-verzoegert-sich-09b5327a-26a3-11ec-924f-156d8c68cdea
11 https://www.dertreasurer.de/digital-storytelling/traxpay/supply-chain-finance/
12 The term describes the shift from capital expenditure (Capital Expenditure) to expenses for business operations (Operational Expenses)
13 https://www.deutsche-bank.de/ub/results/asset-as-a-service-transformation-von-capex-to-opex.html
14 https://www.ifrs.org/issued-standards/list-of-standards/ifrs-16-leases/
15 https://www.mckinsey.com/~/media/mckinsey/industries/financial%20services/our%20insights/accelerating%20winds%20of%20change%20in%20global%20payments/2020-mckinsey-global-payments-report-vf.pdf
16 https://www.bloomberg.com/press-releases/2021-09-21/amazon-and-lendistry-launch-amazon-community-lending-pilot-program-to-fuel-growth-for-small-and-medium-sized-businesses
17 https://www.ing.com/Newsroom/News/ING-in-Germany-and-Amazon-join-forces-in-SME-lending.htm
18 In this context, ecosystems refer to a platform or network of different players who jointly offer their services to customers. Here, a distinction is made between orchestrators (established companies that usually provide the infrastructure) and partners (players that contribute product solutions to the orchestrator's ecosystem)..
19 Contextual banking refers to the adaptation of product offerings to customer needs via an algorithm or artificial intelligence that suggests the right (product) solutions at the right time
20 https://www.deutsche-bank.de/ub/results/finanzierung/trade-information-network.html

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- Jochen Siegert, Head of Asset Platforms
- Patrick Ulmer, Structuring Trade Finance
- Desirée Buchholz, Editorial Marketing Manager
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