

The road to real-time treasury



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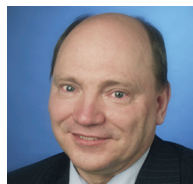
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Foreword

As instant payments schemes continue to roll out across the world, this not only impacts B2C companies, but also has a knock-on effect on the full value chain of globally connected corporates

Treasury departments have been slowly moving from batch and daily processes to more real-time systems, and this is only set to accelerate. In fact, this trend seems irreversible. At a recent treasury conference, a treasurer from a leading B2B multinational described that they had only recently recognised the transformational impact that real-time payments could have, and that they were keen to ramp up preparations. This is indicative of other common trends - the move from operational treasury to a more strategic treasury focus, from bank account management to dynamic balance sheet management, and from managing bank relationships to managing relationships with commercial partners. It's clear that change is the only constant.

We hope you find this paper further clarifies the benefits that can be realised, and is a valuable source of inspiration on your journey towards a fully real-time treasury.

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Introduction

It's the beginning of a new year. It's 2021 or perhaps 2022. What do you see when you first come into the office in the morning?

This is assuming that you still need to come into work early in the morning, and indeed, that you come into the office at all. You are more likely to be out in the field helping a new business unit roll out its digital sales channel, or you might be working from home. You may still (for nostalgia's sake) have a screen on your desk, but everything you need is on your phone or tablet.

The concept of a daily cash position is long gone: cash is sent and received 24/7 so your bank account balance (of which you probably have only one per currency or even just one account) is changing dynamically on screen all the time. As soon as cash is received onto the account, it is automatically reconciled and posted to the customer account, which the sales teams can see straight away. Payments are made automatically and received at the precise point they are due, or the system may calculate when an early payment discount is most advantageous. An alert comes through to say that a trade shipment can be released. That's good. Annoyingly, it had been in dock for nearly an hour (gone are the hours or days of the past) – apparently the wifi connection was weak.

Surplus cash is invested automatically, in accordance with group risk, return and diversification policy; similarly, real-time cash-flow forecasts pinpoint the exact time and amount of borrowings that may be required. The most beneficial borrowing conditions in line with group policy are automatically identified and the relevant counterparties alerted. Meanwhile, FX risks are calculated dynamically, and hedges adjusted incrementally.

But what are treasurers doing while the combined forces of Robotic Process Automation (RPA), Artificial Intelligence (AI) and Application Programming Interfaces (APIs) shoulder the operational burden? Will they be redundant? Far from it. They will be doing the job they are employed to do: analysing data, making decisions and managing group-wide risk and liquidity. Today's treasurers, let alone those of tomorrow, do not add value by processing paperwork and pushing data and transactions between systems. Rather, they do this by shaping strategy, enabling growth, and making the company financially robust, efficient and competitive.

Is the real-time treasury a concept that will be realised by our children or grandchildren? We won't have to wait that long. There are aspects of the real-time treasury that are already taking shape, with momentum building. This paper explores some of the solutions, innovations and opportunities that are enabling treasurers, with the help of their banking and technology partners, to realise the real-time treasury, and play a leading role in driving business success.

1. Real-time payments

Spurred by the advent of instant and real-time payments schemes around the world, the acceleration of cash transfers will ultimately have a transformative effect on treasury

Rather than managing cash and risk positions on a daily basis, these will need to become far more dynamic activities. Even if treasury does not use real-time payments, collections could be received at any time of the day or night, incurring risk and liquidity implications.

1.1 Global instant payments landscape

Real-time or instant payments are proliferating globally as regulators and central banks seek to reduce friction in payment processes and enhance the customer experience of banking.

At a domestic level, countries, such as the UK (Faster Payments) and Singapore (FAST), have taken an early lead, but there are now more than 40 domestic schemes at varying stages of development and implementation worldwide (see Figure 2), notably including both the eurozone and the US.

In November 2017, the Single Euro Payments Area (SEPA) Instant Credit Transfer (SCT Inst) was launched with the aim of enabling consumers and businesses in all 34 countries of the SEPA zone to make instant cross-border payments. The scheme had been adopted by more than 26% of European payment service providers (PSPs) by July 2018,¹ allowing their customers to make and receive instant euro credit transfers both within and across national borders (Figure 1).

It is not only domestic and pan-European payments that are accelerating. A variety of cross-border payment initiatives now exist, most notably SWIFT's global payment innovation (gpi) and blockchain-based Ripple. In July 2018, SWIFT reported that more than 180 banks – covering more than 100 currencies and 450 country corridors – had signed up to SWIFT gpi.³

Figure 1: Tracking SCT Inst progress

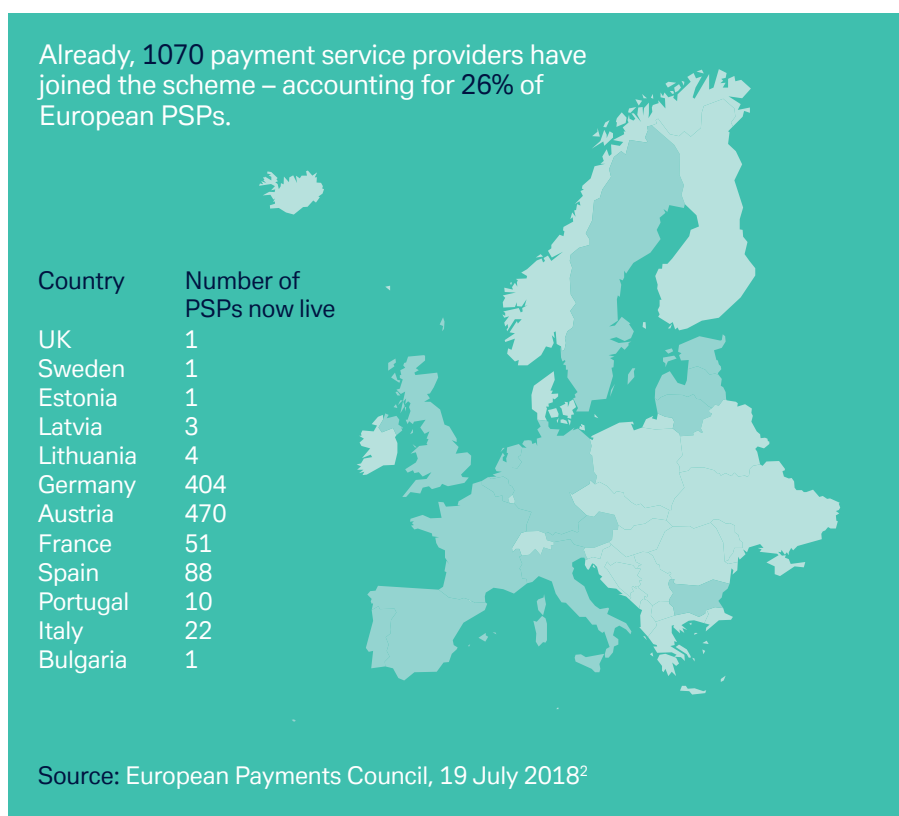
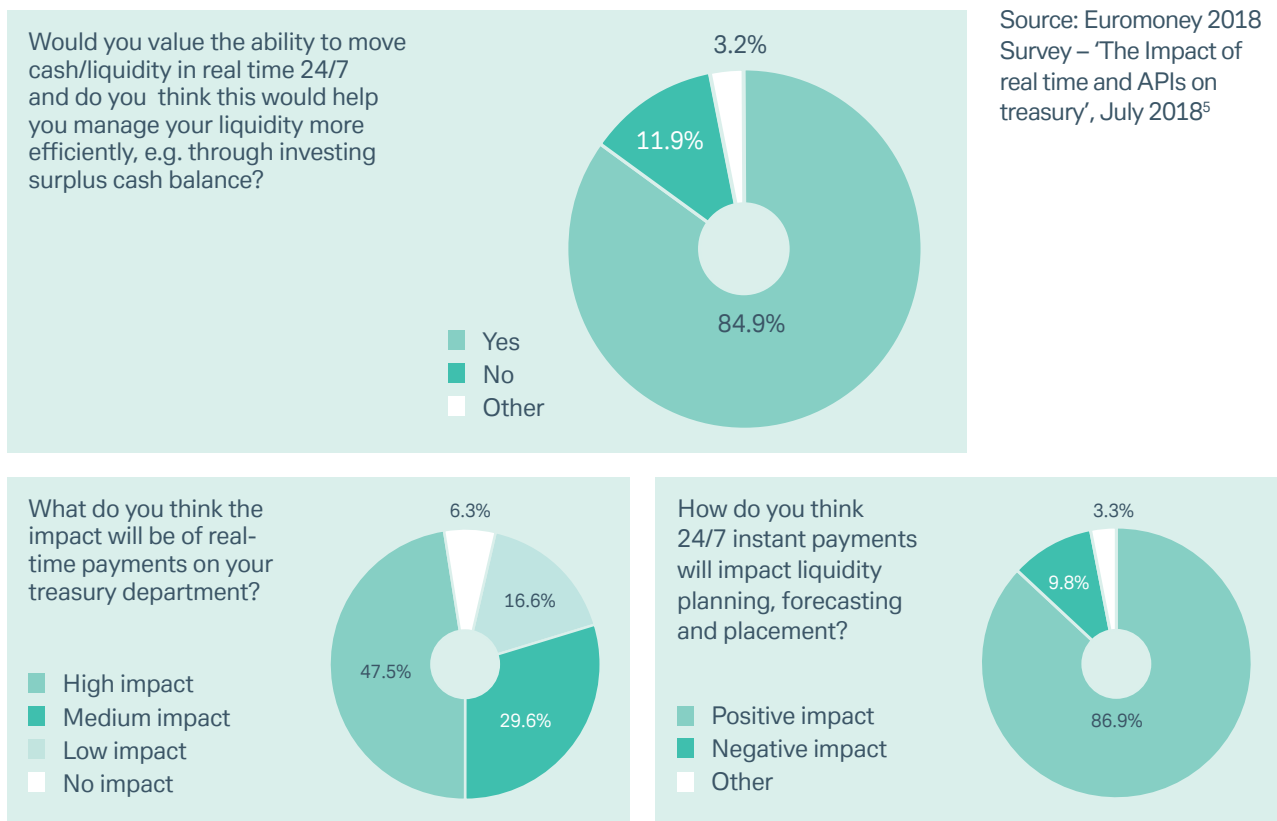




Figure 2: Current status of real-time payments schemes around the world



Figure 3: The impact of real-time and APIs on treasury



In major corridors, such as that between the US and China, SWIFT gpi already accounts for almost 50% of payment traffic.

The immediate proposition of SWIFT gpi is same-day – rather than real-time – payments, together with the ability to track payments throughout their lifecycle. While the speed of payment is likely to accelerate quickly, there are still questions around compliance with sanctions screening and anti-money-laundering regulations. Even so, the ability to make and collect same-day cross-border payments, and to track them throughout their lifecycle, is a major step towards the real-time treasury vision.

1.2 Benefits of instant payments

Although many instant payment schemes have originated with the needs of consumers in mind, the value and potential implications are just as profound for corporations, particularly for incoming payments.

A 2018 survey undertaken by Euromoney revealed that 86.9% of the 233 global treasurers surveyed now recognise the positive impact that instant payments could have on their departments (See Figure 3).⁶ Initially, the low limits on individual payment value, and the efficiency with which many corporations have already structured their payment processes, suggested that existing instant payment schemes would offer little value to corporations. However, as the value limits on instant payment initiatives increase (see Figure 4), and the potential liquidity and risk benefits of real-time payments and collections become clearer, the value proposition is becoming more compelling.

Figure 4: Rising limits

UK's Faster Payments Scheme: The UK has already increased its maximum limit of £1,000 per individual payment in 2008 to £250,000 in November 2015. This limit is due to rise again to £1m.⁷

Belgium: Instant payments are due to go live in November 2018 with no maximum limit on the value of individual payments made within Belgium. A maximum amount of €15,000 will still be applied for payments made to other SEPA countries.

The Netherlands: Instant payments are due to go live in May 2019, with no maximum limit on the value of individual payments within the Netherlands.

SEPA SCT Inst: Although the scheme currently only supports real-time payments of up to €15,000, the SCT Inst Rulebook stresses this limit is only an "initial" limit and can be changed for a higher maximum amount if individual banks agree either bilaterally or multilaterally.⁸

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While the current upper limit of €15,000 on instant payments in Europe is restrictive for companies of our size, we recognise that this limit will increase and anticipate a number of benefits for our business

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*Carola Schmitz-Becker, Vice President,
Corporate Treasury, Deutsche Post*



Instant impact: key benefits of instant payments and collections

| Payments | Collections |
|--|---|
| <p>'Just-in-time' payments: The ability to make payments instantly reduces friction in payment processes by eliminating the concept of cut-off times and the need to build clearing time into payment schedules. Just as many corporations adopt 'just in time' supply chains, this can now be mirrored in payment processes, enhancing working capital, allowing more precise funding, reducing costs and maintaining facility headroom. The elimination of trade friction and delays also has significant implications for supply chains.</p> | <p>Reducing debtors and enhancing working capital: Real-time payments can make credit collection processes more dynamic and effective, and customers can no longer make the excuse that the payment is en route. They can also help shorten collection cycles, facilitating faster collection following resolution of disputes. This enhances working capital by reducing funding costs and increasing investment returns.</p> |
| <p>Supplier reach: Companies can use real-time payments to access a wider supplier base without incurring additional supplier risk through digital 'cash on delivery'.</p> | <p>Enabling emerging business models: One of the biggest advantages of real-time collections is the ability to develop and engage in new digital business models and access a wider customer base without taking on additional customer credit risk.</p> |
| <p>Customer service: Companies can provide a more responsive service to customers – including faster refunds, incentive payments or insurance pay-outs.</p> | |

How these benefits play out depends on a company's industry and business model. The most cited use cases for instant payments are found in the retail sector, but there are other clear benefits to be found in the corporate sector – consider the examples overleaf.

Example use cases for instant payments

The tobacco company



Tobacco companies typically sell via distributors. In order to manage their exposures, they allocate a credit limit to each distributor. When one of the distributors hits its credit limit, it makes a payment to the tobacco company to free up credit and enable it to keep distributing tobacco.

This payment is typically made via ACH, which can take up to a day to clear. In the meantime, the distributor cannot buy any more tobacco to sell on and the tobacco company cannot make any more sales to that distributor – potentially costing both companies a day of sales.

With instant payments, the distributor can settle invoices as soon as funds are available, enabling both the tobacco company and the distributor to grow sales faster.

The drinks company



Global drinks companies selling to cafes, bars and restaurants are a classic example of the interchange between big suppliers and small buyers. On the one hand, global consumer brands are under pressure to grow sales while managing credit risk. On the other hand, independent food and drink outlets need to balance limited access to funding and credit with the need to have sufficient stock to meet rapidly changing demand.

With instant payments, cafes and bars will receive funds from customers in real time. They will then be able to use those funds to purchase and pay for additional stock in real time to meet unexpected peaks in demand. The result is a win-win for both the big supplier and the smaller buyer, as both benefit from sales growth and improved working capital management.

The oil refinery



One of the biggest pain points for treasury back offices in the oil and gas industry is the waiting – waiting, say, for confirmation from the beneficiary bank that the multi-million-dollar payment for a shipment has been received. Without this confirmation, the oil cannot be offloaded and run through the refinery – resulting in a loss of productivity and profits.

While SWIFT GPI is significantly enhancing track-and-trace capabilities for international payments – and indirectly reducing settlement times in the process – the anticipated expansion of instant payments to high-value and even cross-border settlements, should enable back offices to confirm successful settlements much more quickly.

2. Open banking and APIs

The drivers for, and opportunities to deliver, a truly real-time treasury go beyond payment instruments

The banking industry is currently moving away from a largely 'static' model, characterised by structured, inflexible processes, to embrace new possibilities created by the rise of "open banking" – and these have the potential to compound efficiencies for the real-time treasury.

By using APIs, or application programming interfaces, treasurers can access banking services and data, potentially in real time, through any interface they like: their own, a third party's or a bank's. As a result, open banking gives treasurers the opportunity to access new, value-added banking services delivered by third parties – building on the benefits of real-time payments and generating a range of efficiencies that are still being explored.

Treasurers can even build banking services and data directly into their own applications and platforms, and embed new capabilities into solutions provided to customers or suppliers. A strong example of this is the recently announced SWIFT gpi for corporates pilot, with the ten corporate participants integrating SWIFT gpi messages directly into their TMS/ERP systems.⁹ As treasurers weigh up the opportunities, the question they must answer is this: how do they want their new treasury system – their real-time treasury – to look and function? And who do they want to build it with?

2.1 Drivers of open banking

Open banking is a global phenomenon, although the drivers and speed of adoption may differ across countries and territories. In most cases, regulatory pressure plays a major role.

In Europe, for example, the second Payment Services Directive (PSD2), which stipulates Regulatory Technical Standards for customer authentication and common, secure open standards for communication, obliges banks to open up the data that they hold on behalf of their customers to licensed third parties. These include Account Information Service Providers (AISPs), who can offer customers consolidated information on their accounts held with multiple payment service providers, and Payment Initiation Service Providers (PISPs) who can, under instruction from the account owner, initiate online payments – known as "push payments" – directly from the payer's bank account to the beneficiary (see Figure 5).

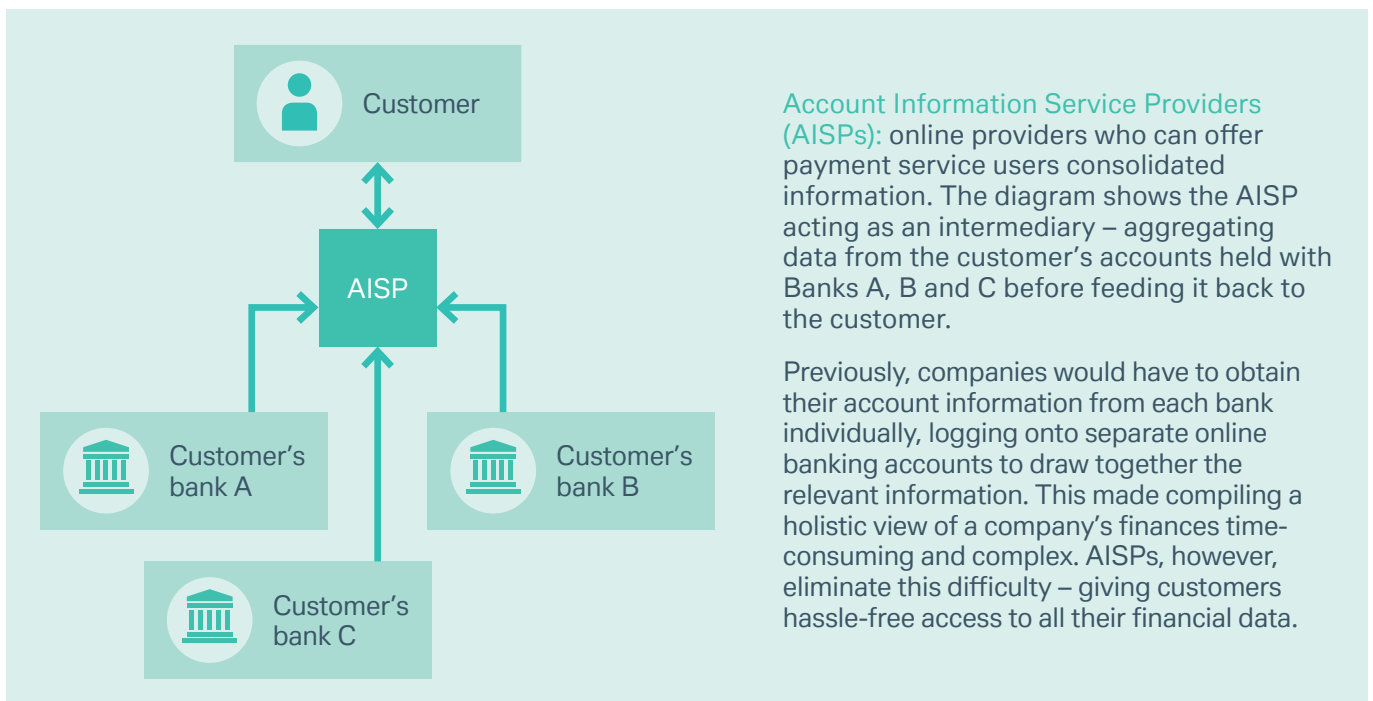
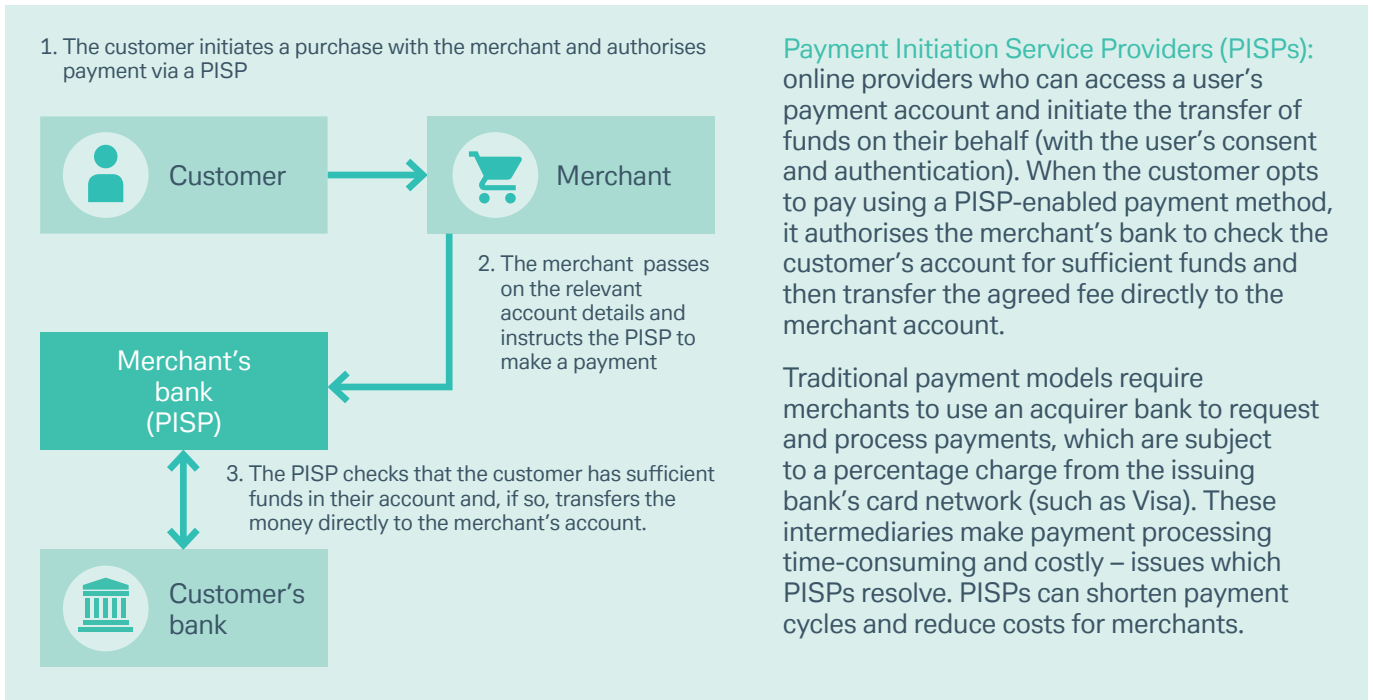
Outside Europe, similar initiatives include the Hong Kong Monetary Authority (HKMA)'s proposed Open API framework (for which a consultation paper was issued in January 2018), and the Reserve Bank of Australia's final open banking review report, published in February 2018.¹⁰

What are open APIs?

In simple terms, open APIs allow one piece of software to interact with another, enabling authorised third-party developers to build products and services on top of software applications to access data or process transactions.

APIs are already familiar to every smartphone user, as weather apps, timetables, restaurant and theatre bookings, amongst many others, are enabled through APIs. In China, for example, as payment services become more closely connected into social media and retail platforms, such as WePay and Alipay, payment services are becoming an inextricable element of the user experience. The use of APIs allows this integration to become seamless, a key enabler of emerging digital business models.

Figure 5: PISPs and AISPs in action





2.2 The value of open banking for corporate treasurers

Open APIs are a catalyst for processing information and transactions in new and more efficient ways. Retail banking is the focus of many open banking initiatives, but the value proposition in corporate banking is also compelling. Open APIs are also prompting banks to be more collaborative with the wider financial ecosystem and to harness APIs to offer new value-added services to corporate clients.



At Deutsche Post, we are now exploring how APIs and PISPs could be used to help us initiate payments from our accounts with Deutsche Bank in Italy, Spain, Portugal and Germany, to our primary liquidity bank situated in the Netherlands



*Carola Schmitz-Becker,
Vice President, Corporate Treasury, Deutsche Post*

The online retailer



Online retailers typically receive payments via bank transfer and through debit and credit card payments.

For payments made via bank transfer, the retailer incurs a credit risk if goods are dispatched before payment is received. With instant payments, settlements will occur in seconds, significantly reducing the credit risk for the retailer.

For credit and debit card payments, retailers typically wait two to three days for settlement via their merchant acquirer or payment service provider. With the introduction of instant payments, service providers such as Mastercard and Visa are beginning to introduce faster settlement options.

However, it's when instant payment legislation is combined with open banking legislation and API technology that retailers can begin to see true transformation happening in the payment landscape.

In this scenario, the buyer chooses to pay via direct "push" payment, rather than by debit or credit card. This entitles the retailer's bank to transfer funds directly from the buyer's account to the retailer account. This process – executed via an instant payment format such as SCT Inst – would eliminate the settlement period of two to three days and potentially avoid the transactions costs incurred when using traditional card rails.

In this way, the retailer has the opportunity to not only reduce working capital and funding requirements by two to three days, but also to increase profit margin by the 2% to 3% typically charged for credit card transactions.

2.2.1. Examples of value-added services through open APIs

1. Real-time push payments:

Businesses that currently collect a large proportion of their payments from debit- or credit-card transactions stand to benefit from so-called “push” payments. These use the PISP model described in Figure 5 to transfer funds directly from the buyer account to the seller account – saving time and cost by bypassing traditional card acquirer processes and fees. This approach can be seen in Deutsche Bank’s pilot programme, developed in partnership with the International Air Transport Association (IATA) and announced in May 2018.¹¹

2. Real-time balance and transaction reporting:

Today, corporate treasurers capture banking data through proprietary connections with each bank, or through a multi-bank connectivity solution such as SWIFT. Using multiple banking systems adds cost and risk, particularly as systems typically have different user maintenance and security tools, and may be managed by different parts of the business. Whether accessing data through proprietary channels or SWIFT, this information is generally in the form of MT940 (end-of-day statement) or MT942 (intra-day statement) messages. Delays in receiving bank balance and transaction information can compromise treasurers’ ability to manage liquidity effectively, leading to higher borrowing costs or lower investment returns, and potentially credit risk by leaving cash on account overnight.

Under the provisions of PSD2, corporates will be able to use a single AISP to gain an aggregated, potentially real-time view of balance and transaction information across accounts held with multiple banks. This eliminates the cost, risk and inconvenience of using different proprietary systems, whilst also offering value beyond the use of SWIFT through more timely access to data. By accessing balance and transaction data through a single channel, and in a single format, this can be integrated more seamlessly with internal systems for cash and liquidity management and account reconciliation.

3. Streamlined liquidity consolidation:

Similarly, the use of PISPs under PSD2, could also be used (alongside instant payments, and AISPs) to enable corporates to better manage their liquidity. In particular, they could achieve the benefits of cash pooling across multiple banks by transferring funds between local bank accounts and the corporate’s ‘target’ treasury account.

4. Enhanced cash-flow forecasting:

By using application programme interfaces (APIs) to access both bank and internal systems, treasurers have the potential to significantly improve the timeliness, consistency and completeness of cash-flow forecasting information, particularly in combination with robotic process automation (RPA) and artificial intelligence (AI). According to the Euromoney survey, 57% of corporate treasurers say that they plan to use APIs to support their cash forecasting and cash concentration processes across multiple banking partners.¹²



Moving forward, I would like to see a solution that could offer me a real-time, consolidated view of my balance across multiple accounts. I would prefer to work with an independent party on the development of such a solution, and for all twelve core banks to participate



*Boris Jendruschewitz,
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3. Real-time liquidity

One of the biggest effects of the shift to instant or real-time domestic payments and collections, and faster cross-border payments, is the impact on liquidity

According to the Euromoney survey, 86.9% of respondents believed that instant payments will have a positive impact on liquidity planning, forecasting and cash investment.¹³ Nearly 50% of Euromoney's surveyed treasurers identified liquidity management as the area with the most pressing need for automated functions, which, when combined with real-time capabilities, could enable corporates to reduce their working capital buffer and borrowing requirements – instead putting funds to work on new investment opportunities.¹⁴

Currently, funding and investment instruments are structured on a daily, weekly or monthly basis, with interest calculated on a daily basis. The ability to make and receive payments 24/7 forces a change in this model. Inevitably, we are likely to see the emergence of intra-day liquidity with interest calculated hourly or even minute by minute. However, while real-time funding and investment solutions are in their nascent stages, liquidity management solutions are already available and have a major role to play in the real-time treasury of today and of the future.

Section 2.2 explained how the combination of instant payments, open banking and APIs could enable real-time multi-bank cash concentration. In this section, we look at other developments that enable real-time liquidity management.

3.1 Intra-day cash pooling

As real-time payments and collections gain traction, and treasurers seek to support the global liquidity and risk management needs of the business more proactively, the demand for intra-day cash pooling is growing. While most cash-pooling arrangements, such as zero-balancing and target balancing, involve an end-of-day sweep between the master and participant accounts, intra-day cash pooling allows for multiple sweeps during the course of the day. This ensures that cash is centralised at a group level more dynamically, potentially reducing borrowing costs and optimising interest returns.

Case study

Clarity delivered instantly: Deutsche Post and intra-day sweeping

Deutsche Post holds euro and sterling accounts with Deutsche Bank, covering its activities in Germany, Portugal, Spain and the UK, with its main treasury account located in the Netherlands with a third-party bank.

Until recently, funds held in the various Deutsche Bank subsidiary accounts were swept into the master account at the end of each day, with funds available at the third-party bank on the following business day. While this enabled Deutsche Post to consolidate its liquidity from day to day, there was a delay in the company's ability to access liquidity and invest funds in the marketplace.

With this in mind, Deutsche Post partnered with Deutsche Bank to implement an upgraded zero-balancing system that carries out intra-day sweeps from local subsidiary accounts into the master account. This offers the treasury an instant and clear overview of its aggregated liquidity positions across countries – hugely valuable for identifying and deploying free cash, as well as producing accurate cash-flow forecasts.

Deutsche Post is also looking into the possibility of using other innovations to build out a more real-time treasury. For instance, it is interested in using APIs to pool information from Deutsche Bank and its other banking partners around the world to establish a comprehensive, global picture of its cash positions, inclusive of all banks, geographies and currencies. At the same time, it is exploring the potential of virtual accounts as a means of freeing trapped liquidity through instant cash concentration.



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What is Deutsche Post?

Deutsche Post DHL Group (Deutsche Post) is the world's largest mail and logistics company, managing more than one million customer interactions per hour across 220 countries and territories, and generating revenues of more than €60bn in 2017.



We are very interested in the idea of operating virtual accounts for our European cash pools. This would play nicely into our existing zero-balancing approach – ensuring that subsidiaries receiving instant payments outside business hours do not trap cash in low-yielding accounts, and removing the need for a year-end bank confirmation. Crucially, however, we need our bank to provide a wholesale solution - and one that doesn't require us to notify our buyers and suppliers that our account numbers have changed



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Deutsche Post has a strong, forward-thinking strategy when it comes to treasury. Its new system gives it vastly improved visibility over its cash positions in both euros and sterling, and enables it to improve interest returns by sweeping collected funds before end-of-day cut-off times

*Walter Genter,
Senior Sales Cash
Management at
Deutsche Bank*



3.2. Instant cash concentration through virtual accounts

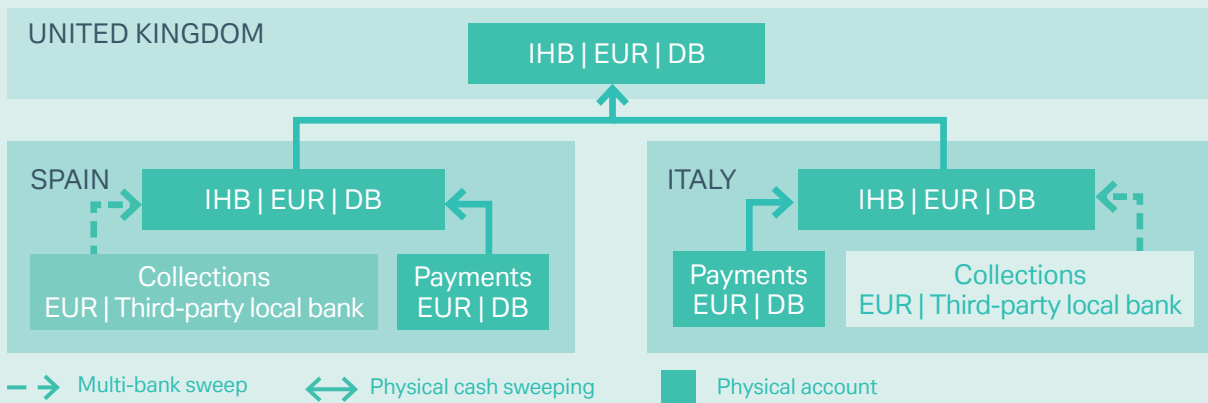
'Virtual' account solutions are emerging as a complement to 'collection on behalf of' (COBO) programmes, which treasury departments globally are increasingly making use of. COBO and 'payment on behalf of' (POBO) services allow treasurers to channel collections or payments through a single account on behalf of group companies – meaning individual entities may no longer need to manage individual holding accounts.

Under a COBO arrangement, treasuries benefit from being able to centralise liquidity into one account, without needing to set up cash-pooling arrangements. However, while bank relationships and account management become far easier, reconciling incoming flows into a single account can be problematic. Customers may be obliged to pay into an overseas account, incurring cross-border payment fees and making them feel disconnected from the entity they do business with: virtual accounts present a compelling solution.

Figure 6: Virtual accounts vs. physical cash sweeping

Before

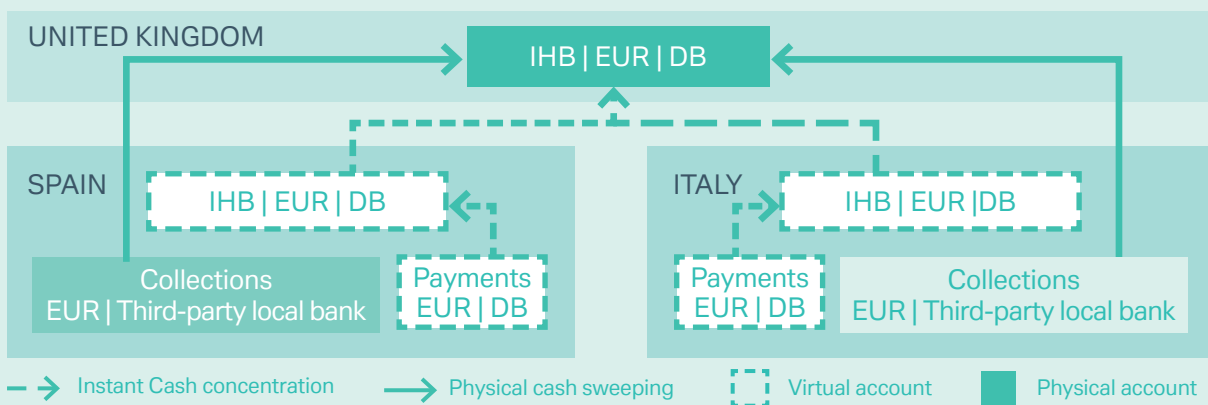
Business accounts held across different geographies have their funds swept into the country's domestic in-house bank (IHB) account, before being swept again into a master account held in the United Kingdom. The intra- and inter-bank processing required is inefficient in terms of speed and cost, and reduces companies' visibility over their funds.



After

Collections received via virtual account numbers are fed directly into the UK-based master account. Functionally, the local, individual accounts remain, but in a 'shadow' capacity. All of the virtual account numbers are associated with one physical, master account, eliminating the need for intra-bank cash sweeping and providing full visibility over cash positions.

Inter-bank sweeps are still required from local collection accounts, but funds are swept directly into the UK master account – with no further intra-bank sweeps. This reduces administration, saving time and reducing costs.





Effectively shadow, or ledger, accounts, virtual accounts are linked to a single physical bank account. Companies can decide whether to set up one virtual account per customer, per entity or per business line – and payments made through the virtual account numbers can be automatically consolidated into the business' central account without need for cash pooling. The treasury will benefit from a functional reduction in external accounts, while gaining immediate visibility over and access to cash. The virtual account solution also improves customer experience, as corporates are able to provide customers with local account details.

Virtual accounts enable real-time cash concentration, through rationalisation of bank accounts and elimination of cash sweeps. But this is a single-bank solution, as the virtual account number must link to a physical bank account.

Traditionally, multi-bank cash concentration structures are inefficient due to early cut-off times. Yet by combining open banking, instant payments and API technology, treasurers can view and manage balances across multiple banks in real time, as illustrated in Figure 6.

3.3. Real-time in-house-bank accounting and reporting

Virtual accounts facilitate automatic reconciliation and account posting both to the in-house bank intercompany ledgers and to accounts payable and accounts receivable ledgers. The virtual account number can be used as a field to help define rules for automatic reconciliation and allocation of incoming flows, and as a marker for posting associated intercompany entries. This simplified, transparent framework will be instrumental in real-time treasury, as treasurers increasingly rely on automated, real-time processes to manage liquidity and risk more dynamically.

On the other hand, Virtual Ledger Manager (VLM) is the tool used to manage intercompany accounts, including intercompany interest and intercompany balances. Using virtual accounts helps enable the automated posting to the correct intercompany account in the VLM. In addition, the VLM enables real-time transfers between intercompany accounts without moving cash.

The VLM model can also support corporates that work with multiple banking partners. In particular, banks can offer their clients new multi-banking VLM platforms through which clients will be able to leverage one VLM platform for all their virtual account needs. By embracing multi-banking, VLM takes the real-time treasury concept, with dynamic concentration of cash, and enables businesses to reconcile flows automatically at a global level – delivering particular value to multinational corporations with global operations.

4. Real-time FX management

For treasurers operating across borders and currencies, the value of real-time payments, collections and liquidity management will be limited unless foreign exchange exposures can also be managed in real time

4.1 Real-time currency conversion

Currently, there are significant differences in the way that banks handle the FX element of a cross-border payment transaction.

According to the Euromoney survey, 66.8% of respondents would implement a solution that offered automated 24/7 conversion based on real-time FX rates of inbound and outbound foreign currency payments if it were available.¹⁵ In fact, innovative solutions are already helping to revolutionise the way FX transactions are executed by connecting the payment and FX element of the transaction, and ensuring conversions are processed automatically and in real time.

4.2 Real-time FX exposure management

In addition to cross-currency payments, identifying, monitoring and managing FX exposures is a core treasury task given the material impact that FX volatility can have on corporate earnings.

The first step is to achieve real-time visibility of FX exposures, which has implications on the way that information flows from the business as well as from banking partners.

Second, the ability to analyse, identify and hedge on a dynamic basis, and therefore minimise both the value of exposures and the impact of intra-day volatility, will become increasingly important as a wider spectrum of companies expand internationally. By

How Deutsche Bank does real-time FX

Deutsche Bank's corporate FX offering connects payments directly with the bank's FX operations to offer automated 24/7 conversion of both inbound and outbound FX payments in over 120 currencies, based on real-time rates, and with date and time stamps for each transaction and conversion. This offers benefits in a variety of scenarios, including:

Reduction in bank accounts

Treasurers may decide that they no longer need to maintain bank accounts in their smaller currencies, therefore reducing FX risk and the bank account administration burden.

Improved supply chain relationships, reduced costs

In regions such as Asia and Latin America, trade is usually conducted in US dollars or other "hard" currencies. In the past, local suppliers, that did not hold an account in these hard currencies, or were unable to manage the costs and risks of doing so, had to pay their bank to convert incoming invoices into their local currency. They would then have to pass on this cost to their customers by building them into the price of their goods and services. However, by leveraging Deutsche Bank's FX services, a company can pay a supplier in its local currency without having to open a foreign currency account. This enables the company to negotiate better conditions for the supply of goods and services as the FX component is eliminated. Our clients tell us they are making savings of 3–5% on the invoice amount using this solution, which has significant commercial implications when applied across multiple suppliers and currencies.

Reducing the FX administration burden

Many treasury functions choose to manage FX using a materiality threshold: for example, only managing amounts greater than €100,000 or equivalent. However, these amounts can become material in highly volatile currencies, particularly across a number of currencies. Deutsche Bank's automatic conversion capabilities enable treasurers to manage these smaller exposures without adding to the administration burden.



doing so, treasurers can minimise the negative impact of FX exposures, and the associated financial and reputational risk.

This is already achievable through Deutsche Bank's DB Maestro, an FX automation workflow platform. Maestro creates bespoke risk management solutions in real time using a sophisticated rules-based engine. The platform aggregates data from multiple sources, including enterprise resource planning (ERP), treasury management systems (TMS) and other internal systems to calculate treasury's net currency exposure and apply user-defined rules to execute tailored hedges automatically.

However, to take full advantage of this, treasurers must ensure their internal booking, sales and ERP systems register exposures as quickly as possible (preferably as soon as they are generated) and then feed this information as quickly as possible into their bank's FX risk management platform.

That said, the move to registering and feeding exposure data to the platform in real time can be a gradual process. Treasurers can start by using the data they already have available, in whatever frequency their systems can support, to begin executing hedges in a matter of seconds – even if they are not yet responding to exposures in real time. As their internal systems and processes are refined, they can adapt the rules and parameters they have with their bank to inform faster and more comprehensive hedges – until eventually the process is ongoing and fully real-time.



All cross-currency payment transactions have an FX conversion element. However, often the FX conversion and booking process is disconnected from the rest of the transaction so the corporate treasurer cannot see what foreign exchange rate was applied and when



*Jeff Smeeton, GTB FX4Cash
EMEA Head at Deutsche Bank*

5. Robotic Process Automation and Artificial Intelligence

Real-time payments and APIs create the “mechanics” behind real-time treasury processes. However, treasury does not add value simply by processing transactions, but rather by analysing situations and making decisions to optimise liquidity and risk management, and by supporting business strategy

As the corporation itself increasingly conducts business in real time, the demands on treasury to make timely decisions based on real-time information are also increasing. New technologies, such as robotic process automation (RPA) and artificial intelligence (AI), are helping treasurers to meet these demands whilst reducing costs and creating ways to offer additional value. This leaves the treasurer free to concentrate on strategic decisions - only intervening to deal with exceptional cases.

5.1 Robotic process automation and artificial intelligence: the difference

RPA refers to the use of software “robots” to mimic human actions. The robot uses business rules and predefined logic to autonomously execute multiple processes and tasks, with human involvement only required in exceptional cases.

In contrast, AI involves the simulation of human intelligence by machines. Machine learning is a subset of artificial intelligence that uses statistical techniques and trial-and-error calculations to give computers the ability to “learn” – to access data and use that data to progressively improve performance on a specific task.

5.2 Use cases in treasury

5.2.1. AI in receivables management

Managing credit and collections effectively is crucial for improving working capital metrics, reducing bad debts and customer credit, and minimising the cost of administration. To this end, companies such as US-based HighRadius, Receivable Savvy, and Germany’s collectAI are now using self-learning solutions to provide greater intelligence in receivables management, from setting data-driven customer credit limits to prioritising and identifying the best method to contact debtors.

Other systems, such as YayPay, look at a customer’s payment habits and then apply machine learning to predict the payment date, improving cash-flow forecasting and liquidity planning, and enabling credit and collection teams to make processes that are more responsive to individual customer payment behaviours.

These tools also use AI to help increase automatic reconciliation rates and cash allocation by learning and refining rules based on data received from different banks, systems and previous manual interventions.

5.2.2. RPA/AI in accounts payable

Although e-invoicing and the use of electronic invoice portals are becoming more prevalent, many companies still receive invoices in hard copy or by email. This means transferring invoice data to the accounting or payments system and matching the



invoice against a purchase order – a process that requires significant manual effort and adds to the risk of error or fraud. Manual input of invoice information also adds to the risk of error or fraud in payment processes.

RPA offers the ability to automate the retrieval, extraction and input of invoice data, validating individual invoices against supplier lists, and reconciling them with the relevant purchase orders, so that users deal only with exceptions.

5.2.3. AI in cash-flow forecasting

One of the most compelling use cases for RPA and AI is in cash flow forecasting, which remains a critical challenge for treasurers. According to PwC's Global Treasury Benchmarking Survey, 75% of treasurers still struggle to produce an accurate cash-flow forecast at a given point in time, let alone in real time.¹⁶

Financial technology companies such as CashLab, Taiga and Cashforce, however, are now using rules-based logic to collate, process and visualise large volumes of data extracted from multiple internal and external sources and layer on different factors to create a cash-flow forecast. These factors can include: the timing of payment runs; recorded customer payment behaviour, historical trends and patterns/seasonality, work in process, rebate schedules, and factoring parameters. These platforms also enable users to simulate a series of alternative future cash-flow scenarios, and immediately see the impact of changing key variables (such as the historic payment behaviour) on future cash flow.

While rules-based cash-flow forecasting is not new, AI tools can bring together far larger data volumes than many previous systems, such as historic data, and learn and refine rules and recommendations over time, based on forecast accuracy. This approach can better highlight risk in the forecast, and identify optimal liquidity management strategies.



6. Realising the real-time treasury

While a fully real-time treasury remains a vision for the future, its building blocks are already in place, with the instruments, solutions and technology that real-time treasury will rely on already proven and in use

As treasurers seek new ways to support and partner the business, and fulfil their liquidity and risk obligations, they should be looking to take early advantage of some of these new opportunities, whether building banking services into their platforms using APIs, leveraging AI to enhance risk analytics and forecasting, or pioneering just-in-time payments.

The immediate value of, and ability to realise, the real-time treasury vision will vary across industries and individual organisations, depending on their scope of activity, commercial and financial drivers, and technological sophistication. However, treasuries will inevitably, incrementally, be forced to operate in real time. Although there are operational and cultural implications, the move to real time will allow treasurers to partner the business in new ways and add demonstrable value to the organisation.

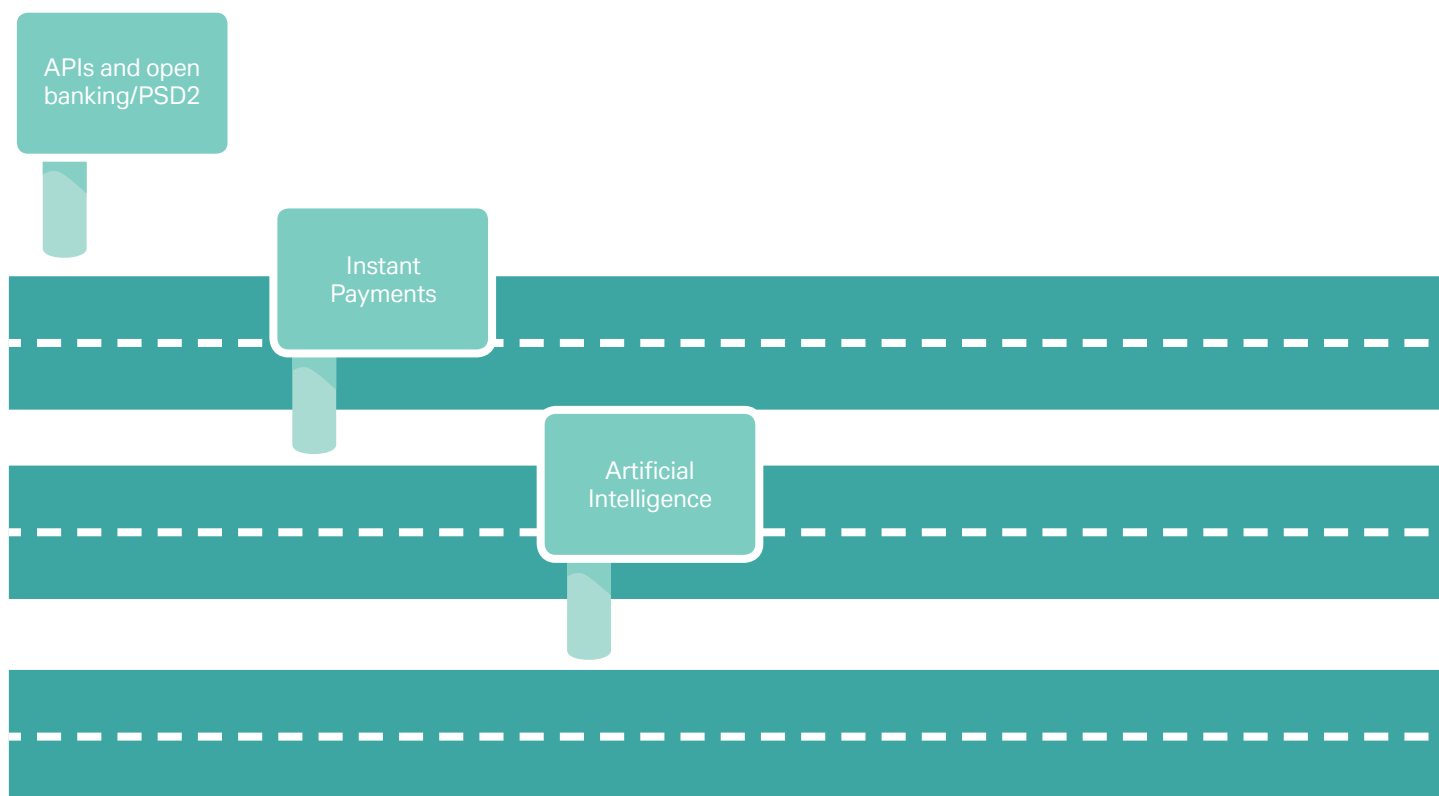
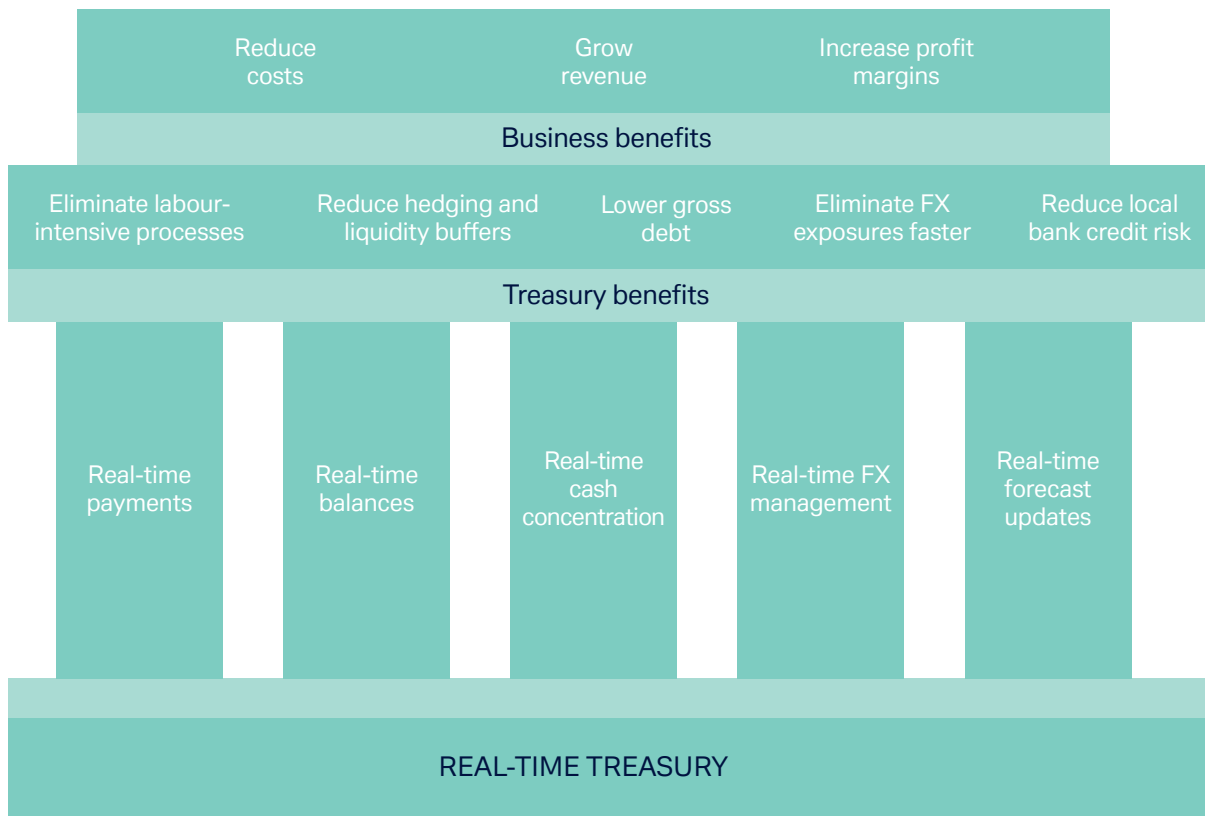




Figure 7: Assessing the benefits of a real-time treasury



References:

- 1: See <https://bit.ly/2utjGRU>
- 2: Ibid.
- 3: See <http://bit.ly/2OkJ4m4>
- 4: See <http://bit.ly/2LoukUJ>
- 5: See Euromoney report “Treasury Non-Stop: Excitement builds for real-time” on the impacts of real time and APIs on treasury, published July 2018, p2
- 6: Ibid, p2
- 7: See <http://bit.ly/2Lq5Af2> for more information on the UK’s faster payments scheme
- 8: See <https://bit.ly/2xazXA2> for SCT Inst Rulebook
- 9: See <http://bit.ly/2Lm6E4h>
- 10: See <https://bit.ly/2EHmZIR> for more information on the Hong Kong Monetary Authority’s proposed open API framework and <https://bit.ly/2x8ubPd> for more information on the Reserve Bank of Australia’s Open Banking Review Report
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- 12: See Euromoney’s 2018 report “Treasury Non-Stop: Excitement builds for real-time” published July 2018, p6
- 13: Ibid, p3
- 14: Ibid, p1
- 15: Ibid, p3
- 16: See <https://pwc.to/2uKjHBI>, p24

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Real-time treasury, at its optimum capacity, will drive enhanced investment returns, working capital and improved management of credit and FX risks, while being more secure and transparent than the paper-based processes that came before it. We are standing on the shoulders of existing technology – and can only foresee as far its capacities allow. But one thing is for sure – amid evolving technology and business climates, regulation and ways of doing business, the transformation of treasury into a real-time operation holds enormous potential.

For more information, and to learn more about how Deutsche Bank can help your organisation take steps along the road to real-time treasury, visit [db.com/cm](https://www.db.com/cm)

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