

CONVISTA:



WHITEPAPER

Real-time treasury in a **connected** world

Treasury Follows the Sun

June 2020

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ABSTRACT

Real-Time Treasury is a trend that will influence the work of a treasurer via a revolutionary approach, enabling us to steer the cash flows of a corporation in the most effective way, to profit from it by the best means possible.

The corporations of today face many different challenges due to the fact, that payment processes in everyday life become increasingly accelerated. This shapes our desires, to which businesses have to adapt in order to stay at the forefront of competition. We will be looking at the work of a treasurer nowadays, what the usual tasks are and in which aspects these tasks fail to deliver efficient cash management. In order to eliminate these failings, real-time treasury is going to be explained, primarily with ConVista's Follow the Sun approach.

A new Real-Time Interest Calculation Method (RTICM) will be introduced, to show how an interest calculation based on real-time rather than days has (dis-) advantages. We will see that this has an immense impact on the future earnings of corporations.

By using Open Banking and Application Programming Interfaces, Robotic Process Automation and Artificial Intelligence, the concept of Real-Time Cash Management becomes feasible. While the implementation of these aspects brings challenges for employees, banks and the corporations itself, the payoffs are tremendously high. The paper explains the technological foundation for a real-time treasury system and the impact on corporations.

An implementation project approach is presented, which enables organizations to reach their goal of a real time treasury system. An implementation across different stages is recommended and the content and deliverables for these stages is described.

Finally the paper gives an overview on developments in the near future and impacts on the daily work of a treasury in a corporation are discussed.



1. INTRODUCTION

In an ever more accelerating world, new demands for businesses arise. The environments modern enterprises find themselves in, are changing and as Peter Drucker, one of the leaders in the development of management education, said, "In times of change the greatest danger is to act with yesterday's logic". Treasury is no exception from this development. The following section gives an overview on current developments and concepts that affect the present and future of the way we define treasury.

1.1 TRANSFORMATION OF THE BUSINESS WORLD

In our New Economy, technologies in all sectors shape our desires, demands and in general the way we live. The times when we waited for the train or in the taxi queue, are over soon. We order our Uber by touching a button from the couch. We do not pay our driver with cash; we use our Apple Pay account, and are able to check our account balance directly in our Revolut or N26 app. These modern information technologies in different sectors of our economy are disrupting existing structures. Changes in consumer behavior lead to new ideas and demands, thus enabling startups to fill these niches before established companies even recognize them. The automotive industry experiences major changes through modern mobility concepts because of the development of the Sharing Economy. Autonomous driving, e-mobility and a newly acquired climate change awareness have led to a demand of fast and innovative approaches to which businesses have had to adapt.

1.2 CURRENT CONCEPTS

With these changes in our economic environment, most evident in accelerated processes and especially payment processes, the need for these concepts spill over into the corporate world. The SEPA SCT Instant Payment scheme already allows 24/7 real-time sending and receiving of payments inside the Eurozone (until recently with a limit of €15,000, which will rise to €100,000 on July 1st 2020). However there is no real instant payment solution in the global corporate treasury context, since only Euro transactions are covered by the scheme .



SEPA Instant Credit Transfer: 2079 PSPs in Europe

Ability to instantly send up to
100,000€ in 10 seconds 24/7

Illustration 1: Single Euro Payments Area

¹ See <https://www.europeanpaymentscouncil.eu/what-we-do/sepa-instant-credit-transfer>

The introduction of SWIFT gpi has brought a new development to payment schemes where transactions can be issued 24/7, not only in the Eurozone but also globally. However, SWIFT gpi's purpose is not real-time transactions but same day transactions, which can be seen as a step towards real-time treasury but not yet its solution. Other issues, which have to be taken into account when looking at SWIFT, are compliance screening and money laundering.

Instant payments offer a wide range of benefits to companies. 'Just in time' is now a possibility, not only for the value chain but for the financial value chain as well. There is no need for cut-off times (at least from a payments perspective) and clearing times in payment schedules. Operations also benefit from instant payments. Delays caused by the need to wait for the confirmation of payments are no longer necessary, benefitting not only the financial supply chain but the value chain as well. Besides payments, collections profit as well. Credit collection can be facilitated, while gone are the times where the banks are (at least apparently) responsible for delays in collection. Overall instant payments can be used to optimize working capital.

2. REAL-TIME TREASURY

As described above, payments and collections will increasingly take place in real-time. The impact on treasury in terms of its supported business models and the requirements for treasury processes and bank communications, will be extensive. There will be enormous effects for working capital and liquidity management as well. In addition, the management of exchange rate risks remains one of the highest priorities for treasurers, which becomes even more important with the emergence of real-time treasury systems.

2.1 CASH-MANAGEMENT

Managing cash in a corporation remains relatively static in an environment, where it becomes more and more important to follow the pace of time. Currently, processes run in pre-defined frequencies such as daily liquidity status reporting or transactions. The control of cash and management efficiency follow these frequencies, which is a distinct issue in the treasury department. Companies rely on knowing cash positions to manage working capital requirements, such as e.g. ordering materials from their supplier. Remittance advices especially represent an issue in cash management, since they depict a transaction which is yet to come but needs to be taken into account by the treasurer, thus leaving immediate cash visibility behind.

Optimization of cash flows, short-term investments and balances, and foreign exchange conversion, remain a long-term goal for treasurers and the ability to deploy cash 24/7 would greatly benefit this. The main tasks for cash management and treasury in general are the provision of an optimal connection of accounts, optimizing liquidity on all accounts, as well as maximizing interest and minimizing



Illustration 2: A Treasurer's Day

A TREASURER'S DAY

Coming into office at 8am, the treasurer of today starts his day by checking and analyzing the daily financial status, as well as processing (manually or electronically) the account statements. Remittance advices are created, reconciled and the financial disposition is adjusted. Two hours into work, exposure is controlled and the settlement of hedging is being supported. Preparing and executing account clearing is being done before heading to lunch.

After lunch, the treasurer works on cash management reporting and liquidity forecasting. Controlling of scales of interest as well as FX exposure comes next, before managing bank communication, trading and accounts.

In the afternoon, the cash manager prepares and executes the regular cash flows for the next day and checks and controls the daily financial and liquidity report before heading home.

transaction costs, in order for the enterprise to stay at the forefront in competition.

The concept of a 24/7 real-time treasury arises exactly from this description. Because of the fact that it would enable the treasurer to do exactly that, in the most efficient and effective way possible. By working together with banks and suppliers, the Corporate Treasurer is able to manage cash, liquidity and cash flows in real-time and, because they are immediately visible, make effective decisions by having all the necessary information at their disposal.

Since all of these processes are interconnected with each other, it is important to develop a system where all necessary applications are integrated to depict a realistic overview of all critical departments and cash flows.

2.2 REAL-TIME LIQUIDITY AND PAYMENTS MANAGEMENT

In this ever more accelerating world, it becomes important for corporations to adapt to the changes in the business environment in a way that enables the management of real-time liquidity and payments. The question which arises is "how can we deploy cash in this 24/7 environment?" to meet demands more quickly. Looking for banks that offer more dynamic real-time investment solutions in addition to payment opportunities, becomes a distinct issue. But not only that: the need for a treasury solution that enables these changes arises.

The SEPA Instant Credit Transfer, which launched in November 2017, and the SWIFT gpi were already big steps in the direction of real-time liquidity, or rather real-time payments. Credit collections have become more dynamic and more effective. As a result, the need for automated, more intelligent functions for liquidity forecasting and cash investment, which shape the work environment of treasury management, has emerged. Visibility, accessibility and predictability of cash and cash flows are among the distinct features and advantages of real-time treasury. Treasurers can pinpoint liquidity more exactly and precisely to reduce buffers in the transactional context. Therefore, the need for a real-time cash management arises. The investment process becomes more automated and dynamic and payment flows are more transparent. For companies that manage treasury activities centrally on

behalf of various subsidiaries, the payments can be optimized through real-time treasury and create maximum transparency. Payment On Behalf Of (POBO) and Collection On Behalf Of (COBO), or generally transactions by a third party at request of the payer, enable a consolidation of banking partners and deliver a high level of transparency and maximum efficiency for financial processes. Because of the consolidation of banking partners, the treasurer can gain a more complete overview of the financial status of the corporation. To complement, virtual accounts (which are linked to a single physical account) are used to channel collections or payments. These accounts can be automatically consolidated into a business' central account, thus paving the way for real-time treasury.

Regarding certain aspects, real-time treasury is going to revolutionize the way liquidity management is approached. By knowing where, when and in which currency cash exists, the life of a corporate treasurer becomes easier while simultaneously enhancing productivity and efficiency. Through increased liquidity, companies have their funds at their disposal earlier to plan outgoing payments more accurately, thereby reducing the workload of liquidity management. The released funds then enable more investments and lead to higher interest and investment income, whereas costs are reduced due to higher degrees of automation and a reduction of manual work steps. Instant payments enable more accurate cash flow forecasting with a cash visibility across countries, while up-to-date reporting of information improves decision making through more accurate data based on real-time information. Real-time liquidity management also enhances forward-looking analysis, therefore allowing to making better-informed decisions.

2.3 FOREIGN EXCHANGE EXPOSURE MANAGEMENT

With the emergence of a 24/7 real-time treasury system, the call for foreign exchange exposure management in real-time arises. One might argue, that the advantages of real-time payments only become apparent for international corporates with multiple currencies when foreign exchange conversion and hedging receive real-time treatment too. FX volatility usually has a direct impact on corporate earnings and not surprising to monitor and manage FX exposure effectively are one of the main tasks associated with treasury departments. Treasurers are increasingly focusing on optimal hedging strategies to manage risk and limit the impact of volatility. Since different currencies are traded in intraday system foreign exchanges, transactions must be automatically converted in real-time. Transactions must also be executed in any currency at any time to achieve real-time visibility of foreign exchange exposures, as well as to establish the ability to identify, analyze and hedge these to minimize a negative exposure. Due to this need, treasurers should be able to dynamically react to their environment instead of following regular frequencies.

Internationalization of the corporate world, high market volatility, regulatory and accounting changes drive the need to manage FX exposure in real-time, forcing treasurers to review and refine their policies more regularly. Real-time treasury then leads to the ability to achieve accurate and complete visibility over FX risks to pursue more flexible hedging solutions.

Currently, FX conversion is usually not connected with the rest of a transaction. This makes it hard to check when exactly a cross-currency payment was executed, as well as what conversion rate was used. Real-time technology would offer a reactive, dynamic solution for this by providing time-, date- and rate-stamps for each



DEFINITION

Follow the Sun (FtS) is a treasury approach, that is connected to the concept of the 24/7 Treasury. At any time of the day, there are open capital markets. With treasury being able to operate without cut-off times, treasury activities can follow the markets instead of the time zone. Treasury activities are moved around the globe, therefore 'following the sun'.

The **Multi-Currency Global Wallet (MCGW)** is an account that collects various payments in all kind of different currencies around the world. The one 'master account', borderless, independent of currencies. A MCGW can be implemented via the use of virtual accounts. The MCGW is used as the main account for the FtS approach, for instant payments and collections around the globe at any time of the day.

transaction while it happens. The approach presented here for a real-time treasury concept contains the "Follow the Sun" treasury approach (FtS), which includes the "Multi Currency Global Wallet" concept (MCGW). FtS describes the approach, where respective time zones of trading centers are followed to ensure a continuous cash flow, a minimization of reaction times and maximization of activities. Organizational structures and processes follow a global evolution. The MCGW is a part of this approach whereby transactions are executed in any currency, at any time by providing a central, global account for different currencies. FX is managed automatically in the MCGW and FX transactions will be automated up to 95% in the FtS approach.

Real-time overview of the current exposure allows a significant reduction of reaction times and FX management can dynamically identify risks, thus minimizing the exposure and intraday volatility.

- Cut off times lead to assets paying interest in certain time intervals (cash flows and assets are not visible immediately)
- Twilight zones are disappearing, profits are realized in intraday trading
- One central, global account (MCGW) for different currencies

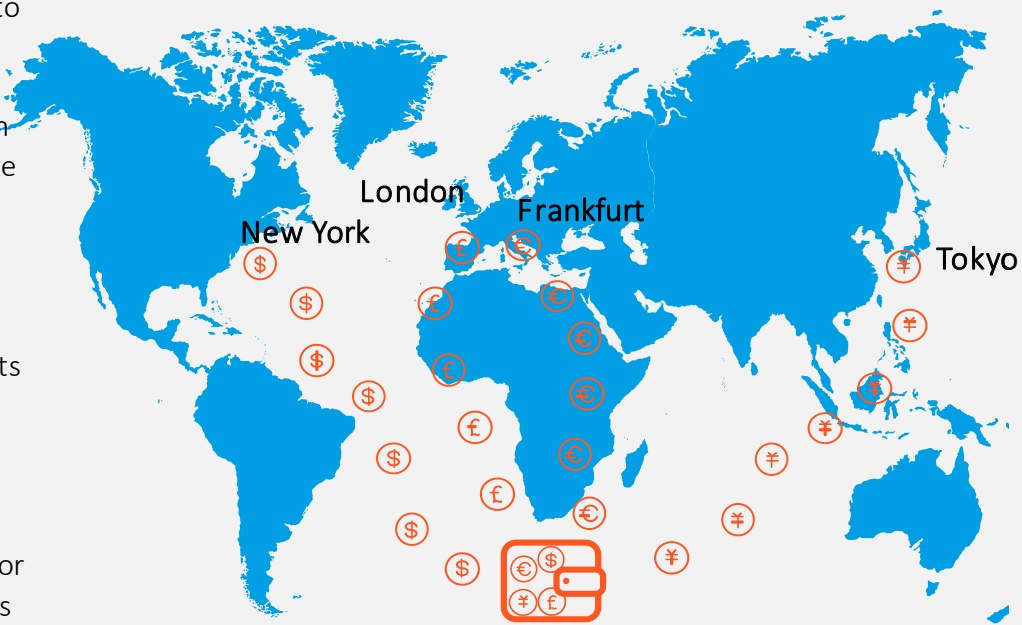


Illustration 3: Follow the Sun approach

In summary, the first step is to achieve real-time transparency of foreign exchange exposures, which affects the way information flows from both the company and its banking partners. Subsequently, the ability to analyze, identify and hedge on a dynamic basis, with the aim of minimizing the value of exposures and the impact of intraday volatility, will become increasingly important as a wider range of companies participate. In this way, treasurers can minimize the negative impact of foreign exchange exposures and the associated financial risks.

While traditionally, batches manage cross-currency transactions and generate significant exposure to rate fluctuations and a lack of transparency of conversion rates, real-time systems will make it possible to configure events to conduct automatic hedges, depending on the treasurers pre-defined risk profiles. This not only results in high-quality hedging with minimal delay, but additionally gives treasurers the freedom to focus on creating value in other areas.

2.4 INTEREST CALCULATION METHOD

After hours, weekends and especially twilight zones are the main reasons for cut-off times in the transactional context. The need for an accelerated real-time payment system is accompanied by never sleeping capital markets: by looking at Tokyo, Frankfurt, London and New York it becomes evident that major capital markets share one common issue: They are located in different time zones. These cut-off times lead to the fact that assets pay interests in certain time intervals (mostly daily) which again leads to the issue of cash flows and assets in the treasury context not being visible immediately. With the concept of a Real-Time Interest Calculation Method (RTICM), a core element of the FtS approach, the twilight zones on the capital markets are disappearing. Because it uses seconds instead of days as the calculation method, money no longer pays interests on a daily basis, but every second, thus enabling treasurers to invest surpluses immediately and carry out its functions without interruption. Profits can be realized in intraday trading - a 24/7 Global Treasury system emerges.

By introducing this concept, the impact of Real-Time Treasury becomes clear and is enhanced. While 24/7 payments and collections make up the core of Real-Time Treasury, the RTICM accompanies the system, by enabling the treasury department to work more efficiently and effectively, since it exactly performs the main task of treasury: optimizing short-term investments, maximizing interest and minimizing transaction costs, while using trading platforms such as 360T which can execute trading in real-time.



DEFINITION

24/7 Treasury is the result of new technologies and regulations that make it possible to execute and settle transactions in real time at any time of the day, anywhere in the world. The conclusion for corporates is that they can now manage all payments and collections in real time instead of managing daily cash positions as in the past. This also has organizational, processing and liquidity implications. Technologies such as RPA and AI make it possible to automate processes so that, for example, excess cash is automatically invested in accordance with a pre-defined strategy and, similarly, real-time cash flow forecasts determine the exact timing and amount of any borrowing required. Cut-off times and after no longer mean the end of activities. Treasury can operate 24 hours a day, 7 days a week.

3. TECHNOLOGICAL ASPECTS

In a world where digitalization has more and more impact on the economy, it is important for corporates to keep up and use efficient technologies. In treasury departments, the opportunities for automation and usage of new technology are increasing. The following chapter gives an overview on relevant technological aspects for the implementation of a real-time treasury system.

3.1 OPEN BANKING AND APIS

APIs and the concept of open banking make it possible to access banking services and data in real-time, therefore paving the way for 24/7 treasury. The EU second Payment Services Directive (PSD2) already pushed banks to give data access to licensed third parties (on behalf of customers of course). It enabled open banking and APIs to enter into the treasury context and offer the opportunity to report in real-time rather than sequenced intraday.

"PSD2 mandates that banks open up their platforms through APIs [application programming interfaces] to payment services providers and account information service providers to be able to initiate payments or provide account information" (Bob Stark).

² see <https://www.360t.com/trading-solutions/market-data/>

SWIFT's global payment initiative, which emerged from PSD2 relies virtually on APIs to provide fast, transparent and traceable cross-border payments to give a real-time overview over transactions. But while this provides only banking information, open banking offers the opportunity to access multiple banking accounts and in combination with Account Information Service Providers (AISP) and Payment Initiation Service Providers (PISP), moves towards real-time automated treasury business.

The connection of SEPA Instant Payments with API technology opens up new possibilities. By using treasury components, corporates benefit from the end-to-end integration of their business processes into the bank and vice versa. Through API, it is possible to replace the batch-based approach in payment transactions and enables real-time processing, which considerably accelerates the processes. Additionally, API functionality allows the banking activity of treasury departments to be managed in real time, directly from their own trusted applications and on every device.

Another important factor of open banking is that banks could actually have access to main accounts, as well as Accounts Payable (AP) / Accounts Receivable (AR) to make credit decisions, consequently enabling higher credibility for the corporation.

The usage of open banking and APIs offers instant payment and collection products that are embedded via API to limit friction in the treasury context.

Open Banking is one of the main drivers to progress in the direction of real-time treasury. Since banks have had to establish APIs, the main technological requirement, having real-time access to your bank account balances, is already available. Furthermore banks have strong interests in the development of such products, well aware of the growing competition of fintechs and the prospect of their potential market share in this area.



DEFINITION

An **application programming interface (API)** is a computing interface which defines interactions between multiple software intermediaries. This means applications or individual modules can communicate with each other and exchange information. In addition, APIs can be used to modularize individual systems, system landscapes and, ultimately, entire platforms into individual components.

The decisive advantage of APIs over existing forms of bank connection is speed. All existing solutions rely on batch processing, which means that transaction-based processing in real time is not possible.



DEFINITION

An **authorized account information service provider (AISP)** provides detailed information on transactions and balances to an account owner, and accesses an aggregated view to their bank accounts via a single place.

A **payment initiation service provider (PISP)** provides the service to initiate a payment transaction on behalf of the customer directly from his account. This means the customers agree to share their bank credentials with the PISP.

Both service providers confirm that they are only accessing the account and are not providing it.

3.2 ROBOTIC PROCESS AUTOMATION (RPA) AND ARTIFICIAL INTELLIGENCE (AI)

RPA and AI can be classified as the mechanics behind advanced real-time treasury; they leave the treasurer time to concentrate on strategic decisions, while making investment decisions based on real-time information, resulting in reduced costs and creating new ways to offer additional value. The distinction between the two technologies can be described as RPAs which are pre-programmed to perform repetitive, manual tasks, whereas AI is able to learn from the usage of a certain process and follow these actions. AI technologies can therefore mimic human judgement and behavior to comple-

ment RPA technologies, which replicate rule-based actions. While RPAs can handle the automation of e.g. transactional flows, AI can use the data to predict future cash flows.

The usage of RPAs enables the treasury department to increase accuracy and efficiency by improving existing processes. In managing multi-currency flows, as well as the automation of transactional flows, RPAs can be applied to pool bank statement information, FX exposure information (and transferring them into a consolidated overview) and collecting cash flow forecasting information. Particularly regarding system upheavals, RPA can be used to replace manual work by using a software robot to drive efficiency.

Optimizing cash management and hedging strategies can become the core tasks of AI in the corporate treasury context. Increasing the quality of cash flow forecasts and enabling an enterprise to sift through data on a scalable basis to perform analytics based on them can be usages for AI. Monitoring credit and operational risk to allow a more predictive management approach will enable treasury to grow further, more efficient and precise. One certain example for the usage of artificial intelligence and machine learning in the treasury context would be the reconciling of prior day bank files with yesterday's expected cash position, which is mainly the first task treasurers have to work on when they come into the office on a Monday morning. Since transaction volumes are so big that it can take hours and multiple people to do that reconciliation, ML can learn from user's manual reconciliation so it will reconcile without human intervention.



DEFINITION

Robotic process automation (RPA) tools automate highly repetitive, work-intensive and manual processes by using software robots to minimize human actions. The robot is strictly doing what he instructed, so no advanced decision making is possible.

Artificial intelligence (AI) makes it possible for machines to learn from experience and performs tasks that typically require human intelligence. AI is capable to manage data quickly, including the capture and classification of data, its integration into large amounts of data and recognizing patterns in the data.

Machine learning (ML) is a sub-field of AI and uses an automated and constantly developing learning process to solve problems. By using large data sets, a machine is able to improve its performance on a task after repeated executions.

In the account receivables process, ML can work as a complement to RPA as they allow automation of repetitive manual tasks. ML can then be used for intricate work and identifying patterns in transactions, to help the treasurer keep an overview of incoming payments without a huge workload. Employees of treasury departments spend much time matching incoming payments with invoices and lose valuable hours trying to find out which payment belongs to which customer. ML and AI take up this problem by learning from the manual correction of the first payment received, for example, if a customer forgets to write down a part of the invoice number. With the next payment, the machine will be able to recognize the patterns and automatically assign the payment. ML can also help treasurers to predict payment dates.

A high level of automation always leads to the question of the impact on employees. Automation does not mean that people will lose their jobs. Digitalization allows for a relocation of tasks. On the one hand, repetitive tasks can be replaced over time, but this in turn creates opportunities for employees to devote time to more interesting and creative tasks. It is essential that employees are also involved in the process. They understand work processes best and can contribute valuable thoughts and ideas.

3.3 DIGITAL CORE AND SAP INFRASTRUCTURE

For digital transformation of the corporation, a digital core represents the center of the IT infrastructure. The most important function of the digital core is to create a functioning IT landscape that is easy to digitize. Furthermore it allows corporates to integrate business process and transactional data from ERP systems with huge amounts of data from different sources to get new insights, such as predicting outcomes or proposing new actions. The concept of it is fairly simple: All applications in the company are connected with each other, which enables the treasurer to get a real-time overview of all critical business processes in sectors such as customer, supplier and workforce processes, as well as Big Data and Internet of Things, without loss of information. A company emerges which is agile, flexible and responsive due to its newly acquired digital core infrastructure. An example is SAP's approach to a digital core. The underlying principle is a SAP conversion based on the SAP HANA in-memory database in addition to SAP S/4HANA and SAP Cloud Platform. The SAP Cloud Platform enables a large part of the integration between the SAP Digital Core, other systems and the application.

The digital core allows an enterprise to combine various technologies and is an important step on the way to the intelligent enterprise. Being modular rather than monolithic, the enterprise stays flexible and open to innovation, modification of its IT landscape and can expand accordingly to new developments. The functionalities that a digital core supports vary depending on the organization's needs.

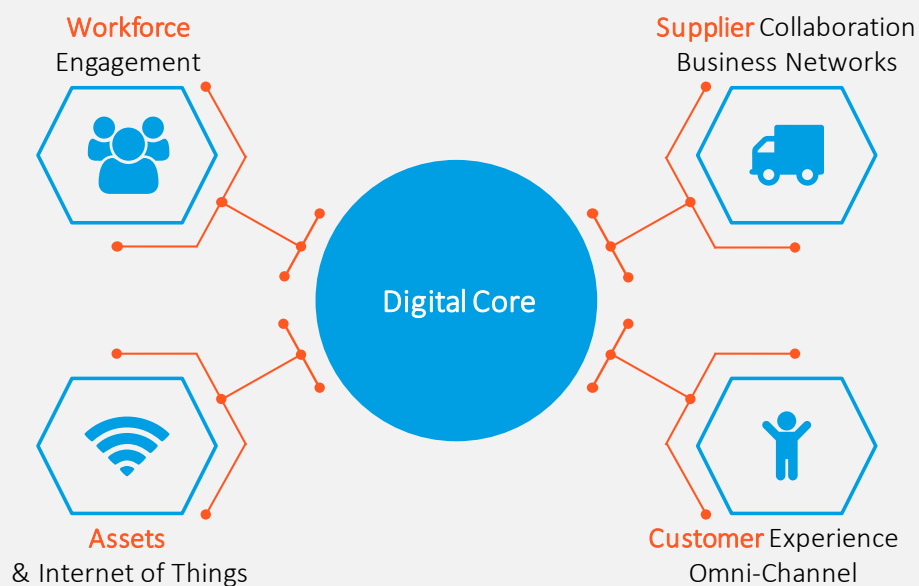


Illustration 4: Digital Core

The usage of a digital core structure enables a decisive advantage in treasury due to a multitude of application options; global real-time reporting from all business areas are generated and retrieved 24/7 (implemented through the SAP Analytics Cloud in our example). Intelligent data acquisition is realized through an analytical use of the database, where relationships between individual data sets are modelled. A high level of automation (made possible by machine learning) enables intelligent invoice reconciliation, and an automated deal decision matrix closes financial transactions based on internal and external factors.

With these new technological developments, it becomes possible for the treasurer to gain an overview of all the critical departments inside the corporation to gain real-time visibility of all cash positions. Incoming payments can therefore be seen directly and re-invested and the payment schedule becomes much clearer. The digital core supports decision making, transaction processing and analytics, as well as end-to-end process controlling. By achieving this in a real-time environment combined with the ability to process tremendous amounts of data from various sources, a significant performance increase can be achieved quickly.

4. NECESSARY ADJUSTMENTS IN THE CORPORATE ENVIRONMENT

4.1 CHALLENGES AND CHANGES IN THE TREASURY DEPARTMENT

These new applications force a rethink of treasury practices. As payments become more and more accelerated and demands can be met quicker, treasury management needs to become active, agile and flexible. A more dynamic cash management is needed to fulfil the obligation to make cash available at the right place, when it is floating 24/7. However, as described above, the future role of the treasurer does not need to change entirely as new technologies help to keep the overview of transactions and cash flows.

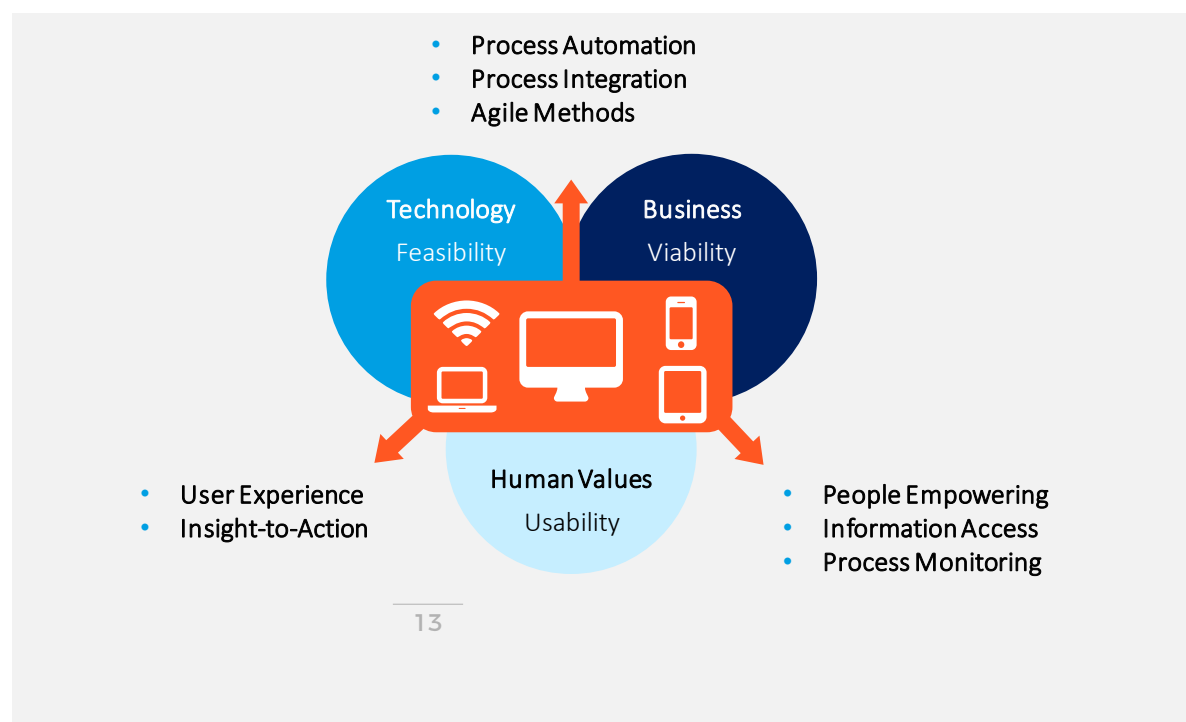
As mentioned above, the opportunities the SEPA Instant Payment scheme offers only work 24/7 when transactions are also issued 24/7, meaning, that treasury departments would need to be functioning day and night. Automation processes, made possible by AI and RPA avoid exactly this need, by enabling transactions to be issued automatically in real-time.

4.2 DIGITALIZATION AND IMPLEMENTATION

It is important to understand that digitalization does not change needs, but the way we meet them. It enhances productivity and innovative strength of employees and optimizes processes of business models. The digitalization of the treasury department can therefore rather be seen as a symbiosis of technology, business and human values, and not as something that will make a treasurer's job obsolete. It is still up to humans to control the "top management" of cash flows and transactions.

The implementation of real-time treasury requires the involvement of banks and employees. While universal banks are overburdened by digitalization and losing market share in many areas to fintechs and technology companies, the future banks will have to cooperate with them to advance their own digitalization and meet customers demand, and not only because of PSD2.

Illustration 5:
Impact of Digitalization
on Treasury



Since it is in the interest of treasurers to invest in technologies that supports real-time processes, it is essential for their success that banks are able to provide these tools. This is why banks are now also in demand and must be prepared for changes in order to continue to survive in the market. They have to be increasingly innovative, use new technologies and create new platforms to the benefit of treasurers. In addition to their own capacity for innovation, the banks have to cooperate with fintechs, which should be seen more as cooperation partners than competitors.

Fintech companies are typically focusing on the main problems that traditional technology providers are struggling with, such as improving cash flow forecasting using APIs and machine learning. Currently many of the successful fintech providers are collaborating with banks. A cooperation between a fintech company and bank, also brings benefits to fintechs, such as helping to achieve accelerated growth, reaching new customers through different channels and benefiting from faster distribution.

On the other hand, making sure that trading platforms also operate in real-time to ensure real-time hedging and transactions is important. In fact, 360T e.g. operates in real-time so this could complement the concept of real-time treasury.

New implementations are needed on the company side as well. Besides the underlying IT-infrastructure, as described above, companies need to rethink their processes

in order to not only receive real-time data, but to “live” real-time treasury. Furthermore there is a need to implement a real-time hub, where the treasurer can find all necessary information in one place.

Employees must be prepared for these new requirements. Key factors are job enrichment and enlargement. A critical success factor in this environment is an involvement of the relevant specialist departments and IT prior to the introduction of new systems and technologies. After this, there is a need for constant training and education in the application for employees to fully utilize the potential.



DEFINITION

Real-time treasury needs new ways of dealing with the faster pace of information flows. To be able to process the information, a convenient way to access the data is needed. A central point of information is a **Central Treasury Hub**. Here all core information is accessible and visualized to give a comprehensive overview on main KPIs, e.g. cash position, FX-exposure, liquidity, forecasts, payments and latest market developments. All information is displayed in real-time.

From this central place the treasurer has to be able to access all detailed information he needs in real-time.

The Central Treasury Hub is the interface where all the available information can be accessed and helps the treasurer to gain information on the current situation on the spot to support his decision making.

⁴See <https://www.360t.com/trading-solutions/market-data/essential-data-feed/>

5. ROAD TO REAL-TIME TREASURY

5.1 IMPLEMENTATION APPROACH

A Big Bang implementation of the global real-time treasury would mean that all integrated steps go live at once. The implementation process would therefore take up a long time. Furthermore, the testing phase of a Big Bang implementation takes up a tremendous amount of time, to make sure that all the different components work once the system is integrated. Employees cannot be educated throughout the implementation process and the load in the corporation would be higher than when using a staged integration.

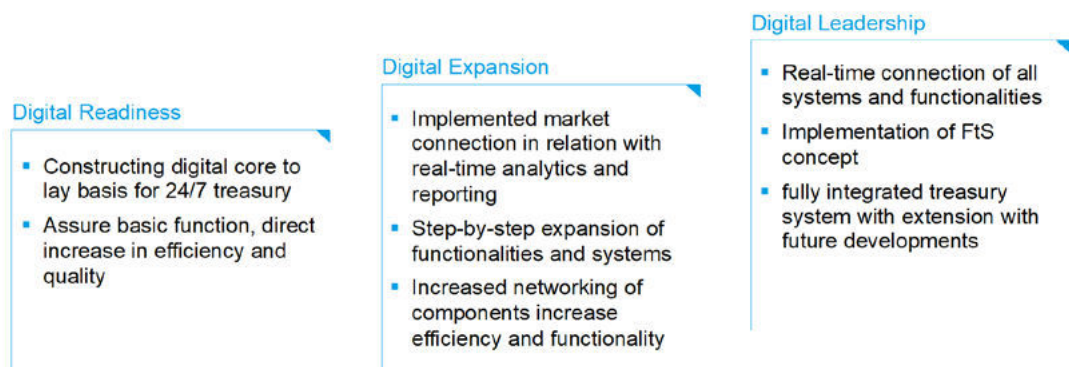


Illustration 6: Stages of Treasury Digitalization

On the other hand, a stage implementation of the 24/7 treasury could work as follows; making sure that the digital core is constructed lays the basis for 24/7 treasury. It assures the basic function and already leads to a direct increase in efficiency and quality. Then implementing a market connection, in relation with real-time analytics and reporting (digital expansion) would lead to a step-by-step expansion of functionalities and systems inside the corporation. Increased networking of previously separate components would also make increased efficiencies and functionalities possible. Finally, 24/7 global treasury emerges, leading to digital leadership. A complete real-time connection of all systems and functionalities, as well as an implementation of the 24/7 global treasury and FtS concept, make up the parts of a fully integrated treasury system with an extension for future developments.

In contrast to a Big Bang implementation, a phased implementation gives employees (first and foremost treasurers) a chance to adapt to all these changes. While a Big Bang implementation changes all systems, processes and activities at once, a step-by-step implementation has the possibility of altering possible steps along the way to avoid problems. Creating the Digital Core inside a corporation leads to a digital transformation to make the system landscape more structured and agile, which would facilitate the steps to a digitized, integrated treasury system.

Educating employees does not need to happen all at once, but rather in a successive way. This gives them the opportunity to use experience they have already gained in earlier implementation steps further along the way, to create a long lasting learning effect.

5.2. PROJECT APPROACH

The main question current treasury decision makers face is where to start this journey to real time treasury. This journey is as unique as every organization itself. The main success factor is to know where an organization is at the moment and where it wants to head to. The assessment of the current state allows the roadmap and milestones to be tailored to each organization's needs. The following section's goal is to give a broad overview on what tasks and outcomes can define each stage described above. Achieving real-time treasury usually consists of various projects, as described above. The following section aims to give an example of what projects the different stages can consist of.

As already mentioned, digital readiness has to be achieved before tackling the challenges to achieve real time connectivity. The concept of the digital core is crucial and should be the first project milestone in this stage. This is the starting point of a program to real time treasury and should be the very first project. After reaching this, first functions can already be connected in real time. Internal systems are a good fit for first systems to be connected. The risk is low, it is technology your organization has already experience with and connection barriers are low. This also means that valuable experience can be gained with the core functions in a real time environment. Connecting your system landscape means your own processes are executed and visible in real time. For example you can connect your treasury system and your market data provider to your digital core, so that first real-time processes can take place.

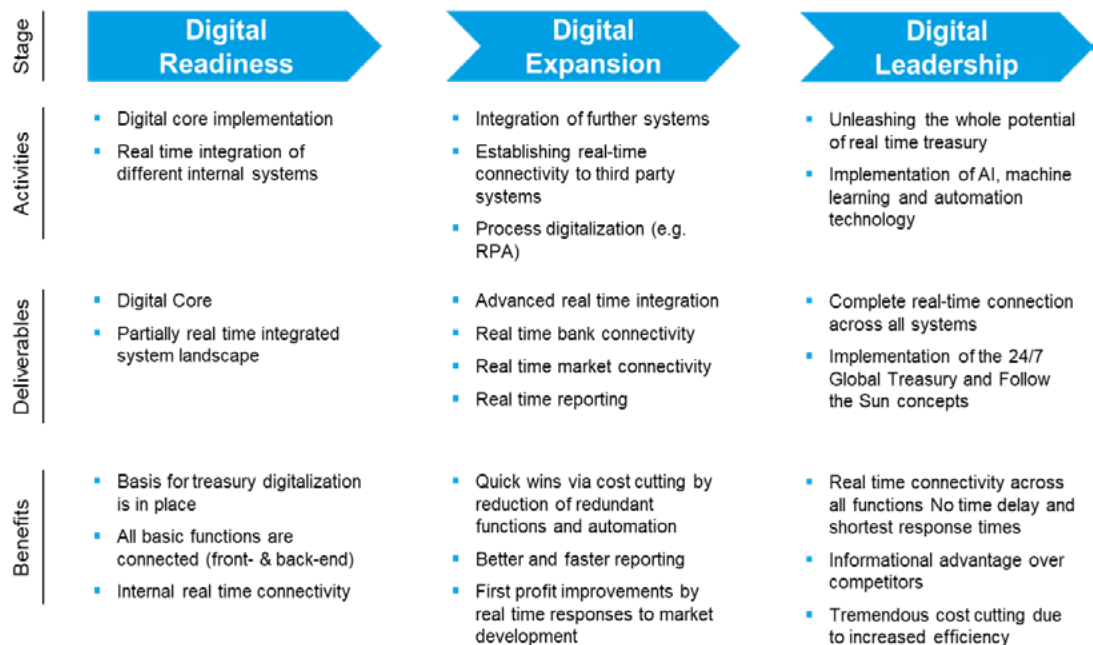


Illustration 7: Real-time Treasury Implementation Approach

Digital expansion is the second stage. After making your internal system and your bank communication real time, it is now time to reach out to other business partners in real time. The one main function you want to establish is real time bank connectivity. This is one of the most important steps for treasury and payments, thus should be the main milestone after establishing your digital core in this stage. This means connecting in real time to your bank (via API) and having real time overviews on your payments and cash position.

In addition, this stage consists of connecting to further third party systems, e.g. market data providers, market places and suppliers to your system. This expansion does not have to take place all at once in one big project. Similar to the whole journey to digital leadership, functions can be added to your digital core one after another, depending on importance and other factors, e.g. complexity, time, costs, your project pipeline and other resource-based decisions.

The outcomes of this stage depend directly on your identified business needs. Typically they consist of real time bank connectivity, real time market connectivity and real time reporting across departments, organizations and even supplier. With these functions in place, the speed of information access gained can be used to further boost the digitalization process. Automation initiatives profit highly from real time connectivity. Processes can be automated using RPA, handling the new speed and quantity of information far more efficiently and effectively than humans, just to name one example.

While the first stage laid the necessary groundworks, it is now time to reap the benefits. Quick wins can be realized directly. Automating real time payments and reporting saves valuable resources and allows employees to use their expert knowledge for more strategic and complex tasks. Erroneous information on the current cash position can be significantly reduced due to the real time access on cash information. This improved cash visibility reduces risks by exposure and allows for a swift reaction to new and/or unplanned events. Automated reporting informs decision makers on new information and especially when time is crucial, allows for better decision making.

The transition to the last stage, the desired digital leadership, is a bit blurry. It is not possible to draw the line an organization has to cross to get from one to the other. It means a fully implemented real time approach for treasury departments. All cash and data flows are available on the spot. Reporting tools are no longer static overviews, but insights of the situation at the very same moment. Usage of advanced automation and analytical tools is key. Reports are no longer designed by a team member, but automatically generated with little to no need for manual adjustment. All the information you seek is just one click away.

The last stage means completely new approaches on how to manage treasury are possible. The 24/7 Real-time treasury and the Follow the Sun approach are examples on how the usage of key technology can shape the future form of treasury.

But is the journey over there? After all, digital leadership is a constant process and has to be defined over and over again. In as fast a paced world as we live in, change is always taking place and is inevitable. But if treasury departments around the world keep challenging themselves and strive for implementing their potential, constant digital leadership is possible.

6. A GLIMPSE INTO THE NEAR FUTURE

When looking into the near future, corporations will see a lot of changes within the way they execute treasury tasks. The main responsibilities treasury departments have today will stay the same. But two things are going to change, first the way these activities are orchestrated and executed, and second, the responsibility of treasury departments within corporates is going to grow.

Now what does this mean for the treasurer? As described in the box below ("A Day in the Life of a Treasurer in Real-Time") the treasurer has information available on the spot, any time, at any place in the world. Information gathering is automated and thus decision making based on this information becomes more and more the focus of daily activities. Manual, repetitive and labor-intensive tasks are automated by software robots and AI, faster than any human ever could. The gained time is used by treasury departments to use freed resources to focus their activities on the more complex challenges they face. The development that treasury departments become more and more involved in strategic decisions will not only continue, but will be significantly strengthened. Can you even count how many times someone said "We should really do this, as soon as we have some time for it"? You might just get that desired chance.

Impacts on the way treasury conducts business are reflected in various other areas. With the emergence of a 24/7 real-time treasury, the concept of cut-off times becomes obsolete. Incoming payments can be used for instant re-investment to gain interest by the second.

A DAY IN THE LIFE OF A TREASURER IN REAL-TIME

Since the daily tasks of a treasurer rely on a specific time frame, his actions change entirely when introducing a 24/7 real-time treasury. In contrast to before, the treasurer of tomorrow does not need to execute certain tasks at a certain time of the day but they are rather executed when necessary, thus changing the approach of a treasury department. Fixed time limitations disappear, data becomes available in real-time.

Checking and analyzing the daily financial status or account statements does not happen in the morning, it now happens every time it is needed. FX exposure is controlled 24/7 thus enabling the settlement of hedging much more efficiently.

Cash management reporting and liquidity forecasts are available all the time, with the support of RPAs and AIs to make the work of a treasurer easier by providing necessary data immediately. The daily financial and liquidity report is not checked and controlled at the end of day anymore. That happens every minute throughout the day.

A clearer payment schedule and instant visibility of cash and liquidity are among the benefits of an accelerated treasury department, accompanied by a more responsive service to customers, especially regarding outgoing payments such as refunds.

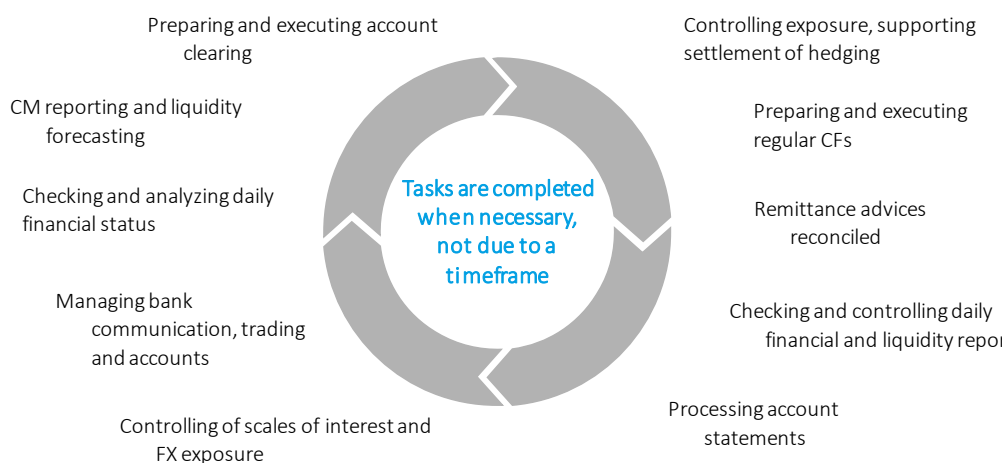


Illustration 8: A Future Treasurer's Day

Corporation's sales become more efficient, since buyer and seller do not have to wait for incoming or outgoing payments, thus there is an enhanced accessibility of cash in the B2B context and a possibility to sell and purchase at a higher rate. A more dynamic credit collection process leads to an enhancement of working capital, as well as an increase in investment returns.

With more dynamic and responsive outgoing payments, supply chains can be accelerated, thus making B2C flow more efficient, precise and visible, while the access to liquidity regarding incoming cash is enhanced as well.

Reducing risk, improving efficiency, making business easier for supplier and buyers can be labeled as the most distinct feature of a 24/7 global treasury, making it possible for corporations to take a step further into the future, changing and adapting to the new business environment.

And to give a response to Drucker's statement from the beginning: Change is the only constant in this accelerating world. Time to start changing it.

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We want to sincerely thank all the helpful colleagues for their wonderful collaboration. I would particularly like to single out Ole Ohlson and Yunus Simsek, without their great commitment, research and passion for the topic of real-time treasury this paper would not have been possible. Thanks a million, your effort is truly appreciated!

