

Digitalization in Treasury

Cash Management: so where is the Cash Manager?

Corporate Treasury

In the last newsletter, we explored the fundamental issue of what digitalization actually means for the treasury department. Today, we would like to take a closer look at one of the core areas, cash management.

Regardless of the many definitions of cash management, technical developments, driven by system integration and above all process integration, have led to a new topical delimitation. These days, cash management consists of the cash & banking hub, which is made up of five fields:

1. bank account management
2. cash positioning (i.e. the traditional disposition of the bank accounts)
3. cash concentration, i.e. all of the measures used to manage liquidity in and between the various bank accounts
4. Cash forecasting, i.e. a liquidity forecast required for the disposition, cash concentration and short-term loans and investments
5. Payment operations

In the context of digitalization, these five topics are generally inspected for three central objectives (process efficiency, effectiveness of liquidity use and compliance), as well as the measures necessary for this (creation of transparency on bank accounts, balances or lead times, standardization of processes, formats and communication channels as well as maximum automation). As such, new structures and along those lines, new target operating models, emerge, which define the interaction between treasury, shared service centers, IT and subsidiaries.

Naturally, new technologies, such as artificial intelligence, blockchain or predictive analytics, also come into play.

But: which of these technologies are truly relevant for our cause? Which technologies should be of concern to treasury? And which ones are still in their infancy so that their relevance is still quite questionable, and any time spent on it should be seen as time wasted?

Let's look at two dimensions to narrow things down further: the usefulness of a technology for treasury and its maturity:

1. High maturity paired with great usefulness calls for an immediate implementation, as there are not only first specific user examples but also successful first uses. This includes items, such as:
 - *Treasury robotics*: Robotics Process Automation (RPA) is the use of software, so-called bots that automate manual and repetitive tasks. In cash management it could be used where interfaces (still) have not (yet) been automated or where data has to be queried and processed

manually. Bots help streamline processes if there are restrictions in time and budget for a comprehensive (technical) transformation.

- *Automated reporting*: modern reporting software enables the automated generation of work, management and compliance reports that are dynamic. Their use is independent of the underlying IT environment.
 - *End-to-end accounting*: Already now, all cash management transactions can be accounted for over their entire life cycle, including the relevant period closings.
 - *Fraud prevention in payment operations*: Attacker scenarios are becoming more and more sophisticated and unpredictable. Machine learning is therefore extremely useful for recognizing anomalies in payment operations. These are different to usual search algorithms in that they do not respond to any input because the search result is as of yet unknown.
2. A medium to high maturity with an average degree of usefulness requires **a closer look**. These include:
- *Predictive Analytics*: Predictive analytics could be very useful for cash forecasting. The objective is to reduce the amount of work while improving the quality of the forecast. However, what is usually forgotten is that this requires detailed historic data for this to be of any use. This calls for some work beforehand.
3. A lower maturity with a high degree of usefulness requires continuous **observation** of technical developments. This includes a number of topics which are being discussed with intensity but which are yet to become relevant for implementation. These include:
- *eBAM*: here, the focus is entirely on the few banks that have decided to use eBAM, resulting in results that are far from comprehensive. Whether banks are waiting for the distributed ledger technology (see KYC) remains to be seen.
 - *AI for cash reconciliation*: artificial intelligence (AI) is expected to improve the automated clearing rate of your bank's accounting. Is this really necessary with an already quite high clearing rate of more than 95%?
 - *Prescriptive simulations*: setting up and defining prognostic processes for forecasts could become a next step in predictive analytics. Just to what degree it will improve the cash positioning remains to be seen.
 - *Smart contracts*: even if the term and the technology smack of the 90s, the development of bitcoin as a special registry application has breathed new life into the idea of improving the efficiency of contract management in financial transactions. However, just as with the topics of blockchain and distributed ledgers, increased security coupled with higher efficiency can only be achieved with a high number of participants (and as such, nodes). One-on-one relationships are easier (and cheaper) to map with traditional technology.
4. A low degree of usefulness paired with low technological maturity means that this topic can be **ignored** at this time. The examples will most likely surprise you as they seem to be everywhere!
- *Distributed ledger for KYC processes*: This resembles the search for the holy grail... doubtlessly, unique and accurate information for KYC processes would be a major advantage of this technology, but only if the overall system required for all of the information also has these characteristics.
 - *Payments in crypto currencies*: If your business model (or future changes to your business model, such as on-the-fly booking of additional functions in your car or the invoicing of services between machines) does not force you to accept or perform payments in crypto currencies, do not bother yourself!

As you can see, in the end, the new areas where treasury should think intensively about digitalizing cash management are relatively few. However, just as we have already mentioned in the original article, the basis has to be in a form that allows a development of the potential use of new technologies. This is especially true in view that currently disruptive technologies are rather the exception than the rule, but once the evolution takes off it will be at a distinctively higher speed than ever before.

The areas to consider include:

1. Bank account management (BAM):
 - optimizing the bank account structure and banking partners
 - introducing a BAM system that provides for the possibility of eBAM
 - replacing bank accounts with virtual accounts and in-house bank accounts
 - implementing a bank fee management
2. Cash positioning:
 - connecting it to bank account management and cash forecasting using processes
 - completely automating bank statement processing
 - implementing rules-based automated cash positioning equipped with optimized exceptions-to-policy rules
3. Cash concentration:
 - optimizing the cash concentration structure across all currencies, countries and time zones, taking into consideration the relevant in-house bank. This includes the sub-area of bank relations strategy
 - introducing RPA (Robotics Process Automation) to retrieve data and automate processes where current systems and external service providers still show gaps in their automation
 - tracking fiscal implications and relevant, quick adjustments of structures
4. Cash forecasting:
 - implementing company-wide automated financial statements
 - preparing a model of what drives liquidity using relevant dates from the operative business
 - using forecasting tools that enable data transformation and algorithms
5. Payment operations:
 - deploying a centralized payment operations platform
 - standardizing internal and external payment operation processes
 - harmonizing payment operation formats

When transforming cash management to a cash & banking hub, the immediate question is: what is the time plan? During this process, it is important to understand that there are interdependencies to consider.

There is a high correlation between bank account management and cash concentration as far as content goes, so it makes little sense to introduce a solution for bank account management if the structure of the accounts and cash concentration has not been optimized beforehand. There is also a technical dependency between cash concentration and cash positioning as these basically use the same systems. Cash forecasting and payment operations require many resources and can therefore not necessarily be implemented in parallel to other topics.

It therefore becomes clear that cash management has many faces. Traditional topics that evolve alternate with disruptive new technologies. Traditional cash management, i.e. the managing of cash where numerous accounts are managed turns into an optimized cash & banking hub, where every possible manual intervention is automated. The continuous optimization of the structure with the help of new technology will also be a focal point in the future. In the next edition of this newsletter, we will look at what this evolution means for employees.

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Opportunities in energy and commodities trading

Corporate Treasury

In order to make optimal use of digitalization's potential, it is inevitable to regularly assess the maturity of individual technologies and define priorities for one's own use.

Blockchain, robotics, prescriptive analytics, deep learning, artificial intelligence...

For a long time now, these keywords have been present in any discussion on digitalization worth its salt. A company's nebulous wish to become digital is one thing, whether it makes sense and the ultimate implementation is quite another. Nonetheless, after several years of batting this topic around, researching and applying it in practice, some of the technologies are already so well developed and established that an implementation in the energy and commodities industry 4.0 now becomes realistic.

In order to remain profitable in a highly competitive and rapidly changing market, companies can no longer avoid increasingly digitalizing their business model. But what exactly does digitalization mean? Commonly, it's defined as the "optimization of processes and methods through comprehensive data utilization, which is made possible by computer-assisted user interfaces and powerful software".

In the following three specific application examples, we will look at what this may mean in detail for energy and commodities trading.

Applications of digitalization

Robotic Process Automation (RPA) for back office processes

Due to the large number of systems and interfaces, back office processes in energy and commodity trading companies offer considerable potential for optimization, as they are still very manual and time-consuming. Here, the use of RPA in the form of so-called bots, i.e. programs that control other programs – or even the new generation of "virtual colleagues" – can bring relief. These can run 24/7 in the background and automatically read data from the trading system, process data using Excel, write e-mails and much more whenever there is a pre-defined trigger, such as an incoming e-mail. This means that all repetitive rules-based process steps can be automated.

Popular candidates for applying RPA are, for example, the validation of trades, i.e. comparing transactions between the trading system and deal confirmation, validating incoming payments and performing specific regulatory reporting processes. Other applications include the reconciliation between portfolios and the general ledger, triggering payments whenever certain events occur, or automatically posting invoices after having reconciled these with trading data. All these processes have to be executed carefully and usually, also in a timely manner. However, they take up much time and only enhance value minimally and are thus ideal candidates for RPA to free up employee's resources for more valuable activities. Moreover, implementing RPA usually turns out to be a quick win, as it can be done quickly and its integration in the IT environment is non-invasive.

OTC trading and settlement using blockchain technology

Even if the blockchain technology is past the zenith as far as the hype is concerned, it is undisputed that it will be used extensively in energy and commodities trading in the not-so-distant future – especially in trading between decentralized "prosumers". At the end of 2017, for example, the first blockchain transaction between two energy companies took place, made possible by the Enerchain project.

The advantages are direct trading without any central intermediaries as well as the automated processes that are necessary to map the sometimes very small quantities traded peer-to-peer in a manner customary for such trades.

Blockchain could act as a "single source of truth" for the trading cycle where the transaction is entered using "smart contracts", followed by an immediate deal validation, the mark-to-market calculation and the final settlement. It thus offers the potential to automate the many manual processes in trading, streamlining the IT system landscape that currently is still very heterogeneous.

It is too early to say whether this scenario will ever become reality because too many unanswered questions remain around performance, security and scalability; however, it's still conceivable.

Planning your liquidity using predictive analytics

One of the challenges in liquidity planning in the energy and commodities industry is the large number of potential factors that could influence future liquidity (interest rates, payment histories, sales from direct marketing, electricity and commodity prices, open margining positions, weather data, etc.). Here, the use of predictive analytics methods for optimizing and automating liquidity planning could provide an efficient solution.

The prerequisites for the implementation are the availability of detailed historical values (e.g. SAP Liquidity Analyzer) and an existing Big Data architecture (e.g. SAP Predictive Analytics for HANA). Once installed, there are many application possibilities. For example, predictive analytics could not only predict future cash flows but also, for instance, the margins to be deposited or various risk and P&L KPIs, such as cash flow at risk (CFaR) or sales revenues. The definition of the data relevant for the calculation of specific key figures is one of the initial key tasks when setting up predictive analytics methods.

The great potential has already been recognized by many companies. For example, the current trend is to move from decentralized planning to automated self-learning projection models, which means increasing investments in internal and external data sources used to improve forecasts.

Intraday forecasting and algorithmic trading

Neither the short-term optimization of intraday load forecasts to avoid having to provide balancing energy nor the resulting quarter-hourly trading would be possible without digital technology. Using information that is available only at very short notice in order to correct the day-ahead forecast requires data from various sources that is linked at high speed as well as self-learning algorithms to recognize patterns. The immediate conversion into many small purchase and sale orders makes an automated trading system indispensable. The competition among market participants who are already taking advantage of these opportunities, as well as the constant pressure to become more efficient are leading to an increasing demand for these solutions from energy trading companies, leading to an increasing number of solutions on offer by system manufacturers.

Setting priorities

But where best to begin your digitalization? Or, if you're among the early adopters, what should be your next steps? The sheer number of buzzwords on the topics may cloud the focus on what's important; for this reason, it might be necessary to assess the individual applications and technologies on a case-by-case basis before committing to any of them. Such an assessment juxtaposes the current maturity level of specific technologies to their potential for the company's energy and commodities trading. This helps to determine which applications do not make sense (low potential and maturity level), which ones should remain under observation (high potential and low maturity level), researched on more (high maturity level and low potential) or implemented (high potential and high maturity level).

Just as important is a review to determine whether the currently used system offers more opportunities previously overlooked that could be exploited before making further investments. Simultaneously, an analysis may also be necessary to find out to what degree methods and processes have to be developed further in order to enable the implementation of digital solutions.

For a medium-sized public utility, for example, it can mean that they should:

- immediately implement Robotic Process Automation for back-office processes,
- actively explore the topic of OTC trading and settlement using blockchain technology,
- merely observe predictive analytics for the planning of cash flows,
- design the existing risk reporting more flexibly and with direct use of the databases instead of time-consuming data processing in Excel, and
- activate the already existing interface for automated posting of trading transactions instead of continuing to post manually using position lists extracted from the ETRM.

Strategic discussion on the company's road to energy and commodities trading 4.0 should be based on such a matrix listing all possible applications and technologies that, incidentally, should be updated regularly.

Conclusion

The digital transformation is in full swing. The pioneers in the financial industry have proven that the search for useful applications and persistence in their implementation will pay off both strategically and economically.

Companies in the energy and commodities industries are catching up. Established technologies, such as increasingly sophisticated algorithmic trading systems for the intraday trading or low-cost sensors for measuring the maintenance requirements of power plants and wind farms (keyword predictive maintenance) are already being researched and implemented by many companies. In addition to higher sales and better efficiency, they report improved customer loyalty and the opportunity to enter into new markets. The regular launch of promising new technologies shows that digitalization has only just taken off – the exciting journey is far from over.

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