



Treasury Technology Market Intelligence

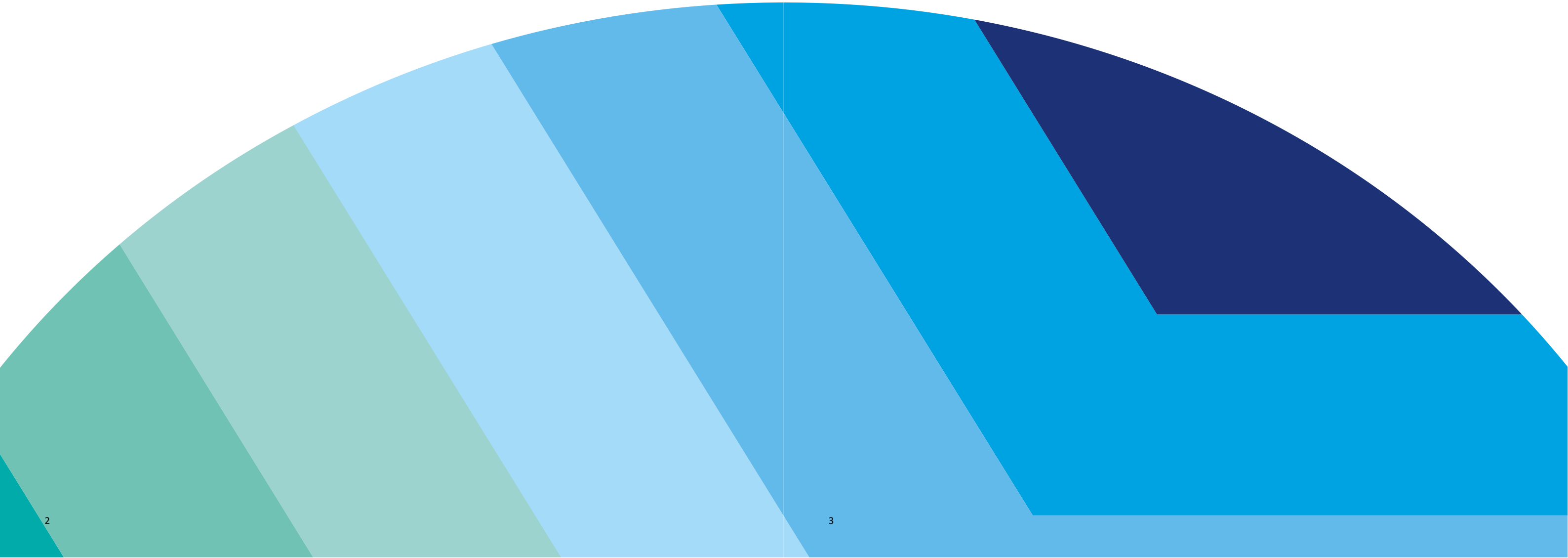
Managing risk to unlock performance improvement

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Executive Summary

The Deloitte Treasury Technology Market Intelligence report is a review of current Treasury Technology trends and market insights. We see technology as a foundational building block of modern Treasury operating models. It’s also a key enabler for the deployment of efficient, robust, and simple Treasury processes that deliver business value. In a climate where internal and external pressures constantly merge to demand cost reduction and more financial visibility from the Treasury function, this publication looks at how technology helps performance improvement – specifically on risk.



The return of market risk: A review for treasury

“Life is inherently risky. There is only one big risk you should avoid at all costs, and that is the risk of doing nothing”

Denis Waitley

Recognising Risk

Risk management is fundamental for most corporate organisations. Recent years have shown us how swiftly new challenges can emerge, causing chaos and uncertainty. Interest rates have been stable and exceptionally low for a decade, making calculations and analysis simple. There is also an emerging trend of companies shifting their focus towards improving working capital and enhancing liquidity risk management, as highlighted in Deloitte's Global Treasury Survey 2022.

These days corporations pay significantly more to issue bonds, borrow from banks and third parties. These actions could interfere with business plans for growth, cripple operations and undermine business models that were acceptable or profitable in previous years. Many companies, large and small, do not have the cash flow to maintain their leverage that was accumulated in times of low interest rates.

With recent spikes in inflation and interest rates, an effective strategy would help mitigate or eliminate the risk. Risk management is about knowing which areas to avoid, and which have potential. Countries have different levels of exposure to various economic risks, such as deflation, inflation, interest rate fluctuation, political risks like wars and government changes, or natural disasters.

Many businesses have dealings in foreign currencies. So, unless exchange rates are fixed with respect to one another, these dealings introduce foreign exchange risk as a part of doing international business or investing in other countries.

Assessing which currencies represent the highest risk to your organisation, and prioritising them for hedging, is key to successfully managing shortfalls.

Another approach is to apply cash flow hedging to deflect sudden changes that can occur in cash inflow or outflow. This will act as an opportunity to address fundamental mismatches between revenues and expenses brought on by currency fluctuations.

Changes to cash flow has major implications throughout the supply chain. This is why improved cash visibility can help progress payment practices in the industry through the adoption of digital payment systems. Automation improves visibility throughout the payment cycle at all levels and releases company resources to focus on developing business transformation strategies. Automation also highlights compliance requirements and upcoming value dates to ensure timely payment processing.

The combination of financial risks and supply chain restraints have stayed at the top of the corporate agenda. Recent surveys show companies have made significant efforts to improve their supply chain over the past few months, by expanding their successful digitisation programmes and implementing structural changes to their networks.

In the modern world, corporations must be resilient and have the capabilities to adapt to major disruptions. It's essential to have a well-established Treasury Management System (TMS) architecture framework in place, that will allow long-term strategies and swift implementation of solutions to develop and face these complex challenges.

There is high demand for businesses to use more streamlined approaches to manage faster processing from their payment systems. Significant advancements in online security and privacy are alleviating many concerns companies faced in the past. Menial tasks, such as payment posting and remittance tracking, often have an elevated risk of error and can be handled by technology. This removes the risk of human error and drastically increases processing speed.

Follow the money

The payments revolution is part of a business's transformational journey. This evolutionary step gives corporate Treasury a unique opportunity to help their organisation adapt and thrive in a new era.

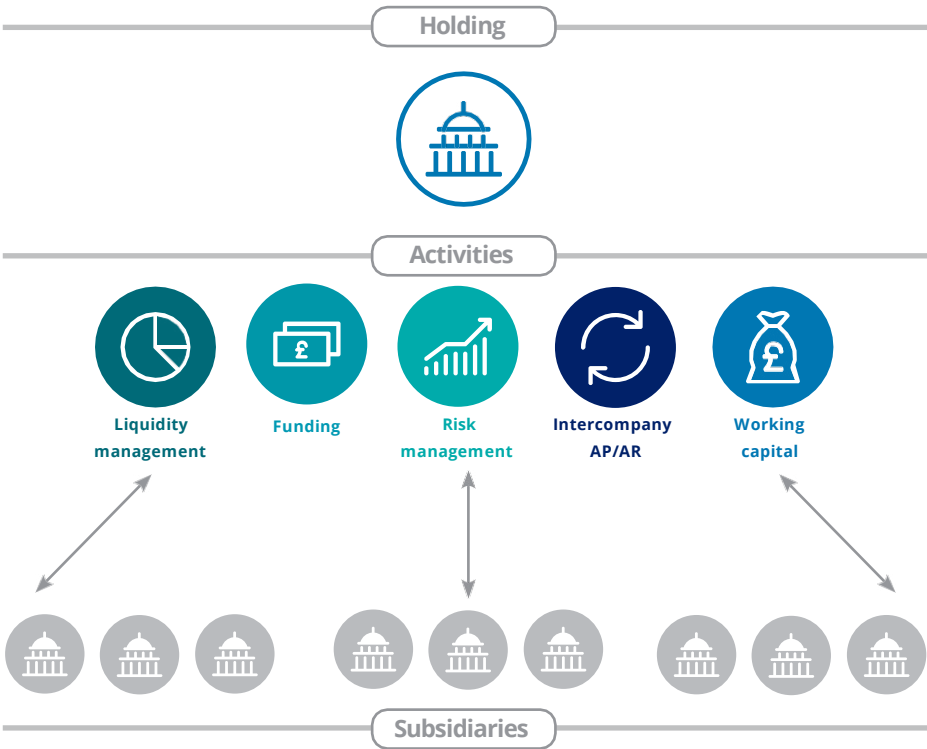
By 2030, it is estimated there will be 130bn connected devices worldwide - refrigerators that restock themselves, cars that pay for fuel and tolls. That is a huge amount of automatically generated payments, which would create numerous entry points into businesses across the globe. As a result, this will generate masses of new customer and payment data.

Treasurers need to ensure they are wired into this new world, while ensuring data is organised and transparent. Inefficiencies in payments and challenges of reconciliation cannot continue in a future where instantaneous digital payments are essential. This rise of payment volumes, further hindered by increased data processing requirements, is sending organisations towards a fork in the road. They must decide whether to invest in infrastructure, adopt true straight-through-processing and reconciliation, or fall behind their competitors.

The choice of vendors is ever increasing and driving competition in the field of payments. It has sparked the fire of innovation to provide more cost-effective, efficient, and instantaneous solutions. Leading vendors have developed systems to such an extent that they can now compete with banks - who previously dominated the cross-border payments market due to complex operational requirements. These cross-border payment providers leverage innovative technologies such as blockchain and Artificial Intelligence (AI) to create a seamless, automated end-to-end payment process from compliance checks to receipt generation.

Another key driver for cross-border payments is the adoption of ISO 20022 - a globally developed methodology for transmitting data which provides a consistent messaging standard for payments. Using this ISO standard will give businesses benefits such as faster payment times and lower costs in line with a richer, internationally harmonised payment system.

The new era demands greater collaboration from firms to achieve their full market potential. This can only be done by embracing API-based business models and open ecosystems. Data prowess and enhanced payment processing capabilities are essential for future growth. Banks and traditional payments firms must continue evolving if they want to maintain their competitive advantage.



In-house banking is regaining popularity among group treasurers, as it allows global organisations to manage their liquidity more effectively by centralising payment operations and a thorough bank rationalisation. Modern Treasury solutions with advanced in-house banking functionality provide corporates with the tools to perform tasks such as cash pooling and zero balancing sweeps.

They also support more sophisticated activities such as the set-up of a fully operational in-house bank that pays or receives funds on behalf of subsidiaries and performs intercompany netting.

Adopting these operating models and solutions, means that corporates can benefit from a significant reduction of bank fees and charges, a lower operational and fraud risk.

When equipped with the right technology, the digital economy will give treasurers greater visibility of their cash and liquidity. In turn, this will allow Treasury to play a bigger role in shaping business strategy. The efficient use of capital is critical as companies venture into new markets.

The new, post-pandemic challenges require corporate treasurers to transition to into a strategic role. Technology is a key enabler of this move, with the digitalisation of Treasury being its catalyst.

Real time counterparty risk management: Digitising the new reality

Credit and counterparty risk management has been a consideration since the concept of trade was invented. Even our ancestors needed to feel like they “knew” another tribe or have a common association with them, through language or symbols for example, before they trusted each other enough to trade simple items.

The credit risk management we know today is more complex. With the rise of globalisation and digitalisation, effective credit and counterparty risk management has more moving parts than ever before. Counterparties, asset classes, even timely supplier payments are just some of the key considerations that need to be made

by a Treasury to ascertain what their true exposure is.

We only have to look back on 2008 to see some of the key consequences of not managing risk correctly. AIG (American International Group) and their underlying insurance contracts represented a disproportionate amount of exposure, short-term money market liquidity was relied on as lifeline for building societies like Northern Rock, CDOs (Collateralised Debt Obligations) being 20x the size of the underlying mortgages they were insuring against with no thought to the required cashflow to cover in the event of macroeconomic turbulence. We can look back as recently as March 2023 with SVB and even “too big to fail” Credit

Suisse – the first bank defaults since 2008, which have sent panic in markets across the world - because credit limits and risk were not monitored effectively.

How was none of this caught? There was a lack of comprehensive risk management, and where it was in place it was easily manipulated or prone to error - not least due to non-optimised tech stocks that had been underinvested in for years.

As markets become more volatile and credit becomes harder to come by, it is imperative for Chief Financial Officers (CFOs) everywhere to ensure that corporates are effectively managing credit risk. Credit risk can be in the form of:



None of these items should be treated in isolation. Corporates everywhere should consider all three in one place and at one time. This feat is impossible to manage in Excel, hard to actively monitor if outsourced to a third party, and difficult to articulate in simple terms at senior levels due to the sheer volume of data involved. However, with effective reporting and interactive data analytics, all of this can be visualised and presented quickly in one place at one time – provided you are using the correct solution. Whether it is counterparty risk or the up-and-coming functionality around supply chain finance that corporates are scrutinising across the globe, technological solutions are readily available in the market to manage your risk.

For treasuries, these solutions are more advanced than ever and aim to tackle three key considerations for corporates across the world:

- Counterparty and credit risk
- Sensitivity analysis
- Regulatory compliance



Effective technologies can automate all three of these processes when implemented or optimised in any

organisation. Treasuries globally can benefit from the standard functionality to effectively and efficiently remove time and effort from the working week, namely:

- **Standard reporting and simple configurations:** Most modern systems of record in a finance function will have reporting and analytics that allow treasuries to carry out complex calculations and consolidate data.

Counterparty risk management can measure exposures in flexible ways such as looking at the fair value of one asset, while combining it with another to get the true exposure. Standard packages from vendors and advisors can replicate unprecedented incidents of the past, like the 2008 financial crisis, Brexit, and the short tenure of former Prime Minister Liz Truss. These packages provide comfort for and protect corporates against vulnerabilities, while future proofing our exposures. With all this neatly wrapped together, according to market standards, regulatory reporting becomes an automated exercise with little to no human touch required to satisfy regulatory requirements.

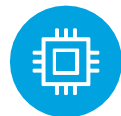
- **Market data feeds for volatile market conditions:** The recent past, and near future, have presented levels of interest and FX rate volatility not seen in decades. Even inflation, which flatlined for a decade, has returned to 1989 levels affecting everyone, everywhere. With it, the fundamental market data associated with global institutions has been reassessed and shaken up. If we rely on manual updates or defunct integration points, this can quickly take up a lot of Treasury time and resource in order to keep pace with markets. Thankfully, system integration and continual investment in APIs across the board have alleviated this burden. Corporates no longer have to cyclically collate reports and data from many different sources. Modern integration allows for automated updates to credit ratings, company information, and more in our systems of record.

This means we can rely on carefully mandated and configured company policy to automatically adjust according to market shifts. Less time spent gathering data means more time spent on analysis and decision-making. This ultimately leads to a safer outcome for corporates everywhere.

- **Codifying knowledge and expertise:** One of the great powers of modern technology and the burgeoning trend of global standardisation is that we are less burdened with key person reliance risk than ever before.

Historically expensive and hard-to-hire resources who were experts in credit risk, market analysis and regulatory compliance were key to passing audits in a corporate function. Modern technologies have lightened this burden as products have matured over the last 20 years to become a codified knowledge source in these areas. This works especially well when we look at SaaS solutions available to corporates. Their automated updates and releases to thousands of customers on a regular basis means that corporates benefit from a solution that's used across the industry. This widespread adoption carries the benefit of a community of users searching for similar solutions with a more informed and timelier roadmap, a focus on usability, and a technological solution for regulatory reporting that quickly satisfies auditor needs and requirements. This is all automated, without needing an expert in each area to support daily business needs.

- **Real-time updates:** Modern technologies should no longer rely on end-of-day batch processing or user-actioned commands to flag possible breaches of counterparty limits, push boundaries during stress tests, or produce regulatory reporting. Real-time data management has transformed the way users in all industries interact with technology. From getting news through push notifications, to reminders it is someone's birthday, active alerting in real-time has become the norm across all industries - not least in finance. With real-time feeds of market data, live updates throughout the system as soon as a record is added to a data base, tailored approval and reporting processes – there is no excuse for finance leaders to not be informed the instant a boundary has been pushed. Real-time updates give us automated analysis, automated projections of multiple what if scenarios, and automated regulatory reporting for any action taken.



These key benefits of technology investment in counterparty risk management are just the start. When digging deeper and applying company specific metrics or KPIs – the possibilities are endless. Here are some considerations when making your investment:

- **Implementing and codifying rules:** The first step in automating any compliance process is to codify rules that govern that process. Modern solutions range from outside-the-box functionality that can be up and running in a matter of days, to larger more sophisticated solutions that can be tailored to almost any need of a complex business. Deloitte deals with all parts of this spectrum. We can recommend and implement the solution that best fits your business needs.
- **Approval workflows and best practices:** Some say rules are made to be broken, and that can be the case with regards to counterparty and credit risk management.

We are not suggesting these rules should be broken at will. But if they need to be broken for specific activities like infrastructure spend or acquisition, then a secure and well-tested approval process right up to the CFO level should be implemented. With our assistance, corporates can make the most of their technological solutions when looking at approval workflows.

- **Integration with your single source of truth:** Exposure goes beyond the Treasury function, even if it is the Treasury's responsibility to act on it.

This means that information must be gathered from different parts of the business including Operations, HR, Finance and more. This means integrating to upstream systems. With our bank of knowledge and experience across a variety of platforms, Deloitte can accelerate the time-to integration so that your exposure can be fully understood faster. This means the right people are alerted to any areas of concern at the right time.

- **Setting up alerts:** Alerts allow for proactive not reactive activities. This means the right people are alerted to any areas of concern at the right time.
- **User education:** Training and documentation are essential for many reasons. Refreshers for long-term staff, upskilling when there is staff turnover, and proof for audit firms that a robust counterparty risk management process is in place. Deloitte's teams can gather requirements, document findings, and provide best-in-class recommendations for automation opportunities for corporates of any size or sector.

If you have questions about the automation of counterparty risk management, or anything else in this section, please feel free to contact Jack Duffy or Naeem Alam.

Debt Advisory Market Update



For nearly 15 years, the financial world experienced free-flowing liquidity in a low interest rate, loose-monetary policy environment, as central banks fought to deflate the financial crisis and its impact. That tap was turned off last year, as central banks battled supply-side shocks to the UK economy, driving inflation rates beyond 10%. The Bank of England's (BoE) Monetary Policy Committee has repeatedly voted to increase the base rate from 0.1% in December 2021 to 5.25% in August 2023,, its current peak, which was followed by a series of pauses. These high rates have undoubtedly affected the affordability of debt for borrowers.

Leveraged Finance Market

Following unprecedented levels of deployment of institutional capital post-COVID-19, the second half of 2022 and 2023 saw the toughest market conditions for leveraged borrowers in over ten years. Against a backdrop of macro-economic uncertainty, leverage-backed M&A activity was constrained by the limited availability and affordability of credit.

While base rates remain elevated compared to historic lows, lenders have demonstrated a renewed appetite to deploy capital as stability returned to the financial markets in 2024.

For the right credits, there may be scope for sponsors to de-risk their equity - particularly in advance of an exit process where borrowers can lock in portability to avoid frictional costs. On the larger deals, we are seeing a general trend toward the US model of smaller hold levels in a greater number of transactions; with some lenders being reluctant to deploy more than £250m tickets, despite the firepower within the fund.

It comes as no surprise that certain sectors remain more challenging for lenders than others, as borrowers with exposure to consumer spending, inflationary pressure, or less favourable end markets (i.e., Oil & Gas) struggle to access competitive capital. Lower leverage levels or equity-like kickers may be required to entice lenders into these particular sectors.

We are seeing an increased level of creativity in funding structures to fill the "affordability gap" left by higher base rates on cash-pay loans. A number of lenders are offering non-cash pay tranches of debt, where valuations remain high but cash-cover-to-interest-cost ratios are under pressure. Proactively securing this level of flexibility and a range of alternative funding solutions for prospective buyers is critical to support successful exits.

If you would like to discuss Leveraged Finance, please get in touch with James Blastland or Louise Harvey.

UK Corporate Market

While the corporate market has been exposed to the same macro-economic pressures as the leverage finance market, it has been impacted in a different manner by the heightened interest rate environment. This is largely down to the borrower population exhibiting relatively lowly-levered balance sheets, meaning cash flows and debt serviceability are not as immediately exposed to rising interest rates to the same extent.

The first three quarters of 2023 were particularly subdued, with syndicated lending in Europe down 20% during the first nine months, compared to the same period in 2022 and the slowest nine-month period since 2002. These reduced volumes were driven a lack of borrower demand acquisition-related financing, which was down 45% during the same period. However, volumes picked up in Q4, which resulted in the European syndicated lending ending just 8% down versus 2022.

This momentum has continued into 2024, with corporate bankers communicating and demonstrating risk appetite for deploying incremental capital to support new and existing clients, providing the credit outlook for the underlying sector is robust, with a specific focus on exposures to consumer spending and inflationary costs.

As was the case throughout 2023, we expect that market activity will be influenced more by borrower-demand for acquisition and event driven financing, rather than lender supply. Our initial experience gives reason for optimism, with signs of renewed interest from corporate buyers in organised auction processes. In recent years these types of processes (particularly in the mid-market), have been dominated by institutional buyers, backed by deep liquidity from private debt providers, giving latent firepower to stretch opening leverage and move, with speed, to secure exclusivity.

This practice inflated EV multiples and cooled interest from corporate buyers. Early signs from this year show that the rising cost of capital for institutional buyers has made corporate buyers more competitive and dampened this trend to encourage closer interest from corporates, helped by the appetite from the banks to support such structures.

In addition to credit risk, banks continue to focus on their overall “return on capital,” with discussions around debt pricing and potential non-risk ancillary opportunities being a prominent part of all debt-raising processes. This trend may intensify further if capital adequacy rules are further tightened in the wake of the crisis surrounding Silicon Valley Bank (SVB) and

Credit Suisse (CS) in March 2023. This move would in turn increase pressure on lending teams to optimise returns on capital deployed, which is efficiently achieved by prioritising higher returning opportunities

Finally, the inclusion of sustainability KPIs within loan agreements continues to increase and is now commonplace throughout the corporate market and not confined to the largest UK borrowers. This has been fuelled by a more widespread adoption of sustainability strategies and reporting at board level (in part driven by regulation). This has materially increased the applicable borrower universe for this type of product. Sustainability-linked margin adjustments remain relatively immaterial (maximum 0.05%), showing that lenders do not benefit from any capital relief for deploying capital in this manner.

Deloitte’s market-leading Corporate Debt Advisory team has deep and current experience in supporting corporate borrowers. Through our client lead, dynamic, hands-on advisory model, we consider our client proposition to be best-in-class, resulting in consistently successful client engagements. Our team positions themselves at the forefront of the transaction, alongside our clients, to take the lead on all aspects of a debt transaction, from inception to execution.

Please get in touch with Nick Soper or Carl Stevenson to find out more about any aspect of Corporate Debt Financing and how our team can help you.

Specialist insights: Cybersecurity

Defending against cyberattacks

In today's hyper-connected world, cybersecurity has become a pressing concern for businesses and individuals. With the rise of digital platforms and increasing reliance on technology, the need for robust security measures to protect against cyber threats has never been greater – especially when processing transactions.

What can – or should - corporates be doing, already?

Are you an existing or a prospective SWIFT customer? Assuring mature SWIFT networks remains a top priority for companies and financial institutions around the world.

SWIFT Customer Security Program (CSP): Deloitte benchmark study

Through our CSP Benchmark study, Deloitte is able to collect results of independent CSP assessments from more than 500 BICs representing almost 100 Swift infrastructures.

Swift CSP applies to almost 4,000 organisations and represents 12,000 BICs globally across the Swift network. It is important you complete the annual attestation and meet these control objectives. This is an exercise in protecting your own Treasury operation and organisation, and every other organisation in the network.

Evolution of CSP for corporates

Increasing compliance requirements for corporates, like the Swift Customer Security Programme, has resulted in higher cyber security maturity at those organisations. Frameworks like the Swift Customer Security Control Framework (CSCF) has resulted in improved control in the following areas.

- The adoption of multi-factor authentication for log in to payment related applications at service providers has improved.
- Introduction of the CSCF has led to overall improved security of PCs as Swift expects those to be controlled as well (e.g. patches, hardened, logged). This applies also for organisations that connect to Swift through a provider.
- The standard for strong passwords has been raised and is more in line with best practice thanks to the requirements from Swift.

2023 SWIFT Customer Security Program Deloitte Benchmark

Deloitte prepares on a yearly basis a global Swift CSP benchmark. This aggregates results from the majority of assessments we perform globally. We assess controls not only as compliant or non-compliant but also assess the maturity of the control compliance. Between an initial assessment and a final assessment after remediation of potential non compliances organisations increase their compliance and cyber security maturity.

Below data represents the results for organisations that connect to Swift using a B type architecture. These represent mainly corporates and a few smaller financial institutions.

Rising cybersecurity risk

The spotlight on compliance with Swift CSP objectives shows we must change our mindsets. All forms of compliance and governance exist for good reason and cybersecurity must be high on the corporate agenda, with a corresponding low-risk appetite.

The uptake in adopting digital Treasury technology, the growing connections between organisations, financial institutions and the increased volume of transactional activity, tells us that cybersecurity will remain a high priority. Treasury technology implementations must keep cybersecurity high on the agenda and IT stakeholders should be involved early on and throughout the project. As the capabilities of cybercriminals advance, there is a greater emphasis on Treasury developing its relationships with IT stakeholders to ensure that Treasury plays its part in protecting the organisation.

What new, broader approaches can corporates take? Can we get ahead of cyber criminals?

Cyber AI can help organisations respond faster than attackers can move, anticipate these moves and react to them in advance. Cyber AI technology and tools are in the early stages of adoption.

AI's ability to adaptively learn and detect novel patterns can increase detection, containment, and response, easing the burden on security operations analysts, allowing them to be more proactive. It could even help organisations prepare for the development of new or more advanced AI-driven cybercrimes.

Please get in touch with Tom Tarrant to find out more about SWIFT or Technology Controls and how our team can help you.

FX risk management in volatile times – the importance of technology

Data gathering completed

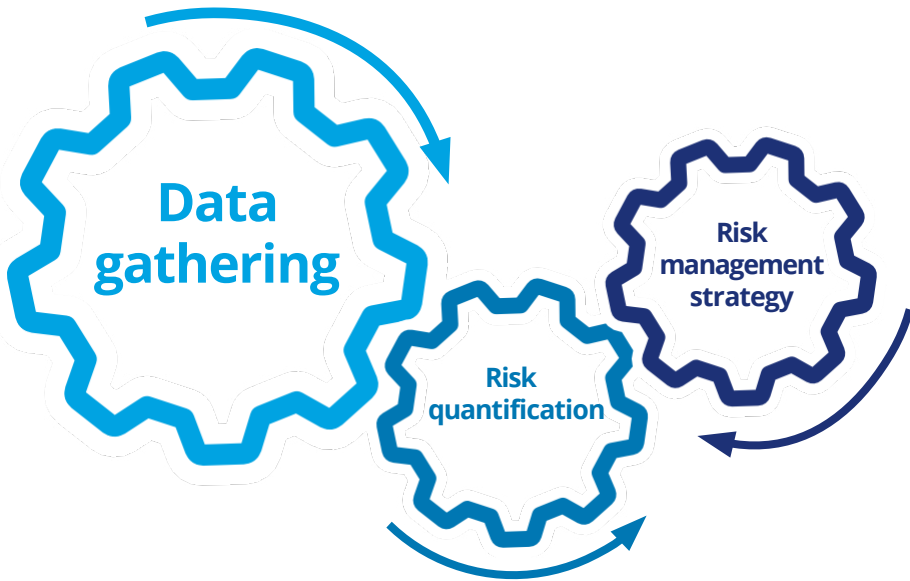
Data gathering is at the core of successful corporate risk management. It is essential to ensuring that underlying risks are identified in a timely and accurate manner. Data is central to managing risks, from daily management of the business and assessing a business prior to an M&A transaction, or as part of an equity or debt market transaction.

There are four core elements when considering the quality of the data underlying management decisions. These are:

- Accuracy
- Appropriateness
- Timeliness
- Ease of collation

Accuracy of data

Accurate data is fundamental when ensuring risks are appropriately managed. If data is not accurate, risk management decisions can be flawed. Once the level of accuracy falls below a certain level, the potential FX impact may exceed the FX impact of FX rate volatility itself. Hedging may become inappropriate or even counter-productive. On the right, you can find some of the common challenges around the accuracy of data.



Challenge	Potential impacts
Underlying transactions are not booked in the correct currency (for example, EUR sales are reported as USD sales in a GBP functional currency business).	FX risk to the business is over or understated resulting in increased risk to the business.
Exposures are spread across the business, numerous systems, and many different people in the organisation.	Reported FX gains and losses do not reflect the full impact of FX.
Ability to forecast exposures may be limited by the lack of strong overall cash-flow-forecasting processes or the uncertainty around currency of future exposures.	Debt covenants are breached as the impact of FX is not correctly reported.
Data is not presented to the appropriate level of granularity (e.g., exposures are not reported in the correct time buckets due to incorrect booking or payment terms within the system).	Hedges are not taken for the correct time period so need to be rolled forward or closed out resulting in increased P&L volatility.
	Debt may be raised in the wrong currency resulting in an unhedged FX risk.

Appropriateness of Data

The right data must be collated to measure the underlying risk. For example, the data that is needed to determine the translational risk in the business will be different from the data needed to manage the transactional risk. The table below summarises the key data requirements for transactional and translational exposures.

Exposure	Due to	Clues/Examples	Accounting
Translation	Subsidiary accounts denominated in a currency other than the Group reporting currency	<ul style="list-style-type: none"> Global operations/existence of foreign subsidiaries Manufacturing/offices in multiple countries Subsidiaries in countries with a different reporting currency 	<ul style="list-style-type: none"> P&L consolidated at the average FX rate for the period. Balance sheet consolidated at the closing FX rate for the period.
Transaction	Transactions executed in a currency other than the local currency	<ul style="list-style-type: none"> Exports to/imports from countries with a different currency Production in low-cost regions and global sales Commodity linked costs (i.e., currency of underlying commodity price) Inter-company trading (i.e., production in UK, worldwide sales) Export invoices in local currencies (underlying price may be based on a foreign currency). 	<ul style="list-style-type: none"> No impact on P&L, change in value recorded in equity. Recorded at the spot rate on the day of the transaction, or at the average FX rate for the period. FX gains and losses recognised in P&L.

Timeliness of Data

- Timeliness of data is crucial to supporting correct decision-making. If data is outdated, risk management decisions may not appropriately address the actual risks in the business.
- In some cases, the hedging horizon might extend beyond the financial planning or forecasting cycle. Certain assumptions must be made to reduce the risk of being unhedged.

Ease of collation of Data

- For companies with many legal entities, established in different jurisdictions, it is important to ensure that data can be retrieved, e.g., stored in Treasury Management Systems (TMS) and extracted when needed.
- When data is stored in different systems, processes need to be in place to allow it to be retrieved efficiently and consolidated accurately.

Challenges in data availability

Implications

No central depository for Debt Agreements	<ul style="list-style-type: none"> It can be time consuming to locate loan agreements, especially if debt is raised in multiple legal entities. This may impact or delay decisions on refinancing, or M&A transactions. Clauses impacting financial covenants (i.e., definition of applicable rates), or triggering repayments, are not located in one place in debt agreements.
Multiple systems for storing data across the business	No consolidated view of exposures across the business resulting in inefficient risk management processes
Local restrictions on accessing data within countries	In certain jurisdictions with restrictions on cash movement or foreign exchange controls, it is important to gain visibility over local data stored in the country.

Risk quantification

It is relatively easy to implement a hedging programme that considers and manages every FX exposure in isolation. However, this can be a time consuming and costly exercise from an operational and financial standpoint and might not produce the best return on investment. Today, many companies are moving away from programmes that focus on individual exposures in isolation. Instead, they are choosing more sophisticated, data-driven approaches, such as Cashflow-at-Risk (CFaR). These CFaR programmes aim to understand the degree to which some currencies may move in alignment with each other, resulting in potential natural offsets or increased risk.

Besides the size and direction of the cash flow exposure, there are several market dynamics that can influence the future profitability of a business. These market components, such as forward rates, implied market volatility and correlation between currencies should be understood and incorporated into the risk assessment, and the resulting hedging decisions.

Forward rates are mostly driven by the interest rate differential between two currencies to a future date and, as a result, determine whether you can fix a future currency conversion at a cost, or at a more beneficial rate, compared to the current spot rate.

Implied volatility is extracted from FX options traded in the market. It is a good indicator of how the market perceives the risk of currencies moving in future months and how this should influence hedging strategies. In comparison to the “historical” volatility, the “implied” volatility reflects market expectations impacted by current affairs such as monetary policy changes, and fallout from banking

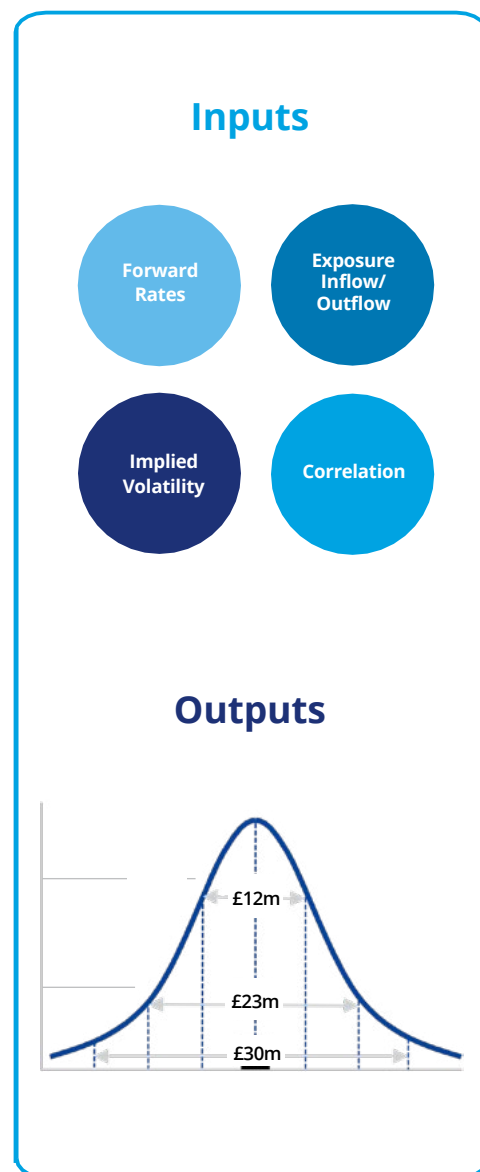
collapses, which are likely be different to actual historical volatility rates achieved in the past.

Correlation describes the extent to which two currencies have historically moved in tandem with each other. Correlation can be beneficial, neutral, or detrimental for an organisation and it cannot be ignored. For example, if EUR weakened against GBP, based on historical correlation, it would be likely also for PLN (Polish Zloty) to weaken against GBP, provided the correlation holds. If a company is net long in both EUR and PLN, this could be detrimental for the organisation since the profitability in both currencies would decline at the same time.

On the other hand, if a company is net long EUR and net short PLN, there would be some natural offsets for the overall risk, if correlation holds. This information should be taken into account when making hedging decisions as, for example, the above offsetting benefit would be neutralised if the company decided to hedge one currency, but not the other.

Cash flow-at-Risk (“CFaR”) Analysis

Some companies decide to use all this information as inputs for their simulation models. One approach for such analysis is to run a Monte-Carlo Simulation, which entails using a suitable technology system to run 1000's of simulations, to quantify the impact on the profitability of the business. The analysis would help the company conclude that, for example, 99% of the time, the expected profitability could vary by +/- £30m as a result of FX changes. Low volatility environments tend to produce lower CFaR results, while highly volatile markets can present increased risk.



Risk Management strategy

Once a company has assessed their risk position, they can compare the quantified, worst-case scenarios against the risk tolerance levels of the Board and shareholders. Based on the strategic objectives of the organisation, companies can then determine an appropriate hedging strategy, that considers account relative risk reduction and cost of hedging.

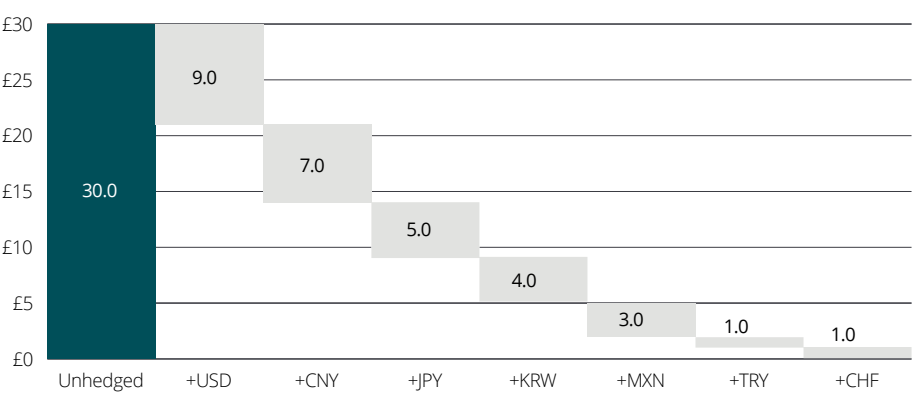
Risk tolerance

Depending on the risk-to-overall profitability, and the company's tolerance for risk, the company may decide whether the Cashflow-at-Risk is significant or not. This will help them decide if they can implement a hedging strategy or remain unhedged, possibly monitoring the risk and re-running the analysis on a periodic basis.

Implementation of a streamlined hedging programme

Treasurers should use the above analysis (Cashflow-at-Risk or other) to identify the biggest contributors (exposure types, or specific currencies) to the overall risk and structure the hedging programme accordingly. By focusing primarily on currencies that generate the most risk, the number of hedging transactions can be reduced, together with the related hedging costs (spreads/margins and operational execution costs).

Analysis on key contributors to risk



In some cases, hedging costs for certain specific currencies might outweigh the incremental risk reduction from the hedge, so it may be preferable to leave those currencies unhedged.

Companies can streamline their hedging programmes, reducing the number of hedging transactions and the currencies hedged. In some instances, a company may focus on hedging only their transactional risk exposures, leaving the translational exposures unhedged. By focusing on a specific risk component, a company could run the risk of reducing beneficial offsets between different exposures (such as transactional and translational). In the most extreme cases, hedging only the transactional exposures could even result in an increase in the

overall aggregated risk position. But this defeats the purpose of hedging in the first place. It's essential to have a complete view of the aggregated risks, and a deep understanding of various risk exposures, as well as any inter-dependence between them.

Please get in touch with Paulo Esposito to find out more about hedging and risk management and how our team can help you.

The Deloitte Method – Project Success Methodology

Whether you are integrating an ongoing finance technology transformation program or embarking on a standalone Treasury technology implementation, there's always a need for robust project governance and project management. These are key elements that ensure all tasks and milestones are achieved on time, while identifying and managing risks.

But what about the execution of the project tasks themselves? Are there any opportunities to accelerate? We deploy technology, and best-practice workflows and business-focused solutions, faster. As advisors, it is our goal to make an impact that matters for your business, while optimising processes that add to your organisation's success.

SaaS solutions can take up to 12 months to deploy fully with the promise of core functionality within the first few months. Although this is achievable, the result might be a basic version of what the Treasurer envisioned, as opposed to the best practice, automated, end-to-end set up that the whole Treasury team needs.

We believe that best practice configuration is standard and expected by clients. This means our point of view on how to run Treasury operations in a TMS needs to be formed ahead of time. This is our focus and represents added value for our clients, as an opportunity to accelerate project timelines and assure project success. The following conditions create challenges for Treasury technology implementations:

- **Time constraints:** We see an increased pressure on traditional implementation timelines and day 1 readiness, especially in M&A
- **Outdated delivery models:** Implementation methodologies being used are slow to deliver the impact that corporates need to see – and are often promised.

Some of the common unrealised opportunities that can still be worked on:



Leveraging existing and new **digital technologies** to increase the value of the Treasury's function to the organisation (e.g. going further than a basic set-up and designing processes and automations within existing applications)



Taking a more ambitious and exhaustive approach to the **automations** and end-to-end processes that can be achieved with the technology



Greater **data-driven insights** and decision-making



Using technology to **manage financial risk**, not just cash and liquidity



Putting digital adoption higher on the agenda and using technological advancement as a means of protecting against operational stress and failure. This is reflected in the results of our Global Treasury Survey: having an organisational culture and infrastructure each with a digital core can have a substantive impact on stabilising the organisation. This will come with its own considerations.

Deloitte Method Project Governance

Each organisation already has its own project governance framework that we can work with. In our experience, there's flexibility within these frameworks to create the right mix of project management methodologies to accelerate and succeed with a technology implementation.

Project Management Methodology

The right methodology takes into consideration the size, complexity, risks, and target timelines for the project. The methodologies described below are two of the most common methodologies we see being implemented. Each implementation will require its own unique approach.

Deloitte can help a business realise its implementation's value by using our experience to advise on the most suited project methodology for an implementation.

Project management will govern the order in which the implementation process is achieved, and the timescales involved in the process. There are various methodologies that can be used to manage a project. The most appropriate will depend on a number of factors such as the size, complexity, and risks of the implementation, as well as the business's timeline.

A “gated” or stage-gate project methodology is one which splits the project’s implementation into stages based around key decision/design points in the implementation. This is ideal for large organisations with complex implementations as it can split the implementation into smaller and fewer complex “sprints.” This can reduce the risk of the implementation encountering problems. At the end of each stage the project would be reviewed to ensure what has been implemented works and that the project can proceed.

On the other hand, a “flexible” or “agile” project methodology is one in which all areas of the implementation start at the same time with a singular end date as the goal.

This approach can progress the implementation at a significant pace and be well-executed. However, due to the risks involved, it requires a thorough planning period to ensure the implementation doesn’t encounter any snags along the way. The planning required grows exponentially with the complexity of the implementation. This methodology is ideal for smaller implementations or those focused on a single area of Treasury.

Value based design:

- Understand the business requirements which will be needed from out-of-the-box solutions
- Run design workshops for all other client specific activities

Accelerated Adoption:

- Tried-and-tested setup from Deloitte database ready to replicate

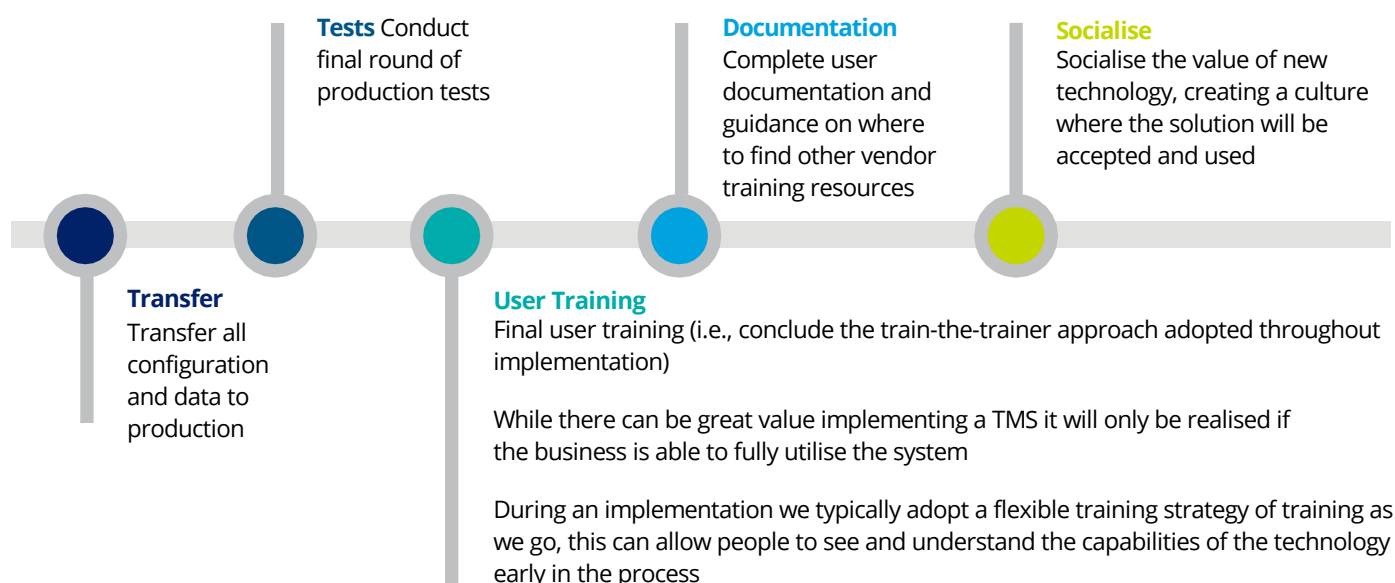
- Implement complex and client/industry specific requirements
- Download all pre-packaged interfaces
- Implement complex business requirement.

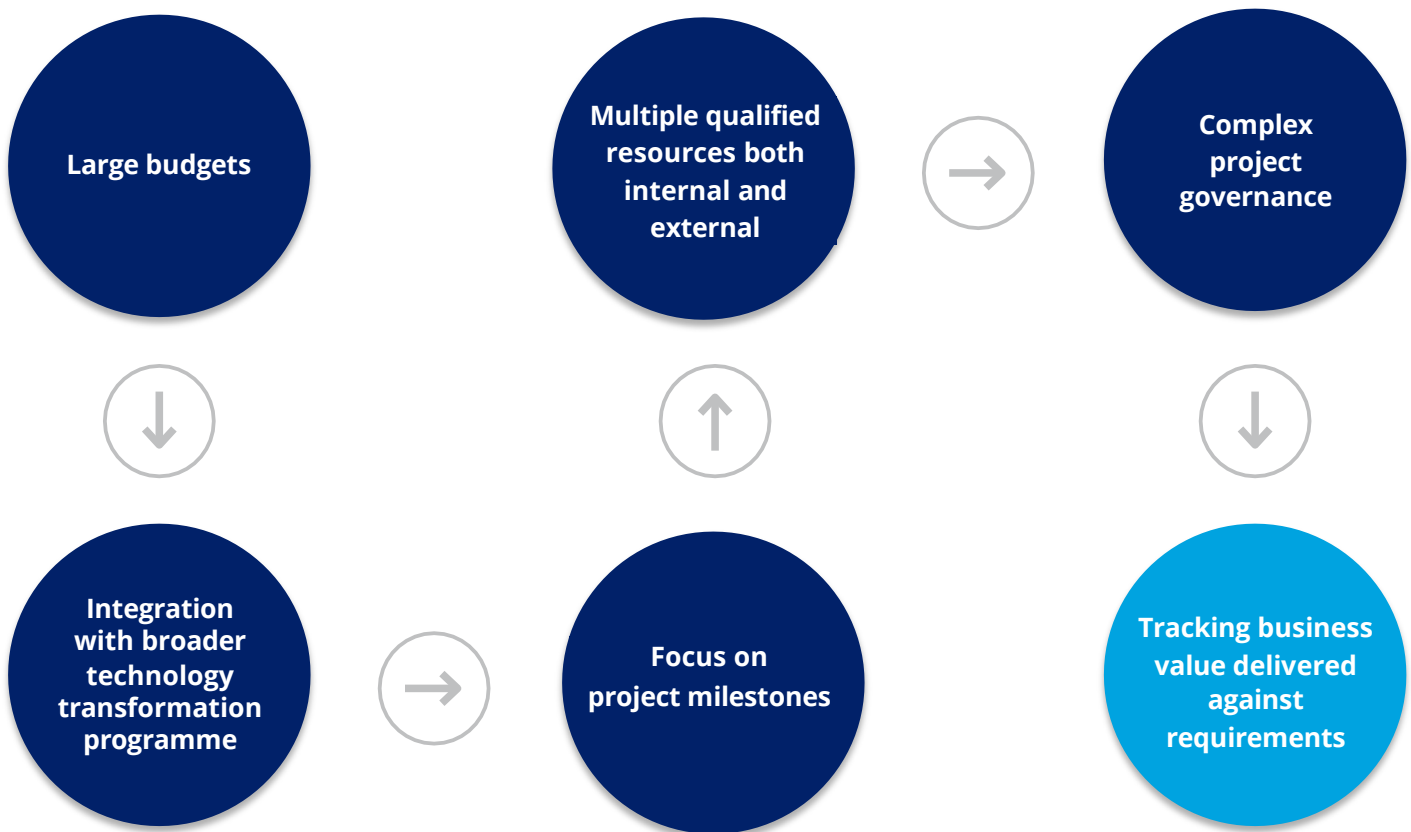
Testing cycles:

Testing is a critical factor in any system integration design. It’s important to ensure that a system is functioning as intended at all stages of the implementation process. This can save time and effort fixing problems that would have impacted the go-live stage. Deloitte employs a variety of testing methodologies to achieve this goal, which can be tailored to individual implementations depending on the complexity and risks involved in the implementation.

Transition Phase: Maximising the value of Treasury technology implementations.

Large and complex technology transformations will comprise of :





We are moving resources towards value-added processes by reducing known or repetitive implementation requirements, while minimising complexity. This can lead to:

- Reduced upfront costs
- A tailored focus on the client's business processes
- Fewer qualified resources required
- Faster implementations.

Implementing standard requirements to automating client-specific/high value-added processes will give our clients:

Heavily reduced timelines:

A significant portion of business requirements will be delivered as part of Deloitte's standard *out-of-the-box* database

- **Focused experienced resources** as standard configuration grows and is automated, with structured testing and migration of specs to an individual client-production environment
- **Reduced overall costs** as standard business requirements will be preconfigured and typical project pain points are automated
- **An emphasis on what makes them unique.** This includes dedicating time to high-priority processes and activities which drive value for their individual business

Deloitte's best practice Proof of Concept - Deloitte defined configurations using your data.

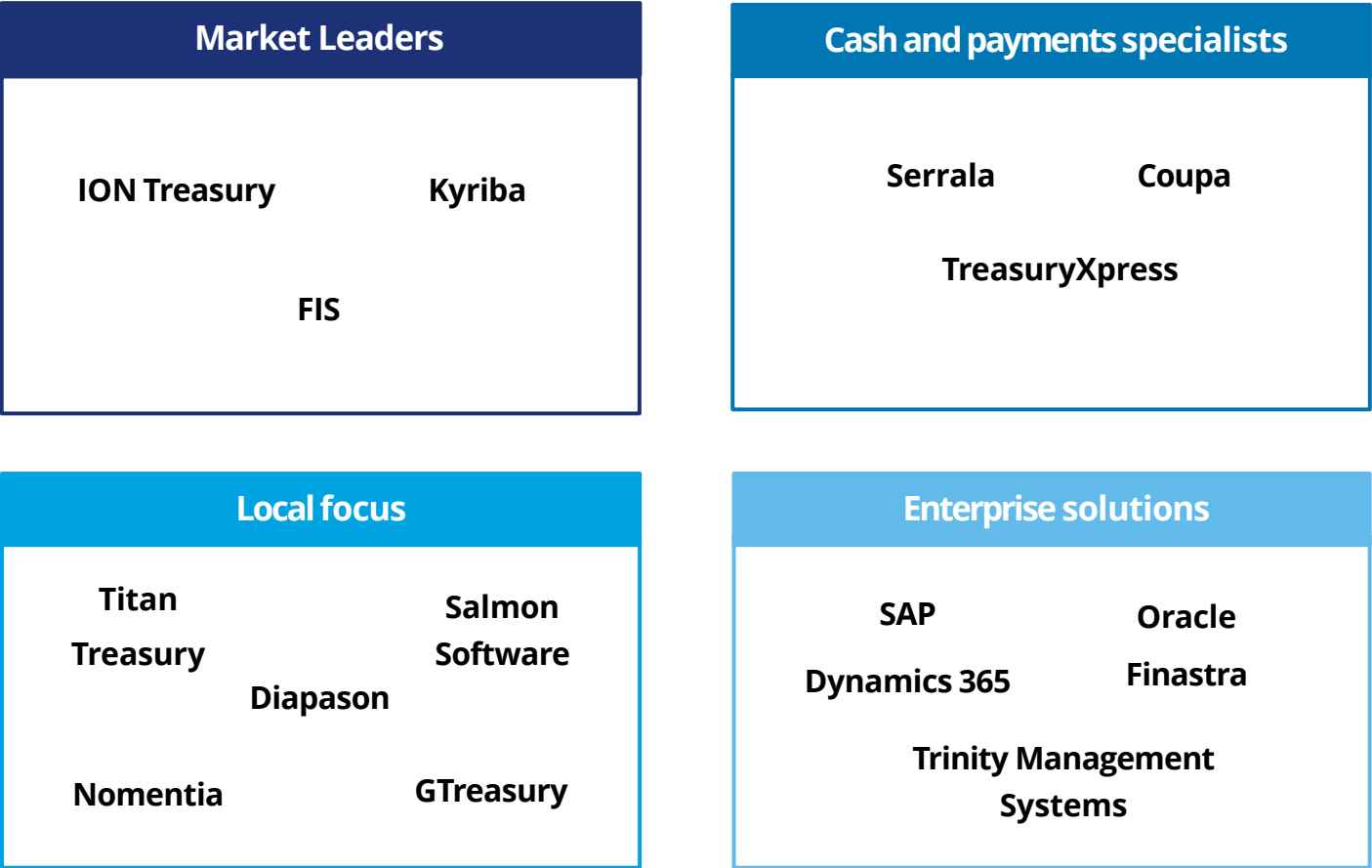
How the initiative can help:

- Prioritises client-specific or complex processes in the vendor solution

- Targets improved management information and business intelligence to facilitate decision making
- Maximises opportunities for automated processes
- Automates the majority of the solution testing
- Ability to commit to target savings and key metrics
- Enhanced insights during client contracting phase
- Able to shift savings towards additional scope and modules
- Prioritises change management, training, and adoption
- Streamlines training and reduces the amount of time/support required to transition clients to the vendor's Customer Support team.

The Vendor Market

The Market



Whether it be the trends over the last 12 months or the last 12 years, the many ebbs and flows of the market have resulted in a rich market of sophisticated technology solutions. While addressing the same high-level needs, these solutions are diverse in their volume, complexity and, most notably, method of deployment.

In terms of the categorisations, we have:

- Market leaders:** Vendors who are continually involved in new implementations or are already strongly present in the market. These solutions have a broad range of functionality while maintaining high levels of investment across the board
- Cash and payments solution specialists:** The core of any Treasury function is cash and payments. Certain providers tailor themselves to that and only that for a specialist focus and ease of implementation and costs
- Local focus:** Solutions that may be broad or specialised but are only offered in localised regions due to specific regional requirements or presence
- Enterprise solutions:** Treasury will be only a module or a single focus area, with the overall functionality stretching across the entire business or finance department.

Single tenant solutions are more configurable, and functionality can be developed specifically for the client. These can be installed and maintained on client servers, or privately hosted on a client or vendor cloud. Multi-tenant solutions have pre-configured functionality. These are hosted and maintained on the vendors' own cloud environment where every client runs a version of the same software. This has the distinct advantage of reducing the burden on IT, which is why we're continually seeing the market move towards the SaaS space.

Another factor to consider is the complexity or range of offerings provided by the TMS itself. A good metric of this will be the time it takes to implement a typical project of their size.

What we now have is a market that seems less consolidated or monopolised than it was a few years ago. However, there is no denying that the big players continue to be Kyriba, FIS, and ION in terms of new deployment (in order of number). However, it is interesting to note that historical ERP players are now developing their own Treasury functionality and strategic alliances that can rival typically specialised TMS' in a battle that is getting closer every year.

Key

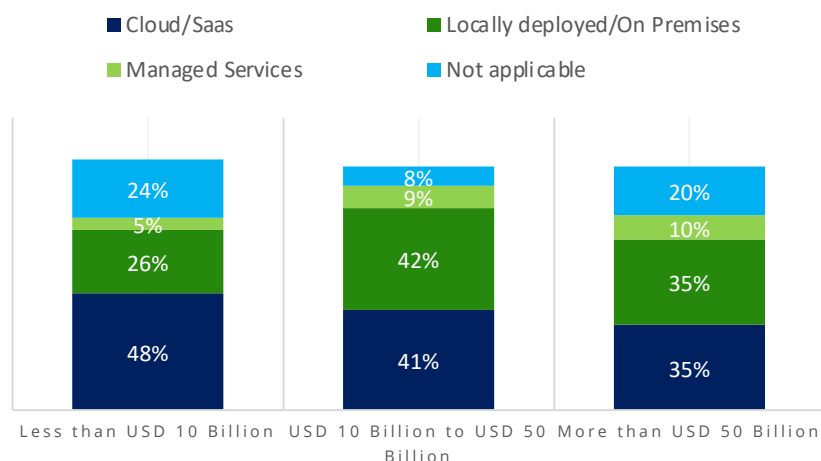
- Market Leader
- Cash and payments
- Local player
- Enterprise

In boxes – typical time to implement

Product	On-premise	Single tenant cloud	SaaS
Coupa			3-9 months
D365	12-18 months		
Diapason			6-9 months
Finastra	9-18 months		
FIS (2 solutions)	FIS Quantum 12-18 months		FIS Integrity 6-12 months
GTreasury			6-12 months
ION Treasury (7 solutions)		City Financials 3-6 months	Reval & Treasura 3 - 12 months
	IT2 and ITS - 12-18 months		
	Wallstreet Suite & Openlink - 12-28 months		
Kyriba			6-9 months
Nomentia			6-9 months
Oracle	12 - 18 months		
SAP	12 - 24 months		
Salmon			6-9 months
Serrala			3-6 months
Titan Treasury			3-6 months
TreasuryXpress			3-6 months

Trends in system deployment

By revenue



The above is also interesting because, despite the move towards Cloud and SaaS, a surprising number of companies with mid-market revenue are still operating on premises, when we would expect them to operate on Cloud. We believe the rationale here could be that while smaller revenue companies with rising revenues in recent years are implementing their first TMS' as SaaS, mid-market companies are still on legacy systems that will need to be replaced sooner rather than later. This indicates a high level of potential growth in the market.

What comes next remains to be seen. But based on the fluid nature of TMS' and fluctuating priorities in the current climate, we are expecting a fast-changing landscape.

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