2018
ANALYST REPORT

TREASURY & RISK
Management Systems

- Eliminate Redundant & Manual Workflows
- Centralize & Streamline Treasury Functions
- Increase Visibility & Control Over Cash Flows

THE DEFINITIVE GUIDE TO TREASURY & RISK MANAGEMENT TECHNOLOGY SOLUTIONS

This 2018 Treasury & Risk Management Systems Analyst Report is part of Strategic Treasurer's annual Analyst Report Series.

STRATEGIC TREASURER
Consultants in Treasury

ADVISE & INFORM

Our mission is to elevate & enhance the practice of treasury by advising individual clients & informing the industry at large.

We hope you enjoy this report & find it useful. Thank you for reading.

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STRATEGIC TREASURER
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Since Strategic Treasurer was founded in 2004, we have helped hundreds of corporate clients face real-world treasury issues. Our senior consultants have practical, hands-on experience in corporate treasury environments and have held senior management and leadership roles across numerous industries. Strategic Treasurer's consultants are known not only for their expertise in the treasury space, but also for their responsiveness to client issues, comprehensive follow-through on every project, and deep understanding of the industry. Our focus as a firm centers on maintaining true expertise in the treasury space, which is accomplished through a combination of annual industry surveys, an ongoing discovery program, and active engagement with both corporate clients and treasury technology vendors. As a result, our awareness of the market is both global in scope and rich in detail.

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Why is this Report Necessary?

Treasury technology has become a pivotal future within the financial environment. Whereas the first treasury management systems (TMS) were too expensive for most organizations and offered only limited functionality, the industry has evolved significantly since these early days. Today, the treasury and risk management systems (TMS/TRMS) landscape consists of products that are available to organizations of all sizes, at a variety of costs, and with a broad range of functionality that spans basic cash management and payments to sophisticated risk management and analysis.

While this widespread growth in the technology realm has alleviated many of the operational hurdles that treasury once faced, such innovations have not come without their own share of challenges. In fact, many treasury and finance practitioners today list technology as a major source of headache and confusion. Whether it's selecting the right vendor, training staff on how to use the system, or integrating the TMS with other solutions, there are a number of areas where treasury can experience technology-related setbacks or frustration. And as treasury technology continues to see greater use within the industry, these problems are increasingly manifesting themselves in companies across the globe.

In order to aid practitioners as they seek to understand and ultimately leverage treasury technology, this analyst report aims to provide a thorough overview of the TMS space. This includes insight to the various types of treasury technology that exist today, an overview of the primary functionalities offered through modern-day solutions, and an evaluation of the key challenges to consider as treasury technology is implemented. Finally, this report will provide analysis on some of the leading TMS vendors currently operating within the space, including each company's market position, product set, customer service structure, and global footprint.

Our hope is that industry practitioners can leverage this report to further their knowledge of the treasury technology landscape and, ultimately, to make more accurate and effective decisions regarding their use of a TMS. We hope you enjoy this report and find it useful. Thank you for reading.

Treasury Technology is a Source of Confusion

Treasury technology has fast become an integral component of many practitioners' daily lives. However, challenges related to their use and ongoing development are a significant source of confusion for treasury, especially given the pace of innovation and change that is occurring today.

Treasurers Need Access to Up-to-Date Information

A TMS implementation today looks nothing like an implementation from a decade ago or even five years ago. Given that most companies undergo a technology overhaul once every 10 years, practitioners need access to the latest data and insights in order to make accurate and informed decisions.

What This Report Offers

This report provides practitioners with a comprehensive view of treasury technology, with a focus on treasury and risk management systems (TMS/TRMS). Current challenges, trends, and usage rates are analyzed, along with thorough coverage of some of the leading vendors operating in the space today.

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TMS Development Overview

While treasury management systems (hereafter referred to as "TMS") have been around for decades, the transformation that has occurred in the space over time has resulted in today's solutions being significantly different than the first offerings. When the first TMS (originally referred to as a treasury workstation or "TWS") was introduced in the 1980s, Microsoft Excel had yet to be developed, and many treasury operations were still paper based. At the time, basic wire or funds transfer capabilities, coupled with rudimentary cash positioning and liquidity management, were the primary functionalities offered. Although these original solutions were often clunky and too expensive for most organizations, they still represented a massive breakthrough in the financial technology space and served as the cornerstone for further development within the treasury software arena.

In the years following these first offerings, a number of innovations occurred within the space. Of these developments, perhaps the most significant was Microsoft Excel. Excel was introduced as a spreadsheet based application that provided momentous advantages over paper based processes. Due to its low cost and significant value-add, Excel quickly became the go-to tool for treasury and it continues to be one of the leading applications in use by organizations today. Beyond Excel, technological advancements including widespread use of the Internet and the introduction of SaaS based or "cloud" technology also helped drive additional growth within the TMS space. Over time, an influx of new vendors and products led to the expansion of functionalities to address everything from cash management and payments to sophisticated risk management, FX trading, forecasting, and all manner of treasury related operations.

Since the early 2000s, the rapid influx of new TMS vendors to the space has helped spur the development of a broad range of available service options and business models. This "democratization of technology" has created a TMS landscape where today, small and mid-sized enterprises (SMEs) all the way up to Fortune 500 companies are provided with treasury solutions that offer the breadth of functionality they require at a cost that matches their budget.

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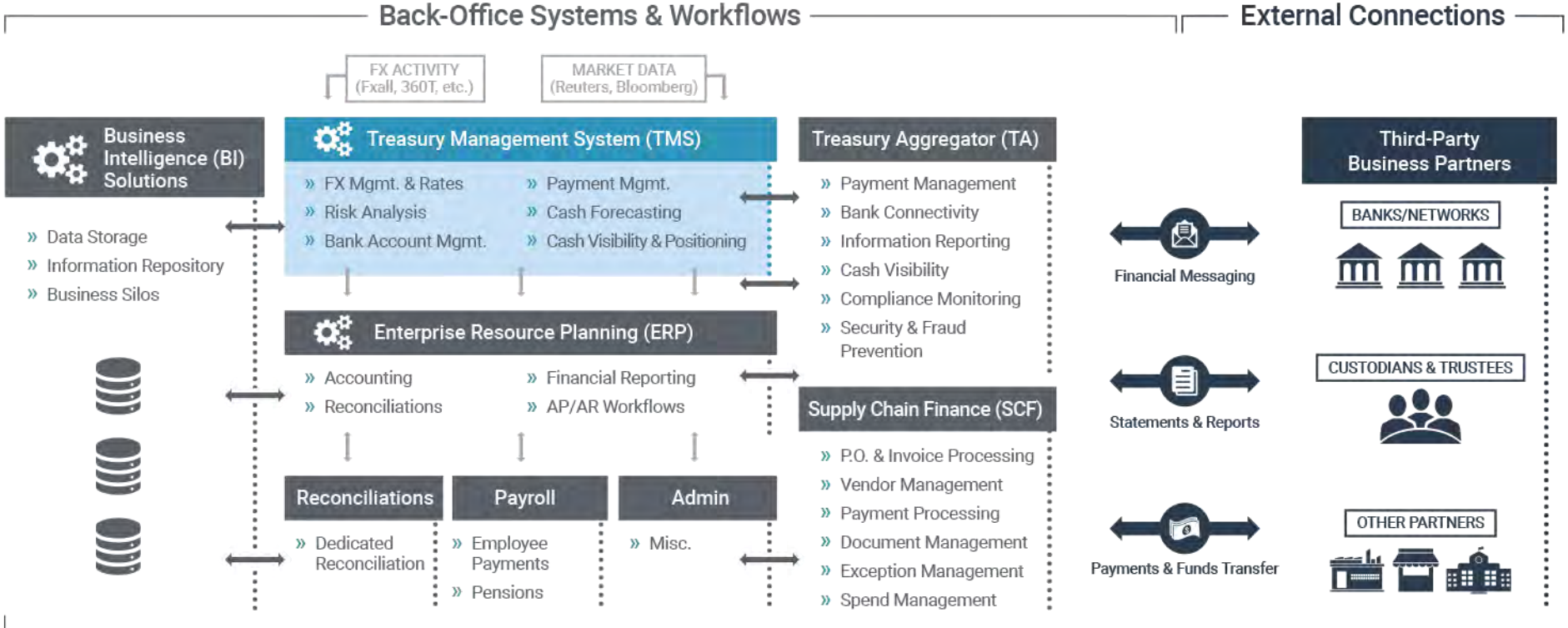
The Treasury Technology Landscape

ENTERPRISE VIEW

As treasury evaluates the use of a TMS, they must keep in mind how the solution will fit into their broader technology stack. They must also consider what functionalities the TMS will perform relative to their other systems. Configuring the capabilities of each system to function alongside the others can be quite complex, especially considering the broad range of technology solutions that currently exist within the market and that could be installed within an organization. Today, the financial technology (fintech) landscape consists of hundreds of vendors and thousands of available solutions. While many of these solutions are specialized in areas such as compliance or reconciliations, there are other more comprehensive solutions that address the full scope of finance or treasury operations. Such technologies may be installed directly at the client site, hosted externally via a cloud (SaaS) platform, or even downloaded onto a mobile device. Depending on the level of functionality purchased, system use may be limited to just a few employees or span numerous departments and hundreds if not thousands of employees internally. While the unique technology environment of any organization varies, the graphic below provides an overview of a potential configuration for a larger, complex corporation. The graphic depicts the various types of systems that could be used to drive efficiency and automation, and provides an overview of key functionalities addressed through each solution. Additionally, the role of a TMS is highlighted here for purposes of emphasizing its position within an organization's broader technology stack.

SAMPLE TECHNOLOGY INFRASTRUCTURE



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TMS VIEW

While the previous page provided an overview of the broader technology landscape, this page focuses specifically on the functionalities provided through today's TMS offerings. The TMS landscape developed by Strategic Treasurer identifies six primary service areas or sectors that a particular solution could seek to cover. These sectors include cash management, payments, compliance and security, FX management, debt and investment activity, and risk management. In most circumstances, a TMS will offer a degree of cash management functionality (updates to cash balances / positions) and then will build out additional services and modules based off these functions. This is because cash management is by far the most commonly needed and utilized functionality for treasury departments. Due to this reality, cash management often serves as the core framework from which additional TMS functionalities extend. While many TMS vendors specialize in the cash management arena, others may focus on sectors such as payments, risk, or compliance. Across the full spectrum of providers, the unique mix of functionality offered can vary greatly. For instance, one vendor may offer specialized cash management and payments components, but not include any functions related to risk or FX trading. On the other hand, some vendors may offer general cash management and payment services, but expand the scope of their offering to include risk, debt, and compliance functionality. As the array of services offered through each vendor and solution varies, treasury should closely evaluate each provider to determine which mix of functionality most adequately addresses their unique requirements and set of needs.

TREASURY TECHNOLOGY LANDSCAPE

Payments
(Add-on Functionality)

Vendors specializing in payments maintain a large number of bank connections through SWIFT, other networks, and direct connections. They are capable of managing all payments and reporting processes for the full scope of a client's banking activity.

Compliance & Security
(Add-on Functionality)

Core compliance features include monitoring of all payments with OFAC sanctions lists and clear documentation workflows to handle KYC policies and other requirements. For security, many TMS vendors provide encryption on data at rest and in transit, while also allowing for multifactor authentication, dual controls, and other components to be configured.

FX Management
(Add-on Functionality)

Vendors that offer FX trading and analysis functionality tend to provide deep levels of integration with trade platforms so that clients can manage the entire trade cycle centrally. These vendors also offer functionality for a wide array of instrument types, such as Forwards, Futures, Options, Spots, and Swaps.

Debt & Investments
(Add-on Functionality)

Vendors that focus on debt and investments cover a broad set of instrument types (CDs, money market mutual funds, commercial paper, bonds, etc.) and provide opportunities for analysis across a number of customizable metrics and client-specific breakouts.

Risk Management
(Add-on Functionality)

Vendors specializing in risk management focus on providing the highest level of risk analysis and hedging functionality, with comprehensive dashboards for analyzing company-wide and project-specific exposures. Many also offer stress testing, value-at-risk, and limits monitoring components.

Cash Management & Visibility (Core TMS)

As cash positioning and forecasting are the functionalities most commonly needed by treasury teams, cash management modules often serve as the core from which additional TMS services extend.

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Who Needs a TMS?

For some practitioners, it may be difficult to identify a situation where leveraging a TMS would prove useful. To address this, the following list offers several examples of when and how a TMS could simplify or enhance treasury operations.

YOU HAVE GROWN RAPIDLY AS A COMPANY AND SPREADSHEETS CAN NO LONGER SATISFY YOUR OPERATIONAL REQUIREMENTS.

As a company's inception and early on in their development, it may be that financial personnel can manage the entirety of their operations using spreadsheets. This is normally a cost-effective option at the onset, but as a company grows, the complexity inherent in their financial operations tends to increase as well. More banks, bank accounts, and currencies come into use, payment volumes grow, and new risks surface out of these changes. This ultimately leads to a situation where treasury must upgrade their technology stack to include systems capable of providing additional functionality beyond what Excel offers. While it may take time for a company to arrive at this juncture, it is the inevitable result of continued growth.

YOU ARE USING DISPARATE SYSTEMS TO PERFORM CERTAIN TREASURY FUNCTIONS & WOULD LIKE TO CENTRALIZE THESE OPERATIONS THROUGH A SINGLE SYSTEM.

Whether it's due to multiple mergers and acquisitions, or the result of an ill-defined internal architecture, many companies today find themselves in the position of having siloed technology hubs across various business units or departments. For instance, a company acquiring another firm in Europe may find that this firm has their own ERP or TMS already in place, and now must find a way to merge all workflows through a central hub for better visibility and control. In these scenarios, treasury will typically either find a way to integrate the new systems with their existing architecture, or choose to adopt a 'central' solution to use group-wide and eliminate use of other ancillary systems altogether.

YOUR TREASURY TEAM IS UNDERSTAFFED & YOU NEED ADDITIONAL AUTOMATION.

It is no secret that many treasury teams today are small, with many departments consisting of five or less employees. Despite this limited staffing, the expectations and responsibilities placed upon treasury continues to grow as requirements related to fraud, compliance, and risk are coupled with existing roles in the working capital and payments arenas. This has led to an environment where nearly 1/3rd of practitioners today indicate that they do not have time to perform all their daily tasks. In these situations, leveraging a TMS to automate time consuming processes (i.e. payment generation) can free up valuable time for treasury and allow them to focus on more strategic operations.

YOU ARE FACING AN INCREASED THREAT FROM FRAUD & HEIGHTENED SECURITY EXPECTATIONS INTERNALLY.

While security and fraud prevention may not have been a primary driver for technology adoption in the past, it certainly is today. In fact, a recent survey saw 'security and control' ranked as the 2nd most important consideration for practitioners when selecting treasury software. Given the pandemic of fraud within the modern financial environment and the increasingly sophisticated attacks deployed by criminals, a TMS can serve as a valuable tool for keeping financial assets and information safe. With many TMS vendors beginning to build out enhanced fraud prevention tools as a pivotal feature of their solution, any department that feels their current security framework is inadequate should seriously consider how a TMS could lead to greater control across their operations.

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How Does a TMS Optimize Treasury's Operations?

DATA CENTRALIZATION: A SINGLE SOURCE OF TRUTH

Today, there is no single responsibility or task that treasury is relied upon to perform. Instead, there are a range of functions, from cash positioning and funds transfers to strategic hedging and risk management, that treasury oversees. And given that many treasury groups consist of no more than five or six employees, any opportunity for treasury to leverage technology to optimize and automate these tasks should be seized upon.

Providing these efficiency gains is where the modern-day TMS has proven particularly effective. By enabling practitioners to manage the entirety of their operations through a single platform, the result is that a single instance of data can be used to update multiple areas of operations at once. For instance, incoming bank reports regarding global cash balances can be used to generate cash positions, update cash forecasts, alter F.X. / hedging strategies, and allow practitioners to make strategic decisions regarding the use of working capital. This level of automation, as opposed to a workflow where treasury may have to pull cash balances and reports from multiple bank portals and then individually update excel spreadsheets or siloed information hubs, provides momentous time savings and, ultimately, significant cost savings as well. In an environment where 1/3rd of treasurers do not have time to perform all their daily tasks[1], this form of efficiency can be the driving force that allows treasury to quickly complete daily operational functions, thus freeing up time to focus on strategic analysis and planning.

CENTRALIZING FINANCIAL DATA

The data uploaded to a TMS can be accessed and shared across each specific module within the system. This means that a single instance of data can be used to perform virtually every function that treasury manages.

TMS MODULES

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BACK-OFFICE INTEGRATION & STP

Developing a technology stack that allows for the quick and easy flow of data is much easier said than done. From a company's outset, the use of multiple excel spreadsheets or documents for managing workflows and tracking financial information can introduce disparate processes early on. And as organizations grow, siloed information hubs become a more common theme as new technology solutions are added but never fully integrated with existing systems. For organizations operating with an ERP or TMS along with a BI solution and potentially other systems for reconciliations, supply chain finance, and compliance, keeping track of where information is stored and how it is disseminated can become overwhelming.

While the impact that a TMS will have on efficiency depends heavily on the ability of a company to properly integrate it with their other solutions, a successful implementation can prove incredibly advantageous not just for treasury, but for the organization at large. As each business unit relies upon the others for information, the ability to quickly disseminate reports and data from a TMS to another system (preferably in real-time) and vice versa means that all departments have access to the information they need to effectively operate. In recent years, fintech vendors have been able to leverage standard sets of APIs and other connectivity protocols to integrate their solutions with one another and with bank/third-party providers much more effectively and efficiently.

CORPORATE BACK-OFFICE TECHNOLOGY STACK

CONSIDERATIONS FOR TREASURY

- Which system collects each type of data?
- Where and how is data ultimately stored?
- What systems need to be integrated?
- How often is data transmitted between systems?

RATIONALIZING THE BACK-OFFICE

01 Modern-Day Tech Stack

While each back-office system may have its own set of workflows, many of these solutions operate using the same or similar sets of data, which makes integration and STP a very important feature.

02 Disparate Data Sets

Many organizations suffer from siloed information hubs in their back-office tech stack. This may be due to legacy systems not properly integrating with new solutions, or because improper implementations have resulted in disparate data sets being housed across each system.

03 Rationalizing the Back-Office

Intentionally structuring a technology stack with clearly defined and integrated workflows allows treasury to automatically pull the information they require from the appropriate back-office system. (i.e. ERP for sales data)

04 Standard APIs Can Help

In recent years, the use of standardized APIs across the fintech landscape is helping to streamline communication across systems. By using standardized APIs, vendors ensure that their systems can easily integrate with one another.

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STREAMLINING EXTERNAL CONNECTIVITY

External connectivity considerations for treasury include integration with bank systems or networks such as SWIFT, market data providers like Reuters/Bloomberg, and FX portals including 360t or FXall. At this point in time, many of the leading TMS vendors come pre-equipped with built-in connectivity to these sources so that information can pass seamlessly into their product for analysis and upkeep. In recent years, vendors, banks, and external data providers have been able to leverage standard sets of APIs and other modernized connectivity protocols to integrate their solutions with one another more effectively and efficiently.

For bank connections, treasury's considerations will vary depending on the unique mix of connectivity options they utilize (SWIFT, bank portals, direct [H2H], etc.) and on the array of formats they must maintain compatibility with. Given the breadth of these connectivity formats and channels, bank connectivity has become a pivotal consideration for firms when selecting a TMS and subsequently, is a major area of focus for TMS providers. Today, the leading TMS solutions have either partnered with specialists in bank connectivity (i.e. treasury aggregator) or have built out the required functionality on their own so that the full scope of connectivity channels and formats can be utilized without requiring multiple systems, confusing format translation processes, or other disparate workflows. Although a fair amount of work and cost is typically required during the implementation to ensure that message format translation and workflow integration is functioning properly, any organization with complex bank connectivity and market data/FX requirements would benefit immensely by leveraging a TMS that can automate these functions on their behalf.

STREAMLINING EXTERNAL CONNECTIVITY

BACK-OFFICE ARCHITECTURE

TMS External Systems Integration
Some TMS vendors have built out supply chain finance and aggregator functionality that manages all connectivity workflows to banks and vendors, as well as to market data providers, FX trading platforms, and investment portals. The top TMS solutions integrate these external solutions seamlessly into their workflows to the extent that all trades and funds transfers can be executed directly through their portal, and all subsequent statements, reports, and analytical features are updated in real-time across the platform.

EXTERNAL CONNECTIONS

Without Automation: While treasury can always access individual portals to manage trade/investment activity and execute payments, having to manually pull this information into their TMS can be cumbersome, error-prone, and time consuming.

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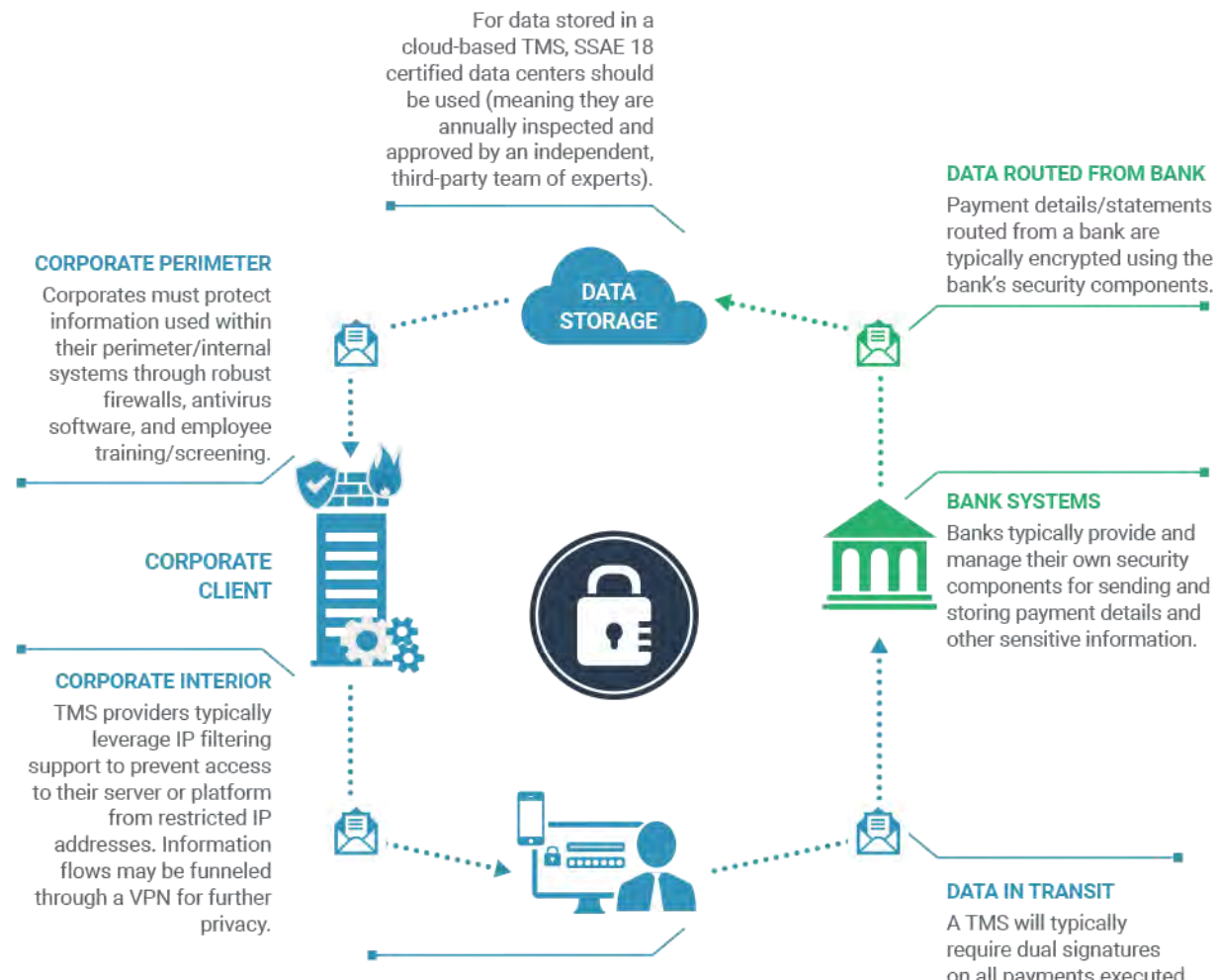
ENHANCED SECURITY & CONTROL

In recent years, the emphasis placed on security controls, particularly within the fintech arena, has escalated significantly. As fraudulent activity remains at high levels, protecting information in transit to or from a bank, as well as information that is stored internally in a TMS or related network/server, is of utmost importance. TMS vendors address these concerns in several ways. First, they must secure access to the platform itself. This is typically done by leveraging IP filtering support that restricts access to the server from unauthorized IP addresses, and by requiring the use of tokens, such as a key fob or USB drive, for users signing into the system. In recent years, the use of biometrics (i.e. fingerprint or retinal scans) has also seen increased use. In many circumstances, these techniques are leveraged together to create a multifactor authentication (MFA) process where TMS users must present a key fob or biometric scan in addition to a password/username to gain access to the system.

In addition to securing access to their network, a TMS must also protect information exchanged with banks and other external parties. To secure these workflows, most vendors will hash totals on payment information – a method of identifying any anomalous changes to values or account numbers that occur while messages are en-route to banks. Vendors may also require that payments over a certain amount (or all payments in general) have two signatures before being processed. As information flows to other internal systems, vendors may utilize a SSH File Transfer Protocol (SFTP) connection that is funneled through a virtual private network (VPN).

TREASURY TECHNOLOGY SECURITY COMPONENTS



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Navigating Your TMS Implementation

DEPARTMENTAL ALIGNMENT

It can be incredibly difficult to secure funding and support for technology implementations. When operating with a limited budget, treasury often finds that they must compete with other departments and as such, must develop a strong and effective business case to win over executives and other stakeholders. In these competitive environments, treasury's technology requirements may take a back seat to other projects, especially in cases where the implementation of a dedicated treasury solution is seen as an unnecessary expense. However, this is not the case. Instead, the implementation of a TMS would provide benefits not only to treasury, but also to accounting, IT, and financial executives.

When it comes to financial technology, the needs and requirements for each business unit will vary. However, in order for each department to obtain the information they need, each group's back-office workflows must be closely intertwined. For instance, accounting will need access to transaction information and data regarding the organization's various cash flows for purposes of updating ledgers and preparing financial reports. Given treasury's position over payments activity, a large portion of this information will come from directly from their systems. However, this information does not just appear to treasury all on its own. Rather, treasurers regularly spend large portions of their day gathering this data and must often manually pull statements from bank portals and other external sources if a dedicated solution for managing and automating these workflows has not been adopted.

Given the extent to which treasury is relied upon to provide financial information to other internal stakeholders, the simple truth is that enhancing the methods by which treasury can receive cash positions and market data will ultimately enable accounting and other departments to more easily obtain the data they need. And if a TMS is the best way to accomplish this, then the implementation of such a solution will ultimately benefit each group that relies on treasury for information. To emphasize this point internally, treasury should be prepared to communicate extensively with accounting, IT, and executives regarding their needs and how such needs can be better addressed through enhanced technology.

WINNING SUPPORT FOR TREASURY TECHNOLOGY INITIATIVES

Include Other Stakeholders

To help garner support for your project from executives and stakeholders, be proactive in engaging with other departments to identify ways in which the new project solution will meet the requirements of accounting, IT, executives, etc., rather than only focusing on treasury operations.

Work to Overcome Shared Obstacles

As other departments demonstrate the inefficiencies that they experience, treasury needs to document these challenges and work to identify ways through which their project will address the issues.

Demonstrate Clear Value-Add

Once the needs of other departments are understood, be proactive in demonstrating how the new solution will address these needs, such as providing enriched data for financial reports, streamlining workflows for updating ledgers and reconciling accounts, etc.

Don't Overpromise & Underdeliver

While it may be enticing for treasury to offer a "best-case" scenario to stakeholders in an attempt to increase support, these efforts can backfire if the project experiences significant setbacks or runs over budget.

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STANDARD PROCESS WORKFLOWS

Given the broad set of challenges that can manifest themselves within a technology implementation, great care must be taken during the planning and development stages to ensure that treasury is prepared to handle unexpected setbacks. One helpful tactic in this area is to provide banded timeframes for completing certain steps and avoiding hard deadlines so that if a certain step does take longer than anticipated, the original roadmap can still be adhered to and all subsequent steps can still be completed as planned. Additionally, treasury should work to identify any tasks or processes that will take considerable time to complete and intentionally stagger their placement within the roadmap so that all the complicated steps are not being undertaken at the same time.

A standard technology implementation can typically be segregated into a set of distinct phases. Strategic Treasurer defines the process using a five-step methodology with each step further subdivided into a unique set of procedures and tasks.

The steps contained in this approach include:

- **Assess**
- **Select**
- **Architect**
- **Implement**
- **Optimize**

This approach begins with project planning and includes a post-implementation "assessment and monitoring" phase that involves ongoing checks and inspections of the technology to ensure all components continue to function at optimal levels. The graphic below provides a more detailed overview of these steps and the individual sets of procedures that comprise them.

TREASURY TECHNOLOGY IMPLEMENTATION: PROJECT STAGES

PRE-IMPLEMENTATION | **IMPLEMENTATION** | **POST-IMPLEMENTATION**

ASSESS	SELECT	ARCHITECT	IMPLEMENT	OPTIMIZE
01	02	03	04	05
Draft Roadmap & Specs	Finalize Plan	Confirm Roadmap & Blueprint	Begin Installation/Crossover	Monitor & Refine System Use
• Design Plan & Requirements • Communicate Internally • Organize Resources • Project Approvals	• Finalize Budget & Resources • Identify Required Functionalities & Workflows • Conduct RFP & Vendor Selection	• Project Kick-Off with Selected Vendor • Systems Development & Configuration • Documentation & Test Planning	• Verify Bank Connectivity & System Integration • User Acceptance Testing (UAT) • User Training	• Adjustments • Optimization • Follow-Up

Go-Live

Switch-Over

- Final Adjustments
- Production Validation
- Warranty Period
- System Switch-Over

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SETTING UNREALISTIC TIMELINES

While treasury may feel pressure to aim for a speedy, cost-effective implementation, they must be careful not to overpromise and underdeliver. While it is common for practitioners to set ambitious deadlines and do everything in their power to expedite the time to "go-live", the reality is that many implementations take much longer than anticipated. And although this does not automatically make the project a failure, such delays can impede treasury's ability to focus on other tasks, drive up implementation costs, and negatively impact their relationship with other departments and with executives as the project drags on. For this reason, treasury should always strive to be realistic and conservative with the deadlines they set and avoid promoting a timetable internally that resembles a best-case or heavily ambitious scenario. The truth is, these schedules are rarely adhered to.

The extent to which technology implementations can take longer than expected was highlighted in a recent Strategic Treasurer survey. As part of this survey, we asked practitioners that had undergone a TMS implementation to indicate how long they expected the project to take versus how long it took in reality. The results obtained through this question clearly demonstrate the degree to which the timelines for TMS implementations are underestimated. Given this reality, it is evident that treasurers need to take a step back when evaluating their implementation and consider all the steps and potential obstructions that could occur. This information can then be used to structure a realistic and achievable timeline.

Q Corporates: How long did the implementation process take?
(expectation vs reality)

Expectation
Reality

Significantly Misunderstood Timeframe

STILL OCCURING	1-4 MONTHS	6-12 MONTHS	1-2 YEARS	2+ YEARS
14%	43%	40%	9%	7%
	27%	27%	27%	3%
	0%	0%	0%	0%
14% of respondents were actively undergoing a TMS implementation at the time the survey was conducted. These implementations could be at any stage and may already have lasted for several months or years.	Nearly 2x more respondents expected their implementation to take less than 6 months compared to those whose implementations were actually completed in that time. While simple implementations can normally be completed in a few months, more sophisticated tech overhauls will almost always last longer.	Again, significantly more respondents expected their implementation to be completed within 6 months to one year compared to those whose implementations were actually completed in this timeframe. In Strategic Treasurer's experience, many standard implementations, when managed properly, fall within this timeframe.	While only 9% of respondents expected their implementation to last between 1-2 years, the reality was that 3x as many implementations took this long. While it is not unusual for complex projects to take longer than one year, those lasting longer than 18 months are usually the result of poor planning or numerous unforeseen delays.	Only a small portion of implementations last longer than two years. As such it is only projects that involve massive tech overhauls or that have been poorly managed that take this long to complete. In these situations, the roadmap and project scope will almost certainly have been significantly altered to reflect changing circumstances, budget, or resources.

Figure 3

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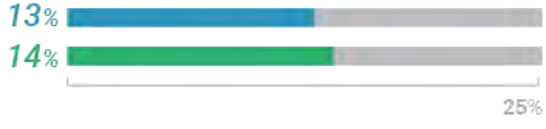
WHERE ARE THE PAIN POINTS?

Over the full course of a TMS implementation, there are numerous areas where delays can quickly spring up. From training employees and onboarding banks to testing the solution and adding additional modules, the ability for treasury and for the organization at large to stay on track without adding costs requires careful planning and strategic oversight. In a recent survey of treasury professionals, we asked respondents who had undergone a TMS implementation to indicate what they expected the largest challenge to be, compared to what the largest challenge was in reality. The data obtained through this research provides a unique look into the diverse set of issues that practitioners may have to address during a technology implementation. The reality is that issues can quickly arise out of multiple areas and as such, treasury must be prepared to handle a diverse set of obstacles. The graphic below provides an overview of the aforementioned data regarding treasury's TMS implementation experiences.

Q Corporates: What was the biggest challenge associated with your implementation? *(expectation vs reality)*

Expectation
Reality

Taking Longer Than the Allotted Time Frame



» Just over 1 in 10 practitioners expected this to be their largest challenge, and the reality was consistent with expectations.

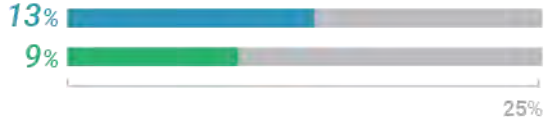
Transitioning from the Old to the New Solution

» In circumstances where legacy or siloed technology is used extensively, the task of moving data and restructuring workflows can be a significant hurdle.

Learning How to Use the Technology

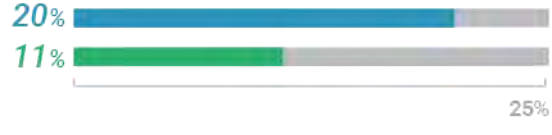
» Learning how to use new technology can be a significant burden for treasurers already juggling multiple responsibilities or that have grown accustomed to an older program or interface.

Bank Onboarding



» Due to lengthy and often delayed documentation and testing phases, bank onboarding can be one of the more frustrating steps of an implementation.

Sticking to the Implementation Roadmap



» While delays to the overall project timeframe might occur, the challenge of sticking to the original project roadmap was not nearly as large of an obstacle in reality as practitioners expected.

Effective Communication with the Vendor

» Communicating effectively with the technology vendor was the largest challenge for nearly 1 in 4 firms, almost double the number that anticipated this being the largest challenge ahead of time.

Figure 3

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AVOIDING INADEQUATE FUNCTIONALITY

According to a recent Strategic Treasurer survey, less than half of organizations with a TMS were using more than 80% of the functionality that they purchased. Adversely, over 1/3rd were using less than 60% of the functionality they purchased. In many circumstances, organizations purchase a TMS module that they plan on using down the road, or implement a solution that allows them to "grow into" the functionality. Other times, users may not be adequately trained on new functionality and, due to the complexity involved with leveraging it, ultimately decide not to use it. While this is not always to their detriment, if a company is paying for the modules and services that are sitting idle, they are losing money and wasting resources. Given that many vendors allow users to purchase specific modules of their TMS and add functionality as they require it, there is no reason for companies to have such high levels of unused functionality. To avoid this problem, be intentional and strategic with the functionality you purchase, and if there is a module or service that you feel is unnecessary, don't buy it. You can always add it to your repertoire later on.

As part of a related question, respondents were also asked if there were any modules of their TMS that they were no longer using due to their ineffectiveness. Results found several areas of functionality where over 10% of respondents regularly experienced issues. At the top of this list were cash forecasting modules, followed by BANK, risk management, and hedge accounting. In evaluating this data, it is evident that the TMS components offered by some providers might need to be strengthened further or enhanced beyond their current state before clients can realize the full ROI. However, this data also points toward a lack of preparation and due diligence on the part of organizations that undergo an implementation. The fact that so many companies purchase unnecessary or inadequate functionality is troubling because many of these issues should have been identified during the RFP, demo, or testing phases of an implementation and definitely before the "go-live" stage.

In order to avoid purchasing inefficient functionality, treasury should extensively analyze the TMS solution offered by their chosen vendor during the RFP and testing phases. During these periods, treasury should run their TMS against a number of "what-if" scenarios to ensure that each module is functioning in the intended manner. Any deviation from what is normal or expected should be immediately reported to the vendor and to IT, and treasury should press to have the issue resolved before the "go-live" stage or else consider pursuing an alternative route.

CORPORATE STRUGGLES TO MAXIMIZE TMS EFFICIENCY

While the implementation of a TMS can provide numerous advantages, many organizations struggle to maximize the efficiency of that system. In a recent survey, 60% of organizations were leveraging less than 60% of the TMS functionality they purchased, and significant numbers of practitioners indicated that certain modules were not working properly or were ineffective at performing the required functions.*

How much of the available TMS functionality that you purchased are you using?

Figure 4

Which TMS modules or services that your purchased are you not using because they are not working properly or are ineffective? *(Select all that apply)*

Figure 5

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MAXIMIZING ROI: SERVICE OPTIONS

As treasury prepares to take on a TMS implementation, one of the first decisions to make involves selecting the personnel to manage the project. For organizations with available IT/treasury staff that have experience with technology implementations and available time to dedicate to a new project, managing the majority of work in house may be the most effective strategy. However, not every organization has the bandwidth to manage a full implementation. Instead, many treasury and IT departments are understaffed and struggle to manage their day-to-day list of responsibilities before a new project is even considered. In these circumstances, it may make more sense to rely on either the technology vendor's project support staff or use the services of a consulting group.

When evaluating the project management services of a TMS vendor, there are several matters to consider. For instance, some vendors maintain a large group of in-house technical consultants and support staff to assist clients with implementations, while other vendors may be limited in the resources they can dedicate to a particular project. Furthermore, some vendors may be undergoing dozens of implementations at once, and their support staff may have to juggle your project with numerous others. This can affect the level and frequency of communication that treasury maintains with the vendor, and cause delays when trying to resolve issues. For this reason, it is important for firms to evaluate the size and availability of their chosen vendor's support teams early on in the process. And if treasury feels that additional assistance may be required beyond the resources available from the vendor, it could be advantageous to utilize a third-party consulting group to manage the project. Although hiring a third-party group to assist with the implementation will add an additional expense to the project, most consulting groups that specialize in treasury technology will have already managed dozens or hundreds of implementations in the past and are acutely aware of the various challenges that can arise as well as the most effective methods for dealing with them. The leading consultants will also be familiar with a wide array of financial solutions and can assist with developing RFI's, managing project documentation, training staff, testing specific workflows, and optimizing use of the solution over time. While affording these services may be difficult for organizations with already tight budgets, they can go a long way in ensuring the project is completed smoothly and efficiently.

TECH IMPLEMENTATION SERVICE OPTIONS

Manage Internally

- ✓ Cost-effective option, as it minimizes fees associated with hiring outside project managers.
- ✓ Allows treasury and IT staff to familiarize themselves with solution early on.
- ✗ Many organizations lack the experience or bandwidth to manage an entire implementation on their own.

Rely on Vendor Support Staff

- ✓ Many vendors maintain a group of project support staff and technical support staff to assist with implementations. These services may come at little to no extra cost for the client.
- ✗ Other vendors do not have adequate support staff, and some may be juggling dozens of implementations at once.
- ✗ Effective communication with vendors was ranked as the top challenge to implementations by those who had undergone one in the past.

Outsource to a Consulting Group

- ✓ These groups have typically already helped dozens or hundreds of clients undergo similar implementations.
- ✓ Can provide dedicated level of attention to tasks that client is unfamiliar with or does not have time to perform.
- ✗ Additional costs associated with hiring third party may be out of the realm of possibility for organizations with tight budgets.

*Disclaimer: Please note that Strategic Treasurer provides treasury technology consulting services to organizations, and as such, is not a neutral party with regards to this specific topic.

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Treasury Technology by the Data

INDUSTRY USE RATES

At this point in time, the use of treasury software throughout the corporate environment is fairly high. Although significant opportunities remain for small and mid-market firms to find a solution that addresses their needs, the continued "democratization of technology" with regards to price points and capabilities is having a significant influence on the adoption rates of these markets. However, as of 2018, TMS use continues to come primarily from organizations with annual revenues in excess of $1 billion, although a notable portion of companies in the $500 million– $1 billion range have begun utilizing such solutions as well. While Excel continues to be used by the majority (80%) of organizations, the use of spreadsheets is frequently coupled with a more sophisticated solution, such as a TMS or ERP. According to Strategic Treasurer's 2018 Rapid Research Tech Use Survey, half of corporate treasury departments (50%) were using a treasury management system, and 38% were using an ERP. Breaking these figures out further, 67% of firms with annual revenues of $1 billion+ had a TMS, while just 21% of those with <$1 billion in revenue had one. In a 2017 iteration of this survey, roughly even numbers of TMS users leveraged an installed solution compared to a SaaS-based solution (30% installed vs. 34% SaaS). Although the use of installed and SaaS-based systems was relatively even, it is important to note that the vast majority of new implementations within the past 3-5 years have been of SaaS-based solutions, and it is widely expected that SaaS TMS will be the preferred choice for most organizations in the years to come.

What system(s) do you currently use to manage your treasury operations? *(Select all that apply)*

Figure 6

Do you have a treasury system besides Excel?

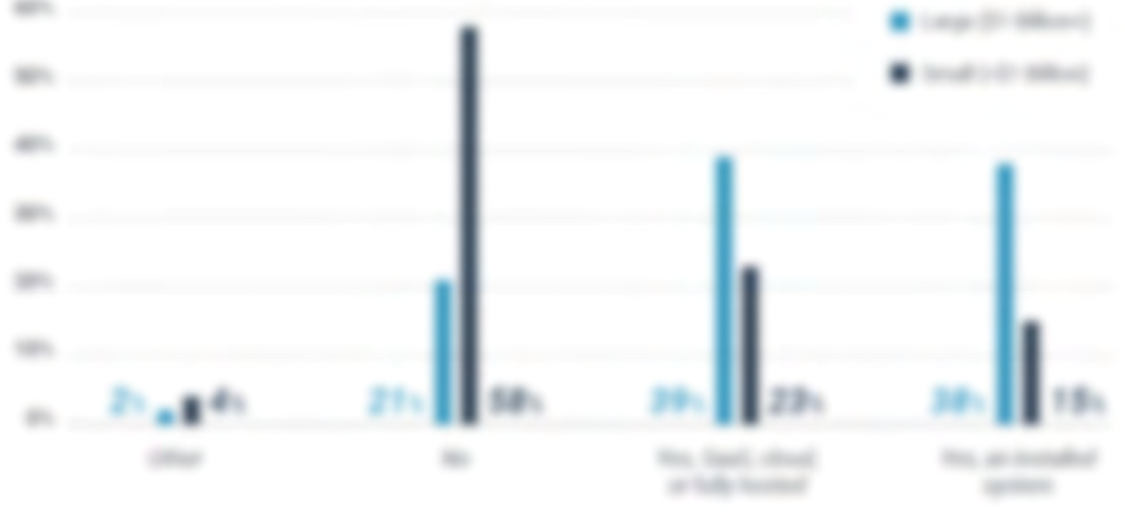

Figure 7

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TOP FUNCTIONALITIES REQUIRED

Over the course of the past several decades, the title of "treasurer" has been most commonly linked to the practice of managing and executing payments. And while the funds transfer arena continues to be a core focus for treasury, this is not their only area of responsibility. Today, most treasury departments are entrusted with duties ranging from global cash positioning and forecasting to liquidity management, financial risk management, payment execution and reporting, compliance and fraud monitoring, and bank relationship management.

As treasury seeks to manage these tasks, the use of technology, particularly TMS or ERP treasury modules, are playing ever increasing roles. Over time, the breadth of functionalities offered by these solutions, especially within the TMS arena, has expanded to encompass virtually every facet of treasury operations.

Looking at current TMS usage, a question asked as part of a 2017 survey sought to capture the percentage of organizations using specific types of TMS modules. The results obtained back up the assertion that cash management requirements (positioning, forecasting, etc.) and payments functionality tend to serve as the core features of most TMSs, as these are the services most frequently required by organizations that leverage such a solution. Beyond these functions, areas like BANK, accounting, FX trading, and risk analysis are also required by 50-70% of treasury groups. At the lower end of the spectrum, functions related to hedging, netting, and in-house banking are required by roughly 30-40% of companies. In analyzing these requirements holistically, Strategic Treasurer's TMS landscape (highlighted on page 7) offers a realistic view of how TMS functionalities are built out by vendors, and how they are leveraged by practitioners.

Q **What functions do you use or need in treasury?** *(Select all that apply)*

TREASURY FUNCTIONS REQUIRED: *Today, cash management, payment management, and bank account management (BANK) are the areas of functionality most commonly used and needed by treasury practitioners. Other areas such as debt management, risk analysis, accounting, and FX trading also see heightened use.*

Figure 6

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NEW TECHNOLOGY PREFERENCES

SaaS Technology

Although treasury continues to indicate that their levels of technology investment and spend will be elevated during 2018-2019, their focus is not necessarily on the newest or "emerging" tech. Instead, the one technology that many corporate practitioners see as having the most significant impact on treasury functions and operations over the next two to three years is cloud-based (SaaS) solutions. Although use of installed vs. SaaS solutions is fairly even-keeled in the market at this point, the vast majority of new sales are of cloud-based solutions. Compared to installed solutions, SaaS-based platforms tend to be much more cost-effective and easy to implement. Undergoing software upgrades and patches is also much easier, as is adding new modules and functionalities. Given the sophistication of today's SaaS applications and the broad suite of capabilities they offer, treasury clearly feels as though the current impact of these solutions is more significant than other emerging or "disruptive" tech.

Mobile Banking Apps

In 2017, when banks were asked how important they considered commercial mobile banking applications would be for their corporate clients over the next two to three years, 76% believed such apps would be important or extremely important, and not a single respondent saw them as being unimportant. Given these percentages, banks are clearly anticipating high levels of development and growth in the commercial mobile banking sector. However, when corporates were asked how important mobile applications would be for their operations over the same timeframe, just 24% saw such developments as important. Instead, 76% saw them as unimportant and the majority (57%) were neutral. When it comes to mobile devices, corporates have consistently shown that security is a major concern, and many are reluctant to introduce potential fraud exposures to their payment and banking operations. The good news here is that 22% of corporates indicated their comfortability with mobile payments has increased over the past year, compared to just 3% whose comfortability had decreased.

Blockchain or APIs?

When it comes to the short-term impact of APIs and blockchain on payment operations, over four times as many corporates see APIs playing a larger role. While a significant portion (32%) of corporate respondents were unsure as to which was more important, 39% selected APIs, while only 9% chose blockchain. While this preference for APIs over blockchain could have several causes, perhaps the most notable development in recent years involves the introduction of the Revised Payment Services Directive (PSD2) and the creation of an "open banking" environment. Due to this new directive, APIs look to play a big part in streamlining integration between bank systems and those of corporates and other fintechs/third-parties. APIs are also already a component of many financial solutions, and given the impact of PSD2, they will likely continue to see greater use. On the other hand, blockchain, while no doubt an important and significant innovation, has not yet risen to the top of treasury's technology priorities.

Corporates: Which of the following disruptors do you see as having the greatest impact on treasury functions & payments in the next 2-3 years?

Figure 9

Corporates: In the next three years, how important will commercial mobile banking applications be for your position?

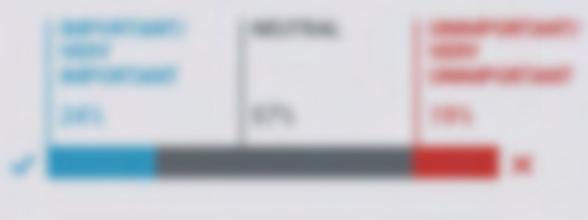

Figure 10

Corporates: Which is more important for your outbound payments?

Figure 11

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WHAT MATTERS MOST WHEN SELECTING A TMS?

In a 2018 survey, Strategic Treasurer asked respondents that used a TMS to indicate the three areas (out of a list of eight) that were most important for them when selecting treasury software. The point of emphasis here was to determine which elements of a TMS (i.e. cost, ease-of-use, security controls, etc.) were most important to practitioners as they evaluated different providers and ultimately selected a product. The results cast an interesting picture as to the state of the market and what treasurers are looking for in their technology. In terms of rank, security was the area that mattered most, followed by bank/system integration, ease-of-use, and automation / efficiency. After these elements, there was a significant drop-off in importance as factors such as cash visibility, cost of the solution, and stability of the provider ranked much lower.

While this data does provide a clear picture as to the areas of technology that practitioners focus on when making investment decisions, there are also some elements of this data that have proven misleading. For instance, the RFP projects Strategic Treasurer has assisted on regularly indicate that companies put a much greater emphasis on the stability of each provider than what is highlighted here. In fact, some companies choose to entirely eliminate some vendors out of their shortlist based exclusively on their position within the market (i.e. smaller vendors may be eliminated to focus on large, reputable vendors). However, provided that each vendor being evaluated has a similar position within the market, then the elements of security, connectivity, and automation/ease-of-use are what ultimately differentiates one solution from the next. But, in situations where analysis of these elements fails to determine a clear favorite or when firms are operating with tight budgets, practitioners then turn to cost as the final point of reference for selecting their TMS of choice.

Which of the following represent your most important considerations when evaluating treasury software? *(Please Select 3 Choices)*

Figure 10

TIER 1: In 2018, fraud and criminal activity has continued to ravage the treasury environment. At the same time, inefficient bank connectivity and back-office integration issues are a constant source of confusion for staff. These items are clearly at the top of practitioners' minds as they evaluate the purchase of treasury software.

TIER 2: Interestingly, the cost of a TMS appeared to be an ancillary consideration for many firms. This may be due to the fact that there is currently broad availability of TMS offerings at each price point in the market (i.e. democratization of technology).

TIER 3: Although corporates seemed not to care about the stability of TMS vendors at all, other studies have shown that many companies are wary of contracting smaller or newer vendors that are deemed unstable or inadequately positioned in the market.

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Questions to Ask a Vendor

DOES THE VENDOR OFFER THE HOSTING MODEL WE DESIRE?

Hosting models offered by TMS providers range from installed solutions hosted on-site at the client location to SaaS-based solutions hosted via the cloud and accessible to clients through an online portal. To avoid IT dependence and overly burdensome update/patching procedures, a majority of companies today prefer to adopt SaaS solutions. However, companies with strict security requirements or with a large IT bandwidth might prefer to manage TMS hardware internally. In either case, a first step in narrowing your search is to focus on only those vendors that can offer your preferred hosting method.

DOES THE VENDOR'S INDUSTRY POSITION ALIGN WITH OUR PREFERENCES & REQUIREMENTS?

Consider the ideal company profile of the vendor you would like to do business with, such as their size/revenue, number of clients, annual growth rate, and projected product roadmap. Would you prefer a larger vendor with an established solution, or a smaller vendor that can offer a greater degree of flexibility and customization? As these areas are evaluated, also consider each vendor's history of mergers, acquisitions, and financing activities to determine whether it is likely that any significant ownership changes or restructuring will occur in the near future.

WHAT TRAINING OPTIONS WILL BE AVAILABLE FOR OUR TREASURY STAFF?

While practically every TMS vendor offers educational and training opportunities to clients, the methods through which these offerings are delivered can vary substantially. Some vendors may provide online training courses that clients can access and use on an ongoing basis, while others may offer in-house training that is conducted in-person at the client site during the implementation. Additionally, most vendors will either attend or host conferences where clients can learn about upcoming system updates, network with other users, and receive tips and advice on how to utilize the solution most effectively.

WHAT IS THE FULL SCOPE OF FUNCTIONALITY OFFERED BY THE VENDOR?

Each particular TMS solution available on the market today has a unique set of capabilities and strengths. While one solution might be designed to provide robust cash management and positioning, another might specialize in risk management. Some vendors may offer only basic TMS functionality, and some vendors may offer a full suite of functions. As such, it's important to compare the current and future needs of your treasury group against the capabilities of any potential solution to ensure that they are capable of providing the type and level of service your team will require now and into the future.

WHAT ELEMENTS OF A TMS IMPLEMENTATION WILL REQUIRE OUR IT DEPARTMENT'S INVOLVEMENT?

One reason treasury departments often decide to leverage a TMS is to decrease their dependence on IT. However, TMS implementations can be a confusing and highly technical process. Therefore, understanding up-front what will be required of your IT department during the implementation will allow you to prepare the appropriate internal resources and assemble adequate staff for the upcoming project and for the solution's ongoing use. While most TMS offerings available today do not require ongoing IT support from the client, if you purchase an installed (on-premise) solution or select a vendor with limited technical staff, you may be forced to rely on some degree of internal IT assistance.

HOW ARE SYSTEM UPDATES, PATCHES, & MAINTENANCE REQUESTS HANDLED?

Depending on the size and growth prospects of the vendor, updates to the solution can occur anywhere from weekly to yearly. In some circumstances, these updates will result in temporary unavailability of the TMS. In addition, customer service requests submitted by the client may be handled differently by each vendor. While some TMS providers have clearly defined processes and large groups of technical staff to handle client issues, other vendors may not have the bandwidth to provide this level of service. Thus, obtaining information regarding the vendor's customer service structure and system update schedule is pivotal for determining how they will be able to service your organization.

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A Deeper Dive Into the Data

As Strategic Treasurer evaluates the treasury technology landscape and analyzes the various operational preferences, perspectives, and challenges associated with the practice of treasury, we rely extensively on our own industry research. Since 2009, our analysts have worked hard to develop a comprehensive market research program, and today, the insights captured through our 10+ annual surveys serve as the cornerstone for the publications and resources we develop. For institutions, fintechs, or corporates interested in learning more about our market research, the below resources offer a deeper dive into the key findings we have obtained over the course of the past year.

2018 TREASURY FRAUD & CONTROLS SURVEY REPORT

Offers comprehensive analysis of treasury's experiences with specific types of fraud and evaluates the security tools and methods used by organizations to protect their financial assets and information.

2017 TREASURY PERSPECTIVES SURVEY REPORT

Gauges practitioners' viewpoints, strategies, and preferences on a range of topics including economic growth, compliance, security, payments, capital markets, risk, and technology use.

2018 B2B PAYMENTS & WCM STRATEGIES SURVEY REPORT

Analyzes the use of specific types of payment formats and channels, preferences for new and emerging payment technologies, and the unique strategies deployed by firms for managing working capital and liquidity.

TREASURY INSIGHTS BENCHMARK REPORTS

New in 2018, our Treasury Insights resource offers exhaustive insights across all our industry surveys, with breakouts available by company size and other metrics. For more information regarding this resource, click here to download the brochure.

FOR MORE INFORMATION

For additional information regarding any of our survey results publications, webinars, and infographics, you can visit the "survey" section of our website at www.strategictreasurer.com to access a complete list of resources. To learn more about our Treasury Insights resource, visit our website to download the brochure at www.strategictreasurer.com/benchmarking.

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Strategic Treasurer Market Research

As part of our ongoing market research initiatives, Strategic Treasurer conducts 10 industry surveys every year on a variety of topics ranging from cash management and payments to fraud and compliance. These surveys are collectively completed by several thousand corporate, banking, non-profit, government, and higher education respondents every year. Below is a list of our current industry research initiatives.

Treasury Fraud & Controls

Offers comprehensive analysis of treasury's experiences with specific types of fraud and evaluates the security tools and methods used by organizations to protect their financial assets and information.

Treasury Perspectives

Gauges practitioners' viewpoints, strategies, and preferences on a range of topics including economic growth, compliance, security, payments, capital markets, risk, and technology use.

B2B Payments & WCM Strategies

Analyzes the use of specific types of payment formats and channels, preferences for new and emerging payment technologies, and the unique strategies deployed by firms for managing working capital and liquidity.

Global Payments

Studies the various payment technologies, tools, and services used by organizations for facilitating global payments activity and analyzes the key areas of complexity currently impacting the payments landscape.

Treasury Compliance

Keeps track of treasury's shifting strategies and responsibilities for managing bank account information and maintaining compliance across the full scope of their daily operations.

Liquidity Risk

Analyzes organizations' short-term investment and risk management strategies to uncover trends related to how firms are optimizing their liquid assets and identifying and mitigating associated risks.

Supply Chain Finance

Evaluates the use of SCF technology within the corporate environment, as well as the strategies and technologies put in place by firms to manage vendor relationships, streamline cash conversion cycles, and optimize working capital.

Cash Forecasting & Visibility

Studies the operational and technological components deployed by organizations for maintaining visibility to cash positions and forecasting cash flows.

Higher Education

Focuses specifically on understanding the unique challenges and operations of financial personnel within the realm of higher education and how their experiences compare to their peers in the corporate environment.

Treasury Technology Use

Analyzes the use of technology within the treasury environment, with a focus on the utilization of Treasury Management Systems (TMS) and organizations' unique experiences with implementing, using, and upgrading these solutions.

How are your surveys classified?

The surveys highlighted on the left-hand side of this page comprise Strategic Treasurer's Premier Survey program, which offers comprehensive analysis (100+ questions) across each area of focus. The surveys highlighted directly above are part of our Standard Survey program, which provides robust coverage (30-50 questions) of the selected topic. To learn more about our market research initiatives, visit our website at strategictreasurer.com/surveys.

TECHNOLOGY IMPLEMENTATIONS

Strategic Treasurer ensures maximized investments by:

- Developing and leading the vendor selection process to ensure you select the "best-fit" solution.
- Creating a realistic project roadmap that contemplates the unique requirements of your organization.
- Managing the implementation from design, project kick-off, bank onboarding, and testing, through go-live and post-project analysis.

Interested? Contact Strategic Treasurer today:

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