Treasury Alliance Group LLC

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ACHIEVING OPTIMAL TREASURY TECHNOLOGY

A Treasurer's Guide

Contents

Introduction

More of a treasury professional's work involves using or processing information in digital form. Interest rates are obtained from a private terminal or the public internet, not from a newspaper reference to a particular bank's prime rate. Foreign exchange advisors still ply their trade but compete with FX dealing platforms and privately managed information terminals. Check payments are becoming a global rarity in favor of same day or instant ACH payments originating from a treasury management system. For most, the question is not whether or not to use a digital tool but the form of the digital tool—something wearable, simply mobile or a conventional desktop system.

The markets are not standing still. Financial technologies are challenging incumbent vendors and processes in lending, supply chain finance, payments and other areas to the extent that there is now an entirely new business segment for venture capitalists to fund, FinTech. Some of the new FinTech companies make use of entirely new technology-enabled processes such as distributed ledger technology (DLT), the core of Bitcoin. These processes are profoundly different from legacy database-centric approaches with an equally profound impact on the markets served by the application and ancillary markets. Core members of the financial ecosystem such as banks and money transfer networks are not only in a fight for market share but an existential fight for relevance.

While all this is happening, regulators established in less digital times continue to have the same core missions—policing markets and ensuring financial stability, even as those markets are transformed by the new digital tools. They respond, sometimes effectively, with rules and regulations that maintain their relevance for shorter and shorter periods of time. Regardless of whether or not the regulators are effective, their statutory authority and ability to levy financial and criminal penalties demand compliance by the corporate treasury.

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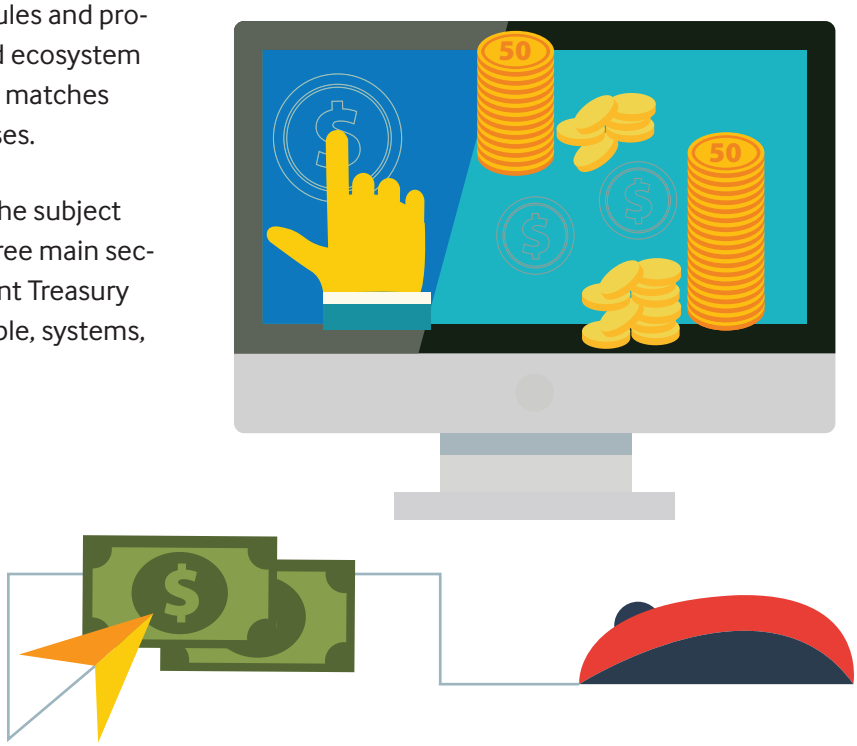
The amounts of money stored and moved in digital form also attract criminals and the occasional state actor eager to profit from the careless or inattentive. They do this through theft of personal and confidential information (PCI), takeover of bank accounts, fraudulent money transfers and more. In some cases the criminals even set up their own markets for the fruits of their crime in portions of the dark web where they can also sell tools to other criminals.

In short, there are multiple challenges to the current treasury model where a failed response by the treasury could have catastrophic or simply material consequences to the enterprise. At the same time, treasuries everywhere are under pressure to manage costs and headcount. This environment requires that prudent treasurers transform their treasury technology. The transformation would shift treasury from a functioning array of products, applications, modules and proprietary ecosystems to a customized ecosystem optimally deploying technology that matches corporate requirements and processes.

The "how" of this transformation is the subject of this paper which is divided into three main sections. Section one looks at the current Treasury Ecosystem, the constellation of people, systems, vendors and counter-parties that define most treasuries and what they do. The next section, Current Landscape, deals with the treasury marketplace—the products, applications and systems with their handoffs and linkages. The conclusion from these two sections is that the ecosystems and marketplace are just that, they enable treasuries to function but are not perfect matches to client needs. This leads to the third section, Action, which demonstrates that the future of corporate treasury technology will be the ability to achieve precise matching between available technology options and the user, the technology of you. This is possible, it is affordable and it will soon be necessary. The third section further explains the steps that treasuries should take to achieve this position.



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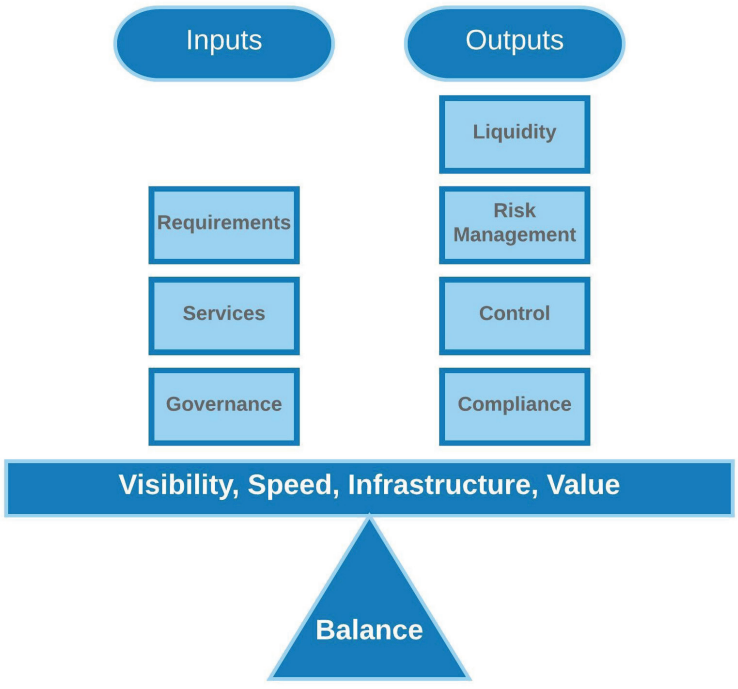
Part 1
The Treasury Ecosystem

Constant change with greater volatility and complexity has disrupted the way people work together, the nature of the tasks they perform and how their performance is assessed. Shared service centers and outsourcing have brought greater efficiency to particular tasks at the expense of a more formal, rules-based approach to working. Supplier networks have been concentrated in some cases and made more remote in others through off-shoring while all supplier relationships have been transformed by the new discipline of supply chain management. Business models, processes and networks have been extended, stretched, expanded and distorted. The result is a movement away from traditional organizational roles and tasks and towards an ecosystem that is better able to support the new versions of traditional concepts like order to cash, procure to pay and financial supply chains.

For treasury, the ecosystem defines how all the parts of a treasury come together to meet treasury business requirements and deal with treasury issues. This puts focus on the constellation of people, processes, systems, products, vendors and counterparties that comprise any corporate treasury. The trick in managing this well lies in balance.



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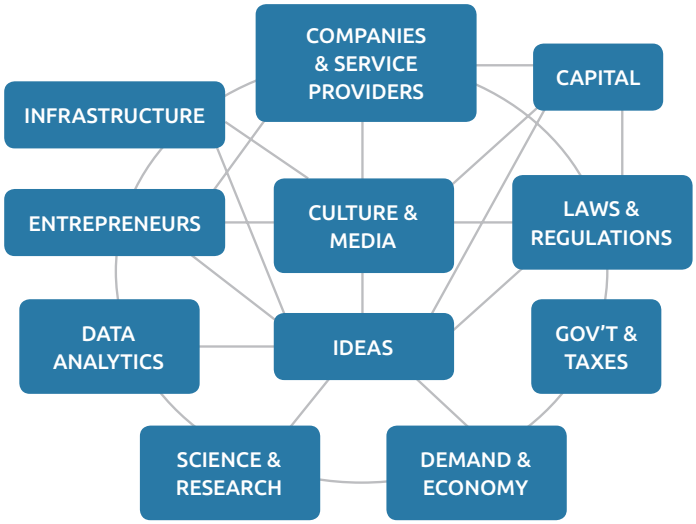
This vision of an ecosystem highlights inputs, outputs and feedback loops but does not deal with the underlying details and challenges associated with treasury. It is important to not lose sight of the many people involved from different business roles including treasury, accounting, legal, tax, IT, business operations, customers, vendors and regulators. Each has a different set of needs and priorities which touch but do not match those of the corporate treasurer.

Accounting's concerns are with categorizing financial events and processing the underlying transactions through the company's financial systems. Legal provides input into management decisions that balance the risks of gain or loss. Business operations rely on corporate infrastructure at the same time they are frustrated by corporate policies and charges.

There are also functional concerns beyond risk management, liquidity management, control and compliance. These include timely payments and receipts, finance, efficiency, scalability, transparency and training. Finally there are the many touch-points with technology where an infrastructure can include ERP, TMS, SWIFT, Bloomberg/Thomson Reuters, specialty applications, spreadsheets, data bases and data warehouses, as well as the multitude of interfaces among banks, vendors and customers. These touch-points define and form the current technology landscape which is the subject of the second section.

The challenge for the treasurer is to effectively represent and manage treasury's interests in this large, complex and ever-changing treasury ecosystem. The solution is to embrace a management approach that cooperates and collaborates with other members of the ecosystem. In the case of managing technology there is the need to deal with disruptions, stay competitive and remain relevant. Ultimately this will require treasurers to skillfully navigate other ecosystems, the most challenging of which will likely be the innovation ecosystem. A vision of this is shown below.



Today's changes coupled with the resource limitations of most treasury functions have generated gaps in both the expertise and the products needed to successfully ride the crest of innovation.

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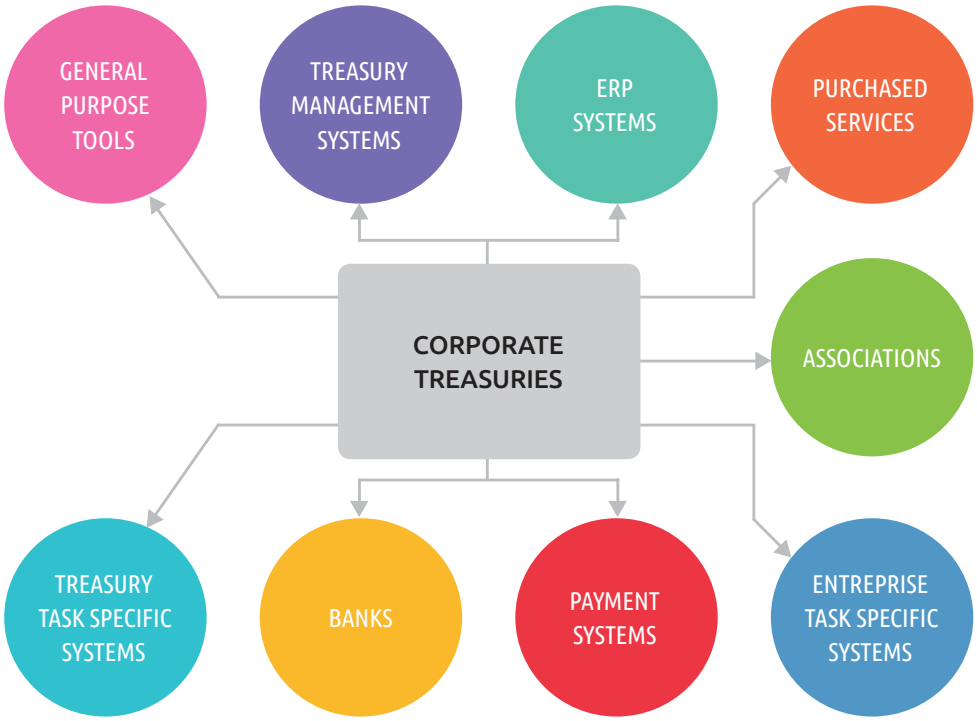
Part 2
Current Landscape

The substantial ecosystem of the corporate treasury is served by an equally substantial number of entities, including companies that make it their business to profit through the provision of products and services to the treasury.



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This broad and somewhat arbitrary assembly of categories is briefly summarized below. The critical point, discussed further in this section, is the strategy behind assembly and integration of elements from some or all of these categories to serve the needs of a corporate treasury.

1. Treasury management systems (TMS) represent the evolution of treasury workstations which have been part of treasuries since the 1980s. They are the applications developed by third parties and used for an array of tasks such as payments, liquidity management and risk management. Many TMS are now delivered in software as a service (SaaS) mode, in the cloud, although there continue to be hosted and installed systems.

   The large number of TMS vendors continues to shrink as system complexity and integration requirements expand making financial stability a key selection criterion when choosing a TMS. There is also the need to avoid acquiring a system that can be orphaned by a surviving vendor focusing its development efforts on other systems in its portfolio. The category is under further pressure from two sources, the improving functionality of the ERP treasury modules and the entrance of well capitalized vendors into the space to protect some of their related products. The latter offer systems with basic functionality that are considerably simpler to install and operate than many conventional TMS.

   Nevertheless, the core of TMS functionality—payments, cash forecasting and bank account aggregation/visibility remain critical needs for any treasury and, if not delivered through a TMS, they must be provided in another manner.

2. ERP systems are a group of integrated applications from a single vendor used to manage data from all business activities of the company such as accounting, customer relations, human resources and sales. This category too has existed for decades and has also seen shrinkage in the number of vendors. Some companies make use of more than one vendor for ERP applications or use multiple ERPs for identical applications reflecting the perceived superiority of one over another for a particular function such as human resources or manufacturing.

   ERPs are deployed for many reasons, but their prime appeal is in their ability to handle large numbers of users and vast amounts of data, as well as the integration of their various modules. Their size, market penetration and integration limit the variety of features that can be offered by ERP vendors. This leads to customization by packs of consultants and application specialists. The customization provides functional benefits at the expense of standardization and the ability to upgrade ERPs as new capabilities emerge from the vendors.

3. Banks have been around for millennia and are the licensed financial intermediaries able to lend money, accept deposits, make payments and provide other essential treasury services. Depending on the size and scope of

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the market they serve, banks can also offer a wide array of value added services that extend into areas served by others.

Banks can be defined by their mission such as consumer savings, agricultural finance or trade finance and their geographic scope, global, regional or local. The sheer number of these financial institutions demands discipline in selection by the corporate treasury as there are a large number of tradeoffs that must be considered ranging from service quality and price to financial stability and product capabilities.

4. Payment systems are the basic infrastructure of banking and include high-value real time gross settlement systems (RTGS), near-real time systems for lower value transfers, paper based transfer systems and derivatives of the above. Payment systems can be operated by private companies or associations under the auspices of a national regulator or operated by a national regulator itself.

In the fairly recent past, access to payment systems could only take place through a bank, but technology and commercial pressure have demolished this monopoly. While membership in core RTGS systems is still limited to banks, the overall number of payment systems and providers has multiplied and continues to do so. New sub-categories such as contactless payments, mobile payments and peer-to-peer payments are emerging and their popularity in the consumer space requires attention from companies serving the consumer market.

5. Treasury Task Specific Systems are those developed for specific treasury tasks such as modeling foreign exchange strategies, financing the supply chain or making foreign payments, all tasks where treasury is the prime user. A much smaller category than those mentioned above they are sometimes referred to as "best of breed". They are not aligned with any particular TMS but are used by treasuries in conjunction with the TMS of their choice due to deep functionality for specific processes such as hedge accounting or multilateral netting.

   They are separated from the next category, task specific systems for other areas of the enterprise, by the fact that they are developed specifically for use by the corporate treasury and generally selected by the corporate treasury.

6. Enterprise Task Specific Systems developed for other areas of the enterprise are similar to those for treasury but are developed and marketed to other parts of the entity. Examples include legal entity management for the corporate secretary's office where treasury would be a user, but not the prime user, of the system. Another would be a system to facilitate account reconciliation with the ERP and banking systems. The rationale

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for dividing task specific systems into two categories will become even clearer in the discussion on assembly and integration of systems. In somewhat oversimplified terms this can be the distinction between systems treasury chooses to use and systems that are imposed on treasury.

7. General Purpose Systems include productivity tools such as MS Office and G Suite, collaboration tools such as Cisco Spark and other applications used throughout the enterprise. These have been around since the dawn of the PC age and are an element of any treasury professional's basic technical literacy. This ubiquity leads to the use of tools such as Excel for many tasks because it is quick, easy and inexpensive—in the short term.

   New collaboration capabilities have extended the functionality of these tools which nonetheless suffer as treasury applications due to issues with auditability, workflow and control.

8. Purchased Services, such as check printing or multilateral netting management, are provided to the corporate treasury directly by a provider or by a provider through a bank. In the case of check printing the value proposition is control and expertise in a business function of required, but declining importance. In the case of multilateral netting management it is expertise and scale in a highly specialized area. One area of concern is managing the liability for errors, both financial and reputational. Purchased services offer a degree of simplicity and cost predictability but require a considerable skill set in vendor management.

9. The final category is the collection of trade associations, multilateral organizations and cartels that provide services directly or indirectly to the corporate treasury. This includes conventional trade associations, such as the Association for Corporate Treasurers (ACT) or the Association for Financial Professionals (AFP), that try to serve as advocates and resources for their membership.

   It also includes more specialized groups such as ANSI and ISO that provide standards which make the definition of technology services more transparent and transferrable and cartels such as SWIFT which is bank-owned and provides a common set of message types along with a transmission network available to banks and selected companies. Collectively, these entities are used to a greater or lesser degree by companies to conduct their treasury operations.

Many entities fit into more than one of the above categories and the functionality provided in one category may well be provided in a different way in a different category. The challenge for the corporate treasurer is balancing the clamor within the organization to use certain systems or approaches with a confusing marketplace offering many ways to meet a treasury need. The treasurer can settle for simplicity and integration by conducting many treasury activities within the ERP or they can select systems and applications that precisely meet treasury's requirements.

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The risk of attempting to do everything within an ERP is that certain key treasury functionality will not be available and therefore not supported by corporate technology. On the other hand, the risk of picking specialized systems for treasury is that they will be difficult to integrate and support with the corporate infrastructure. Neither is a desirable scenario.

The challenge for the corporate treasurer is to try to stitch together the large array of products and services and potential providers into a network to most efficiently perform the tasks required of a treasury. There are two parts to this challenge: making the various parts work together and selecting the providers of the various technologies. In terms of parts working together there are a number of ways of doing so, ranging from least to most efficient:

- **Manual transfer**—This type of transfer includes rekeying information from a form into a system. This is the least efficient, most error prone and costly way of passing information from one system to another.
- **File based transfer**—Data is extracted from one application into a file by a small program or macro, perhaps processed further and then loaded into another application. This approach may involve a number of steps thus introducing potential errors at each point in the process. It also requires careful audit and error-handling procedures, but is at least a totally digital process.
- **Database integration**—A treasury process extracts data directly from one database and moves it to another. This reduces some of the issues associated with file-based transfers but is a batch process. For applications where virtually real-time information is required this approach can become costly due to the need to run many batches in a processing cycle.
- **Complete integration**—The components or modules are all part of the same application or systems vendors have mutually opened up their systems to one another to replicate this integration. The systems have complex routines to synchronize the data even as the underlying databases are being modified. This is the most efficient method of having different systems work together but can be costly and time-consuming to put into effect.

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Given the options available, most corporate treasuries choose to employ a mix of integration methods with the selection being determined by:

- The cost and complexity of the integration method.
- The stability of a particular method in an environment where vendors constantly update their systems.
- The need for real-time processing crossing multiple time zones.
- Adaptability to technological change, which is particularly important for database and network concerns where the impact of DLT is only beginning to be felt.

Selecting providers is a topic for a White Paper in and of itself, the details of which are outside the scope of this document. A set of general selection principles, however, is not out of scope with one assuming the lead in the case of treasury technology: primacy of interest. The tussle among IT, accounting and treasury concerning the decision of whether to use the treasury module of the ERP or a TMS is often about control over work process or the need to adapt. Those in corporate treasury can have the well-grounded fear that optimizing some of the highly specific tasks required in treasury, such as fx or debt management, are of lower priority than other tasks in the company managed by those who have greater access to budgeted funds. This conflict can lead to a reduced ability for the treasury to efficiently function within its ecosystems.

Third party system providers market and serve their customers directly but also use consultants, resellers and others. These non-vendor companies work directly with the corporate treasury but may well have a greater financial interest in promoting and preserving the provider. Failures to act objectively in the client's best interests potentially raise the cost of using technology and/or under delivering the functionality required.

The resulting question is: which interest has primacy, that of the primary decision maker, who may not fully understand treasury requirements or a hard-selling vendor representative with major conflicts of interest?

The optimal approach for treasury is not to exclude other corporate stakeholders or vendor representatives but to have a clearly defined set of business requirements that appropriately value treasury interests. Not all business requirements will be met in the final selection, but the result will reflect objective compromise among the various interests.

The last principle is almost definitional. Absent a custom developed solution, treasury is effectively making decisions about linking its unique business processes to third party processes that happen to fit the vendor's solution. This fact is often blurred in marketing materials with vendors asserting that their product uses processes that are accepted best practice when it is simply the practices chosen and developed by a particular vendor. Therefore an important caution, do not assume that selecting a vendor's solution and imposing it on an organization will optimize the delivery of the functionality necessary to meet the unique business requirements of the company.

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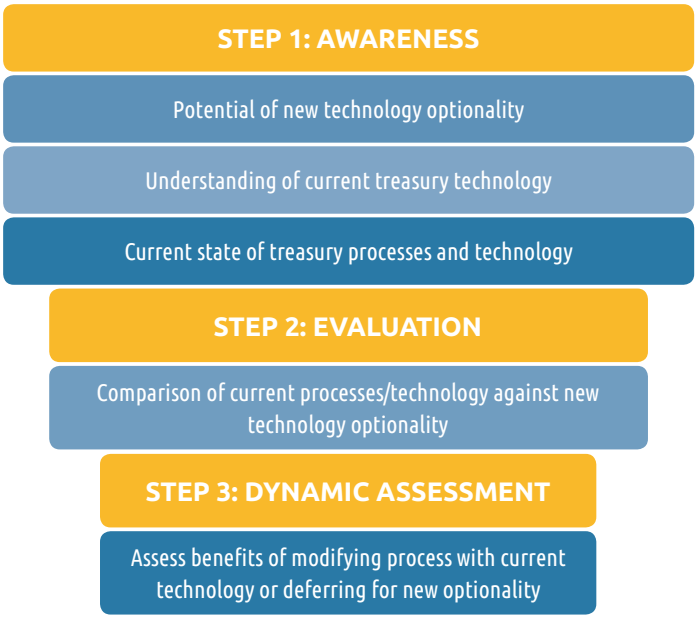
Part 3
Action

Technology has been, and will be even more, central to corporate treasury in the coming years. It is no secret, successfully implemented technology solutions have historically been a key source of the efficiencies that in effect have funded the capabilities required to adapt, expand, improve and deliver excellence.

Corporate treasuries have been, and will be even more, central to the success of their companies. The importance of treasury and the need for technology is clear. The challenge for corporate treasurers is how to transform their treasury technology given the current landscape which is decidedly not treasury centric. This transformation process can take place in three steps:



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Step one is awareness, which itself has three elements.

1. The development of a deep understanding of the current state of treasury processes and technologies at the company.

2. Knowledge of current treasury technology with its inherent strengths and deficiencies.

3. Learning about the new optionality available to treasury through new and emerging technologies.

Developing awareness is such a basic concept that it is seldom done in a conscious and intentional manner. Everyone just "knows" how and why a particular task is performed the way it is. There is no need for a more definitive payments policy because everyone understands payments; they are as intuitive as sweeping the floor. Fortunately, for listed companies in the US at least, a good way of understanding the current state of treasury is to review existing SOX documents and filings. These mark a beginning which can be supplemented from other sources, such as treasury team member interviews. Each company is different, but the mark of a well-managed treasury is one that has defined roles, responsibilities, procedures and policies for all treasury related activities. This includes activities that can be associated with treasury such as card program management but that might reside organizationally in another part of the company.

If much of this information is not currently available, the urgent need to gather the information required to transform treasury technology is a good reason to develop it.

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Gaining knowledge of current treasury technology is more difficult because most technology vendors speak of their solutions and not their products. Networking, attendance at appropriate trade expositions, participation in webinars and skimming the large number of daily and weekly newsletters should supplement your efforts.

The same goes for learning about the new optionality available to treasury through new technology. In this case you can further supplement your sources by approaching regulators and bankers who are attentive to new technologies. Part of a regulator's mission is to protect and manage while both regulators and bankers have a shared interest in protecting their turf against interlopers.

Step two involves evaluating the company's current treasury environment of processes and technology against new technology optionality. This is no small task, but the answer in most cases will be that new optionality will in fact improve processes, which is why there is a third step, the dynamic assessment of benefits and costs.

The evaluation and assessment steps are key to the actions any treasurer needs to take to ensure the ongoing delivery of timely, robust and reliable services and to stay relevant in today's challenging business climate. There are no silver bullets, no tried and true formats, no easy way out. The actions required demand collaboration, brainstorming, hard work and the tenacity necessary to reach consensus on the types of solutions that deliver the technology of you.

The following grid provides a more tangible view of the concepts presented in steps 1-3 presenting brief examples of the range of technology-enabled treasury processes along with simple examples of the technology optionality. Preparing a more detailed version of this grid that includes key overlapping functionality of other stakeholders in the company would be an excellent step in treasury's action plan.

These three steps will give you solid knowledge on current and future treasury technology. Transforming the technology is also a matter of organizational change and there are well-accepted methodologies for managing organizational change. These include forming cross-functional teams to gain buy-in from other stakeholders along with ensuring C-suite support of the effort through education on the risks and opportunities. The result will be an integrated, logical and supportable plan for treasury technology at your company.

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Treasury Process and Optionality Grid

	Legacy Treasury Technology			Alternative Options			
Functionality	TMS	ERP Treasury Module	Excel	Option 1	Option 2	Option 3	Option 4
Bank account visibility	x	x		Direct connection	Bank portal consolidation	Customized data base	
Bank fee management	x	x	x	Third party software	Third party specialty app	Ad hoc benchmarking	
Bank account management	x	x	x	Intranet database	Entity management software	Corporate performance system	Third party specialty app
Bank relationship management	x		x	Intranet database	Entity management software	Corporate performance system	
Bank account reconciliation	x	x		Third party software	Outsourced	Bank-specific solution	
Debt administration	x	x	x	Intranet database	Corporate performance system		
Debt compliance			x	Third party software	Outsourced		
Investment administration	x	x	x	Intranet database	Investment portal	Corporate performance system	Third party specialty platform
Payment initiation	x	x		Bank portal	Outsourced		
Cash forecasting	x	x	x	Intranet database	Corporate performance system	Third party specialty app	
FX	x		x	Third party software	Bank portal	Outsourced	
Hedge accounting	x	x		Third party software	Outsourced		
Intercompany netting	x	x	x	Third party software	Outsourced		
Cash pooling	x	x		Bank account structure/service	Outsourced		

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Summary

Technology has brought significant change to the practice of treasury management and the pace of technology-driven disruption shows no signs of a slowdown. This creates opportunity and danger: opportunity to improve controls, risk management and operational efficiency and risks in those very same areas. Action must be taken because doing little or nothing will eventually cut treasury off from the ecosystems required to conduct business.

The solution to this challenge lies in the three step process outlined earlier; awareness, evaluation and dynamic assessment. For the companies where treasury gets this right there will be significant competitive advantage. Better hedging and working capital management will enable better pricing—or simply profit retention. Improved control will lower compliance costs which reducing the absolute level of losses. Meeting the needs of other stakeholders will also help to ensure a sustainable solution.

The opportunities and approach are clear. It remains to the progressive treasuries to capture them.

About TAG

Treasury Alliance Group consults with clients globally in the areas of treasury operations, banking, payments, technology and risk. With decades of experience our consultants deliver practical, realistic solutions that meet each client's unique requirements. We welcome the opportunity to discuss how our experience can help meet your challenges.

Contact us by email at contact@treasuryalliance.com
or call +1 630-717-9732.

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