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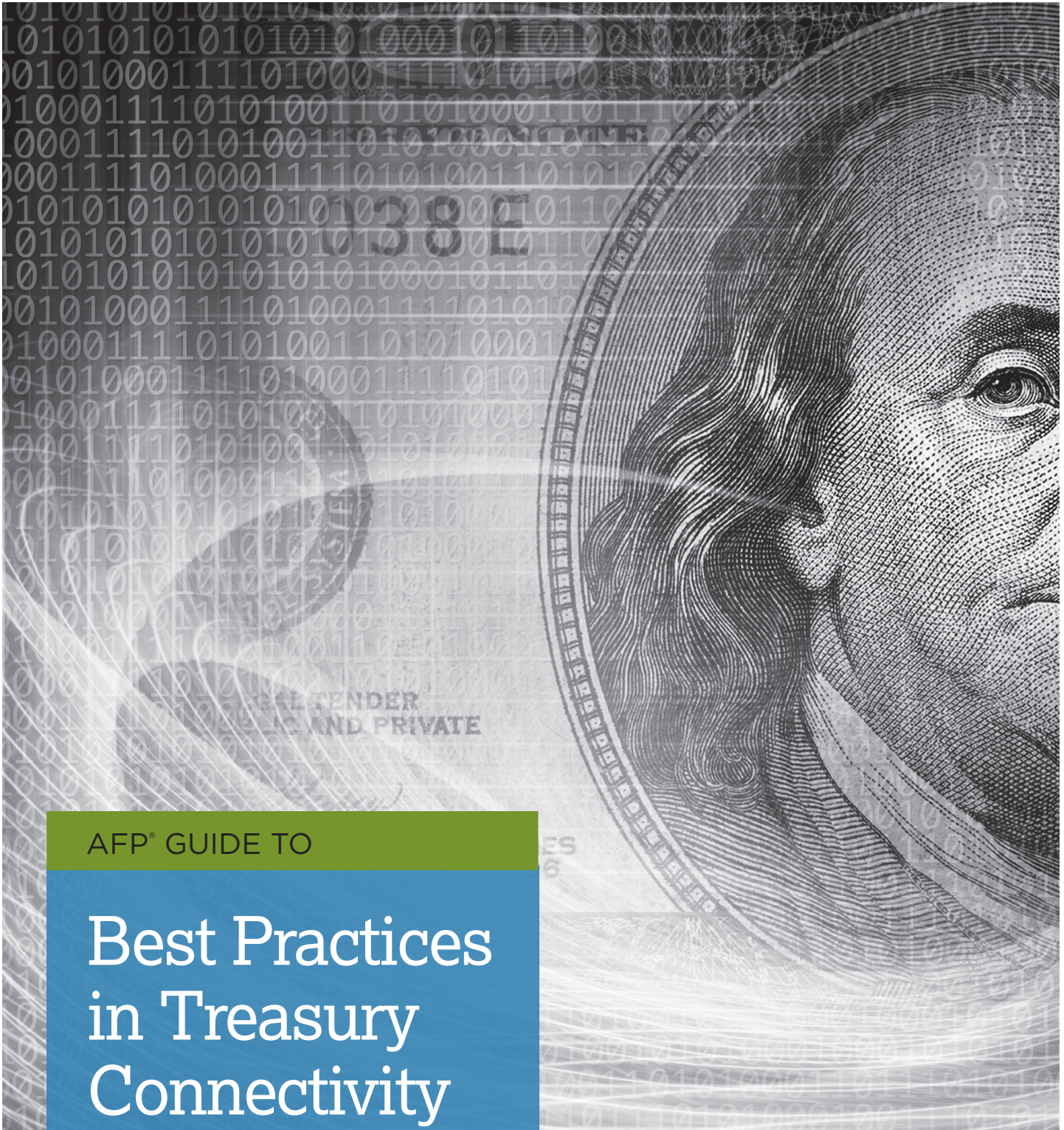ASSOCIATION FOR
FINANCIAL
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AFP® GUIDE TO

Best Practices in Treasury Connectivity

TREASURY IN PRACTICE SERIES

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TREASURY IN PRACTICE SERIES
The Best Practices in Treasury Connectivity

CONTENTS

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Kyriba is proud to underwrite the latest Treasury in Practice Series, Best Practices in Treasury Connectivity.

Connectivity is key to information transparency. Without bank connectivity, treasury teams act with imperfect cash visibility. Without ERP connectivity, treasury operates on an information island, making guesses about forecasting in the absence of actionable financial data. With the movement to the cloud and mobile technology, connectivity is simplified and within reach of every organization, anywhere in the world.

Treasury connectivity – to banks, to ERPs, across treasury systems – has always been complicated. This guide helps break down what is important for treasury teams to understand and offer a variety of expert viewpoints on how to perfect connectivity.

We found the following to be critical information for any organization wanting to improve how their treasury systems connect:

1) Automation is always possible
2) Security need not be compromised
3) IT does not need to be involved; in fact, IT should not be building interfaces or file formats
4) Know your connectivity requirements and work with trusted advisors who can ensure you make the right technology investments for your needs. Not all solutions are the same.

Kyriba is a proud sponsor of the AFP Treasury in Practice series so that CFOs and treasurers are better informed and can perfect connectivity automation, security and reliability while minimizing connectivity costs. Please enjoy this guide.

Best regards,

Bob Stark
Vice President, Strategy
Kyriba

INTRODUCTION

Connectivity is the glue that holds all of the key functions in modern corporate treasury together. Without it, there's very little that a treasury department can accomplish.

In this Treasury in Practice Guide, underwritten by Kyriba, we will examine best practices in treasury connectivity. We'll go through the systems that treasury connects to; the different connectivity protocols; external connectivity through treasury management systems (TMS) and internal connectivity through enterprise resource planning (ERP) systems; and new technologies that are, essentially, the future of connectivity.

"Treasury has different connectivity requirements," said Bob Stark, vice president of strategy for Kyriba. "Most people immediately think of bank connectivity, which is very popular and changing with the pending adoption of application programming interfaces (APIs). But within treasury's universe, connectivity can have different meanings."

BANK CONNECTIVITY – WHAT TO KNOW

Bank connectivity is among the most essential for treasury teams. There are multiple facets to bank connectivity, from downloading reports, to uploading payments, to considerations around how technology is changing.

"When we start talking about bank connectivity, most will think about bank formats," Stark said. "While formats are a big part of connectivity, it's best to start with the protocol—*how* you actually connect to a bank."

When connecting to banks there are many choices that treasury can choose. In North America, FTP (File Transfer Protocol) is typically the standard for domestic connections, whereas SWIFT is the most common for connectivity to international banks. While there are global protocols such as EBICS that are for specific countries, these are not often used by American companies.

However, as banks begin to open up their platforms via APIs, many predict that both FTP and SWIFT connections could become obsolete, especially as banks identify opportunities to expand real-time cash management services via APIs that were not possible using protocols such as FTP.

When it comes to bank formats, there are many choices, largely dictated by geography. For bank reporting, we often see BAI files in North America and MT formats internationally. Banks are starting to offer XML ISO 20022 CAMT files as an alternative to these traditional formats. Many expect XML CAMT formats to become the market standard, a position SWIFT has endorsed as it looks to replace MTxxx formats with ISO 20022.

CONNECTIVITY PROTOCOLS AND FILE FORMATS

Given that treasury typically relies heavily on vendors for connectivity, there is often a lot of confusion around the difference between connectivity protocols (FTP, SWIFT, APIs, etc.) and file formats, which are the language of connectivity.

Though confusion around this is common, it's really not terribly complicated when it comes to bank reporting. Your bank will deliver a few different file formats; they may give you a choice, or they may not.

The bank always dictates the protocol and it always dictates the file format, so when it comes to

payments, you need to be sure that you can accept what is offered. "Your bank may say, 'Here's what you're getting. Hope your TMS can support it.' There may be a little collaboration, but in the end, it's their decision," Stark said. "So it's important to know that there are different file formats and you want to make sure you have the flexibility to support those."

This is important for two reasons. First, you want to be sure you can actually see the file in your treasury system. And second, your ERP system needs to see it as well, and your ERP may not have the same flexibility as your TMS. For example, your ERP may only be able to accept BAI files. If so, you'll need to be able to convert all files to BAI for the ERP.

In the case of wine and spirits company Brown-Forman, its banks are moving to Secure FTP (SFTP) for bank payments and other activities, but it's been an easy process to deal with because treasury wanted to move that way anyway, given the enhanced security. "It's been hand-in-hand; if we were starting from scratch with them and didn't have a legacy, they would go with SFTP," said Robert Waddell, director of global treasury. "But since we have a legacy infrastructure in place, they made an exception to stay with what we have and we're slowly migrating to SFTP. And from our end, we're dealing with PCI compliance and moving credit card data, so we've turned on SFTP for that activity."

> "When we start talking about bank connectivity, most will think about bank formats. While formats are a big part of connectivity, it's best to start with the protocol—how you actually connect to a bank."

3
BANK CONNECTIVITY – WHAT TO CHOOSE

To determine the most appropriate methods for bank connectivity, a good place for treasury to start is with its banking profiles. For example, if you have three domestic banks, and one is your "lead" bank, that network would likely be best managed by host-to-host connections. You probably won't require third-party software or the use of a network like SWIFT to be able access your banks. You can connect to them through FTP or an API directly, which would allow you to download statements and upload payments without any middleware or intermediary networks.

The treasury department at telecommunications giant Sprint typically uses the online portals that its banks offer. Treasury manually logs in and pulls the bank file and imports it into its treasury workstation. "Because we're on the website for multiple reasons like initiating payments, we just go ahead and download the BAI formats that our banks offer for our workstation," explained Howard S. Smith, CTP, treasury manager. "It's a small enough operation. We just got in the habit of doing it this way so we don't have to compete for IT resources. And we have an older workstation; some of the newer workstations have an easier setup in the cloud. So we're probably on the back half when it comes to automated connectivity."

Sprint has used its treasury workstation for about a decade and is in the market for a new one, and will likely go with a Software-as-a-service (SaaS) module that is managed by a TMS vendor. And connectivity between the treasury workstation and the banks could possibly be simplified, depending on the relationship between the TMS vendor and the banks. "If the vendor already has a relationship, then it could just be a matter of signing an authorization," Smith said. "It could be as easy as flipping a switch. Or maybe it works well with the bigger banks, but maybe with the smaller banks, you have to involve IT."

Sprint's treasury department is also looking to do more international reporting with its new system. International payments may also be possible in the future, but right now they are handled by third parties in local entities in-country and that looks unlikely to change anytime soon. "I don't know that the system will be able to handle the payment mechanics of it," Smith said. "There's a lot of front-end stuff—the AP aspect of it—right now, it's decentralized and you would have to grant them access to the treasury workstation."

For treasury departments that are changing or looking for a TMS and don't want to disrupt their bank connectivity, Mack Makode, vice president and treasurer for sports apparel and footwear manufacturer Under Armour, recommends considering an aggregator. "The beauty of an aggregator is that if you change your treasury management system, you still have the connectivity with the banks," he said. "An aggregator can collect all the information from the banks and pull it into a consolidated feed. You can pull that consolidated feed into your TMS and the TMS will start reporting it. An advantage of an aggregator is that if you are not happy with your TMS, you can change it, because the feed coming from that aggregator can be connected to any TMS."

Though an efficient solution, Makode has not yet observed many treasury departments using aggregators for their connectivity needs. "Usually, when treasury departments think about automating collection and consolidation of information, a TMS comes to mind," he said. "They install a TMS and maybe that TMS has its own connectivity or its own contract with an aggregator and will get that information to them. But then they are married to that TMS and if they switch, the new TMS has to get all that connectivity done for them again."

Like Sprint, Brown-Forman also currently uses host-to-host connections. "We considered SWIFTNet, but we only have three global banks and we connect to them host-to-host through FTP," said Waddell. "We have electronic bank statements coming in that feed our ERP system, as well as issuing the payments going out. Those are the two primary files. We have all types—BAI2 files for incoming bank statements, we have IDocs and XML versions 2 and 3, primarily for outgoing payments from our ERP. We also have payroll aggregators that connect to our banks that pass through payroll files in XML format."

However, most corporations that have large domestic and international banking relationships will typically look to an intermediary for some or all of their bank connectivity. The volume of what treasury sends and receives becomes much more important, because an intermediary such as SWIFT factors transaction volumes into its pricing.

In some cases, corporates have to spend that money, because there is no other way to connect to those banks. And then from there, it's a matter of deciding which SWIFT service best suits your needs. "Are you sending lots of wires? Are you sending mostly low-value bulk payment files? Do you have significant volume or just a couple payments here and there to a bank? What is that makeup? That will determine what the best strategy is going to be," Stark said. "It's complicated, but again, it's a decision of what you need to connect to, and what you need to send and receive. Those answers will determine the choice(s) of solution."
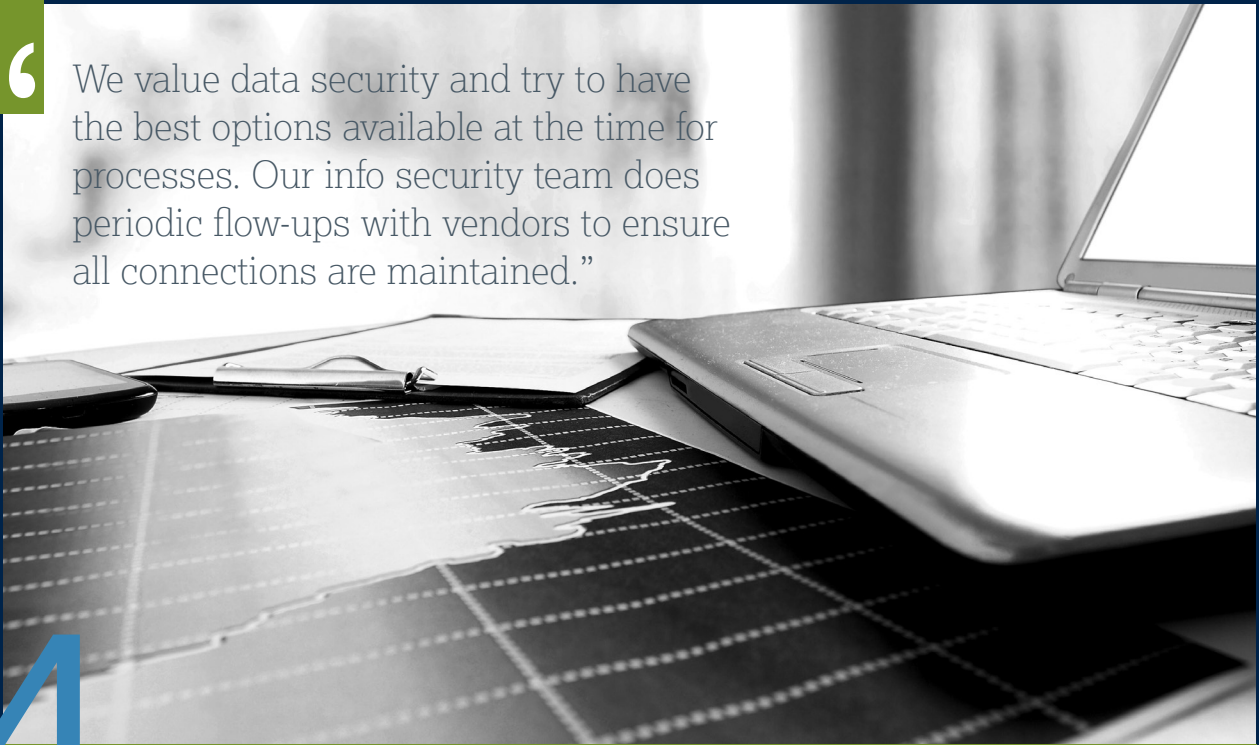
And sometimes, choosing different bank connectivity methods can ultimately save money. The treasury department at multinational courier FedEx is in the process of moving over to SWIFT for all of its payment files. Currently, when a bank wants to send treasury an MT940 statement, it has to go through one of FedEx's two aggregator banks. "We connect to the aggregator, and they transmit a BAI file to us and those files are structured like MT940s," said Kyle Kremser, CTP, treasury systems and controls principal for FedEx.

But now by moving to SWIFT, treasury will be able to connect to those banks around the globe and receive those statements directly. FedEx should achieve substantial cost savings with this effort. "Internationally for treasury we see that the connection will be more expensive, but we are eliminating the aggregation in the U.S. as well, and net we will be saving money for our treasury connections," he said.

This is part of a larger initiative from FedEx's treasurer to move to SWIFT payments enterprise-wide. "We are already moving to SWIFT for the treasury payments, but we're being challenged additionally to move everything to SWIFT, including accounts payable and reconciliation statements coming in," said Kremser.

4 KEYS TO CONNECTIVITY

Four factors matter most for connectivity: security, automation, cost and reliability. Treasury departments need to consider all of these as early on as possible.

SECURITY

Regarding security, treasurers move money every day, and if that movement is not secure, there's no telling whose hands it could end up in. If your connections are secure, then the risk of unauthorized activity is reduced. But it is an issue that needs to be addressed, so that all parties involved can have confidence that no outside actors can come across a file that is being exchanged between systems.

Jennifer Earyes, director of treasury risk for student loan company Navient, recommends applying payment controls in which one person is only granted the ability to set up payments, while another individual only has the ability to release payments. Additionally, Navient's treasury requires RSA tokens and two-factor authentication for those individuals to log into the TMS. "So we're mimicking bank security," Earyes said.

Surprisingly, many businesses aren't employing this method, despite the rapid rise of business email compromise (BEC) scams. "It was a no-brainer for us, but it's not a common trend from what we've been hearing from our developers," she said.

Using SFTP also adds another layer of protection. "We value data security and try to have the best options available at the time for processes," Kremser said. "Our info security team does periodic flow-ups with vendors to ensure all connections are maintained."

For more insights on security, be sure to download the TIP Guide from AFP and Kyriba that focuses on securing bank connections.

"Most people start with a spreadsheet, and 80 percent of their time usually goes into collecting and consolidating. My goal has always been to reverse that, and target only 20 percent of the time for collecting and consolidating and 80 percent for analysis and creating business intelligence. To achieve this reversal, you have to create connectivity to the ERP system or where the information is coming from and automate the entire data gathering process."

AUTOMATION

Automation is incredibly important when it comes to connectivity. It cuts down on manual processes greatly, freeing up treasury to add more strategic value to the organization.

Under Armour's Makode noted that treasury processes could be placed into "four big buckets"—collecting data, consolidating data, analyzing data and creating business intelligence. "Most people start with a spreadsheet, and 80 percent of their time usually goes into collecting and consolidating," he said. "My goal has always been to reverse that, and target only 20 percent of the time for collecting and consolidating and 80 percent for analysis and creating business intelligence. To achieve this reversal, you have to create connectivity to the ERP system or where the information is coming from and automate the entire data gathering process."

For example, when it comes to cash management and cash flow forecasting, the basic goal of the treasury department should be to eliminate spreadsheets and build an automated stream of information, Makode explained. "You need to connect to your ERP system and pull in all your expected receivables and payments and then consolidate that information to create your short term forecast," he said. "People will do that on a spreadsheet, but there is room for automation. There are a lot of pockets within treasury where this type of connectivity could bring operational efficiencies."

Navient's TMS receives multiple BAI files a day per bank to do its cash forecasting and cash position. It's all automated through run cycles, which are critical because Navient receives hundreds of ACH payments and wires per month.

Of course, no system is infallible, and if a technical issue causes a file to fail to be loaded in time, Navient's treasury team has to handle things manually. "Of course, we have a buffer between the time we're expecting the bank to load the file versus the time that the system will go to retrieve it," Earyes said. "But there are times when the file isn't there are we have to retrieve it."

Earyes noted that in the past five years, file errors per bank have decreased, even as the number of Navient's banking relationships have increased. "This has come as a result of Navient's growth through acquisitions—stabilizing the occurrence of manual intervention as we onboard those new bank relationships," Earyes said.

For FedEx, as it moves to its SWIFT connection, treasury expects to shift away from many of its current manual processes to more automation. Kremser expects this to not only make the process easier but also much more efficient. "We'll get a lot more standardized data coming through," he said. "This will also help us to be more bank agnostic."

For example, one of FedEx's treasury divisions has a TMS that runs on a server that has not been updated. So the division has to manually download CSV files for bank balances and upload payment files to the bank. "That's how they communicate with the bank," Kremser said. "So efficiencies will be driven based on the communications network that we'll establish. And it will also add security because there won't be anyone who touches those data files."

COST

Cost is, of course, a big factor when it comes to connectivity. As is always the case today, treasury departments need to do "more with less." So the more you know before making that final decision, the better. And the most important thing to know is what you actually need.

Having the connectivity conversation with vendors can be overwhelming for treasurers. Therefore, it's a good idea to outline what you need and how much you can spend. For example, if you want to connect to SWIFT, you'll first have to determine what version of SWIFT you want. And you may find that SWIFT isn't actually needed.

In Brown-Forman's case, the company has a lot of international bank accounts, but it only has three banking partners. Thus treasury determined that there wasn't a need to be on SWIFT. "I think if you have five to 10 or more international banks, I think you could justify a SWIFT connection," he said.

So it's a good idea to shop around. This will help you come up with an idea of what you really need. "Different people may tell you different things, because not every TMS or ERP provider has all of these different options built into their platform," Stark said. "As a result, a salesperson will sell what they have—not what's best."

Still, that doesn't mean that treasurers need to be experts in connectivity. And let's face it; you've already got a lot on your plate to deal with. The more you know, the better, but ultimately, as long as you have a solid idea

> "You're outsourcing this for a reason. You can't have or don't want your IT involved and you shouldn't want treasury staff project managing the onboarding of banks, trying to make decisions about whether XML or BAI formats are needed, or whether you should use SWIFT or an API. You want the expert to tell you what's important."

of what you need, it shouldn't be too difficult to find a technology partner that can provide the right service. "You're outsourcing this for a reason," Stark said. "You can't have or don't want your IT involved and you shouldn't want treasury staff project managing the onboarding of banks, trying to make decisions about whether XML or BAI formats are needed, or whether you should use SWIFT or an API. You want the expert to tell you what's important."

And it's important to make sure you're getting your money's worth when it comes to connectivity. In Sprint's case, treasury doesn't have much direct connectivity right now aside from payment files on its payroll and AP systems. But those connectivity costs are necessary. "It's worth it, just given the volume and frequency of activity," Smith said. "So for that stuff—the ACH and check files—there is definitely enough to justify the cost."

RELIABILITY

Lastly, the capabilities of your connections are incredibly important. If your connections are faulty and aren't able to deliver on your needs, you obviously have a big problem on your hands.

"When you look at the SWIFT network, and it's 99.9 percent reliable; you know that when you make a payment, it gets done," Waddell said. "So whatever network or process that you're using, you want to make sure it's not like you're in a third world country."

This is another reason to ensure the right questions are being asked of treasury technology and bank connectivity vendors. Having a clear understanding of what efforts your service providers are making to ensure bank connection issues are handled without disruption to your business should be a key decision point.

5

ERP SYSTEMS AND TREASURY PORTALS

Almost every organization will connect their treasury system to one or more internal ERP solutions. When connecting a TMS to an ERP system, there are several important factors to consider.

ERP

When considering how the treasury and ERP systems should connect, treasury teams must know what information within the TMS should be synchronized with the ERP. Does accounting want to receive original bank statements and/or journal entries from bank transactions? What type of information is within the ERP that treasury can use for cash forecasting? Will the TMS be used as a payments hub to standardize ERP to bank connectivity? These are the types of questions that need to be answered to determine who is involved and how connectivity should be structured.

When connecting to the ERP, you'll be working with your IT department, as they are the ones that own the platform (or multiple platforms) that the company is using. Presuming you have established what information touch-points between TMS and ERP are required, the next step is identifying what, if any, pre-built connectivity is available. You may find that everything you need is already there. Or you might find that connectivity does not exist yet. If it's the latter, then you need to determine what has to be built as an interface. IT may prefer to make the connection a very simple file interchange, like an FTP. Or, they may prefer something more advanced like an API and even be willing to bear the brunt of the cost.

Obviously, TMS/ERP connections can be seamless if your treasury system is actually part of the ERP, as is the case for Brown-Forman. "We use SAP's treasury workstation and we're an SAP global shop," Waddell said. "We have one system globally and one system for treasury on that module. All the payments are host-to-host through SAP AP, updated through treasury and out the door via a payment file to the banks."

However, Stark added that the final piece of ERP-to-bank connectivity can still remain a challenge, even if the ERP-to-TMS is easily managed. That is why many CFOs adopt payment hubs; to offer the final link of connectivity automation from ERP to bank.

Makode noted that many treasury departments are still mired in manual processes when it comes to connecting to the ERP. "People try to take accounts receivable and accounts payable information, download it from the ERP system, create a spreadsheet and then create their own dashboard," he said. "You can get a product from the market now that will connect to the ERP system and have that dashboard readily available so you can monitor your working capital very easily."

Again, automation is the key; Makode added that having the ability to quickly gather all your receivables and payables information from the ERP can simplify the process immensely. "You can pass on that information very easily to your platform or to your bank, and help them value the AR," he said. "It's the same thing on the AP side; you could get all that information connected automatically into a product where your banks can look at it and help you with your supply chain finance program."

TREASURY PORTALS

Maturity of the cloud has developed many new portals for treasury—for foreign exchange, cross-border payments, investments, debt covenants, and much more. SaaS platforms are easily suited to connect with each other as they natively support APIs, but also support technology that allows "reskinning" the user interface to make the systems look alike. Banks have adopted this approach for years by incorporating third-party systems into their banking portals.

For treasury systems, the most important consideration is what information is being shared.

For example, when managing investments, treasury teams have historically chosen to download investment data and set it up in their TMS as either transactions or summary balances. "More recently, organizations are preferring a two-way integration where they wish to make cash decisions in the TMS, digitally present that to their investment portal, and then manage the post-trade activity in their TMS," Stark said. "There is an entire before and after experience that requires additional connectivity."

While not every organization will demand complicated integration, those that do need to know what information they want downloaded. "Do you just want balances for your account, so you can see your overall cash and liquidity? Or do you want to see actual transactions where you can actually apply some workflow, such as automating trade settlements in your TMS. What information I need will determine the best way to integrate," Stark said.

The mechanics of connectivity to third-party platforms does not need to be complicated. Sometimes that integration is already pre-built; there may be a web service between those two platforms. If not, you may be able to integrate via an FTP or an open API. You need to figure out the best option for the volume of what is being transferred back and forth. If you have significant activity and automation is a priority, investing more in that interface will drive value. If you only have trades once a day, twice a week, etc., then you probably aren't too concerned about having a real-time API.

MINIMIZING INTERNAL RESOURCES

Availability of resources is incredibly important when it comes to connecting your treasury platforms. Makode noted that treasury typically has to compete for IT resources within the organization, so using a SaaS TMS can minimize your own internal resources. "If I were looking to implement any system, I'd go with a cloud-based system," he said.

Using a SaaS system can also be very cost-effective for treasury. Makode noted that SaaS TMS vendors generally should be able to leverage their experience managing the needs of multiple treasury departments. "Presumably you are not creating anything new; the expertise is there, because they've already gone through the connectivity for other treasuries," he said. "They just need to replicate the connections for your corporation. Obviously, your ERP system could be different from those of their other clients. But even on the ERP side, most companies utilize well understood ERPs and your SaaS provider most likely has already made those connections. Therefore, using a SaaS TMS can be very cost-effective, as opposed to hosting your own system and having to make those connections from scratch."

6 APIs

APIs are the future of treasury connectivity, as they offer a much more fluid interaction than FTP or financial networks can. That's why banks that want to implement services like real-time payments are looking at doing so through APIs rather than FTP; it's simply much more efficient.

"An FTP delivers a batch file at a certain point in time rather than offering a constant refresh of information," Stark said. "It's very difficult to do real-time payments and real-time acknowledgements of payments over a batch driven protocol."

But for all their promises for the future, APIs are already heavily in play today as well. As Makode noted, most of the connections between different systems to the ERP are done through APIs. "APIs are the language that allows one system to talk to another and automates the transfer of information from one system to another," he said. "That's another thing about using a cloud-based system; these APIs have already been created. Say your system has to be connected to the ERP system; the vendor knows what API needs to be used to take the information from the ERP system. They will provide that API to your IT people, who can take that API and modify it, if it's needed."

For treasury, APIs not only represent a quicker and more cost-effective method of integration, they also offer a transformation in the way we manage treasury information. For example, today's cash management processes are driven by point-in-time files delivered by banks—the prior day file, the first and second presentments. APIs will offer a stream of information rather than batched bank reporting, meaning that over time, treasuries will begin to manage cash more fluidly, rather than at a single time each day. While this may be hard to grasp because "doing cash by 10 a.m." has been ingrained within cash managers for decades, the combination of real-time information alongside globalization means that treasury is ready to become more on-demand throughout the day. API-supported connectivity can drive that.

6 CONCLUSION

It may not be essential for every treasury professional to have an intimate knowledge of connectivity. After all, much of treasury's connectivity is managed by software vendors and banks. But the more you know about connectivity, the more you'll be able to understand your needs in terms of bank statements, payments, etc. You may find that you've been paying for services you don't actually need, or there are services out there that you haven't been getting that would make your life much easier. So take the time to educate yourself on connectivity.

KEY TAKEAWAYS

4

When considering how the treasury and ERP systems should connect, treasury teams must know what information within the TMS should be synchronized with the ERP.

1

Formats are a big part of bank connectivity, but protocols are how corporates actually connect to their banks. In North America, FTP is typically the standard protocol for domestic connections, whereas SWIFT is the most common for international connectivity.

5

Maturity of the cloud has developed many new portals for treasury—for foreign exchange, cross-border payments, investments, debt covenants, and much more.

2

To determine the most appropriate methods for bank connectivity, a good place for treasury to start is with its banking profiles. Companies with fewer banks can usually get by with host-to-host connections, while corporates with vast banking networks are better served using an intermediary.

6

Availability of resources is incredibly important when it comes to connecting your treasury platforms. Treasury typically has to compete for IT resources within the organization, so using a SaaS TMS can minimize your own internal resources.

3

Four factors matter most for connectivity: security, automation, cost and reliability. Treasury departments need to consider all of these as early on as possible.

7

APIs offer a much more fluid interaction than FTP or financial networks can. That's why banks that want to implement services like real-time payments are looking at doing so through APIs.

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Andrew Deichler is the editorial manager for the Association for Financial Professionals (AFP). He produces content for a number of media outlets, including AFP Exchange, Inside Treasury, and Treasury & Finance Week. Deichler regularly reports on a variety of complex topics, including payments fraud, emerging technologies and financial regulation.

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