

2020

ANALYST REPORT

TREASURY AGGREGATOR Bank Connectivity Solutions

THE DEFINITIVE GUIDE TO TREASURY AGGREGATION TECHNOLOGY SOLUTIONS

- Deepen Security & Simplify Compliance
- Streamline Payments & Enhance Visibility
- Support Organizational Growth

This special edition provides an exclusive look at the solution set offered by Fides.



2020

ADVISE ASSIST RESEARCH INFORM

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Welcome to the 2020 Treasury Aggregators (TA) Analyst Report, your definitive guide to insightful connectivity in the digital age. Our team created this publication with one overarching goal in mind—to equip our readers with critical information as they seek answers to complex treasury technology questions.

Should my organization adopt an aggregation technology solution? If so, which system offers the functionality mix my firm requires? Will an implementation be too difficult and disruptive for my team and our organization? How do I streamline the process to achieve optimal results? After months of market research and comprehensive data analysis, we've compiled this report to help treasury practitioners make more contextually informed decisions regarding innovative financial programs.

We hope the coverage within, which revolves around current and projected challenges across the industry, will help readers overcome obstacles, enhance treasury operations and improve workflow. Let's get started!

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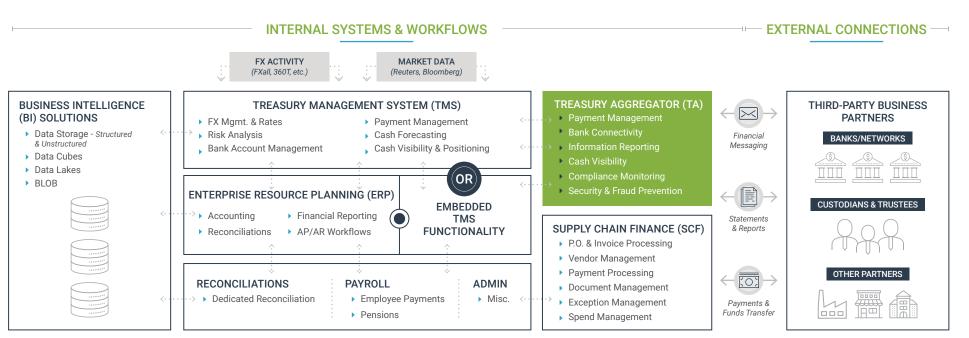
Treasury Complexity

The responsibilities facing treasury in our era frequently outpace treasury staff's time and capacity. Fortunately, technological tools are advancing just as rapidly as the complexity and breadth of the demands on treasury, offering leverage to overwhelmed departments. With so many types of technological tools, however, and with such breadth in their uses and implications for treasury, understanding the tools designed to deal with the overwhelm can be overwhelming too. This report seeks to bring clarity and understanding to treasury professionals seeking to understand and potentially leverage treasury aggregators (TAs), a category of treasury technology designed to consolidate incoming data and handle outgoing payments.

THE TREASURY TECHNOLOGY LANDSCAPE

The treasury function covers a variety of tasks and processes, from cash positioning to hedging and everything in between and it requires connectivity to many areas both internal and external in order to perform each task well. A variety of technology solutions have been developed to help treasury manage and automate portions of the workflow and connectivity. Some solutions specialize in a particular process, while others cover multiple areas. Solutions that fill out the treasury tech landscape or exist in the same ecosystem include treasury management

Treasury Technology Landscape



systems or treasury & risk management systems (TMS/TRMS), ERP (enterprise resource planning) systems, business intelligence or BI solutions, supply chain finance (SCF) solutions, and—the topic of this report—treasury aggregators. There is some overlap between different types of treasury technology, but each type (and even each product) has its own distinctive features and its own role and uses.

SCORE RANGES MPLEX

51 +

37 - 50

22 - 36

15 - 21

7 - 14

15

18

An aggregator's core role is to automate two sections of the treasury workflow: information consolidation and payments. Like a smart switch, an aggregator:

- 1. Pulls bank data in and sends it where it needs to go in the right format, and
- 2. Supports all the payment types, controls, and activities necessary to manage and

deliver outgoing payments to the right banks or networks via its payment hub functionality.

To qualify as a treasury aggregator, a solution must be able to perform both functions.

Treasury aggregators are connectivity specialists. They can connect to bank networks, maintain H2H connections (SFTP and FTP), and handle proprietary

formats from across the globe. On the payments end, an aggregator can execute a payment whether it has been initiated through its own portal or through a connected TMS, ERP, or other system. This ability to handle internal connections, external connections, and the payment and data aggregation processes that run between them makes aggregators a powerful streamlining tool for modern treasury departments.

Calculate Your Complexity: Two primary elements determine your need for a treasury aggregator: the complexity of your payments and the complexity of your banking information structure. To determine each, use the calculators below. The lefthand column numbered 1-9 is your score for each of the following columns (3-4 Payment Origination Areas = score of 2, 3-4 Payment Systems = score of 3, etc.). Your "Complexity Direction" should be multiplied by the sum of your score for the other columns, yielding your final result. The bolded selections for each column show a sample score, with the corresponding sample results shown below the final complexity ranges for each calculator.

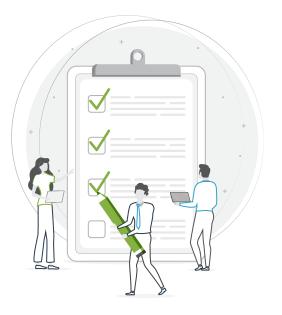
Payment Complexity Calculator

9		>20		>31	>20	>30	>40			FINAL SCORE R
8	>20	16-20	>20	21-30	16-20	26-30	31-40			HYPER COMPLEX
7	16-20	11-15	16-20	16-20	11-15	21-25	21-30			HIGHLY COMPLEX
6	11-15	9-10	11-15	11-15	9-10	16-20	16-20			COMPLEX
5	9-10	7-8	9-10	9-10	7-8	11-15	11-15			MODERATE
4	7-8	5-6	7-8	6-8	5-6	6-10	6-10	Increasing Rapidly	x 1.5	SIMPLE
3	5-6	3-4	5-6	4-5	3-4	3-5	3-5	Increasing	x 1.2	
2	3-4	2	3-4	2-3	2	2	2	Remaining Constant	x 1	Sample Raw Total
1	1-2	1	1-2	1	1	1	1	Decreasing	x 0.75	With Factor Applied
	PAYMENT ORIGINATION AREAS	PAYMENT SYSTEMS	PAYMENT TYPES	PAYMENT FORMATS	PAYMENT BANKS	PAYMENT CURRENCIES	COUNTRIES		TION	

Data Aggregation Complexity Calculator

									FINAL SCORE	RANGES
8	>20	>10	>20	>20		>20			HYPER COMPLEX	43 +
7	16-20	9-10	16-20	16-20		16-20			HIGHLY COMPLEX	31 - 42
6	11-15	7-8	11-15	11-15	>25	11-15			COMPLEX	19 - 30
5	9-10	5-6	9-10	9-10	16-25	9-10			MODERATE	13 - 18
4	7-8	4	7-8	7-8	11-15	7-8	Increasing Rapidly	x 1.5	SIMPLE	6 - 12
3	5-6	3	5-6	5-6	6-10	5-6	Increasing	x 1.2		
2	3-4	2	3-4	3-4	3-5	3-4	Remaining Constant	x 1	Sample Raw Total	24
1	1-2	1	1-2	1-2	1-2	1-2	Decreasing	x 0.75	With Factor Applied	36
	SOURCES OF DATA (BANKS)	SOURCES OF DATA (EXTERNAL INFORMATION)	SOURCES OF DATA (INTERNAL)	FORMATS OF DATA	RECEIPT / DELIVERY ENDPOINTS	TRANSFORMATIONS REQUIRED (INTERNAL)	COMPLEXITY DIRECTION			

WHO NEEDS A TREASURY AGGREGATOR?



If you've determined your complexity level using the calculators on the previous page, but you still find it difficult to discern whether your organization really needs an aggregator, see if some of the following scenarios sound familiar. If so, an aggregator may be well worth your investment.

You spend a significant amount of time adapting to new message formats. While all

• companies must adapt to the emergence of new message formats for payments and reporting, it can be a more or less overwhelming task for different organizations. Whether due to the number of regions your organization operates in, the speed with which it expands geographically, the volume of payments, the level of acquisitiveness, or any other reason, adapting to new formats will be a more significant issue for some organizations than for others. If you find that your department routinely devotes significant amounts of time to adapting, you may need an aggregator to help simplify the format translation for you.

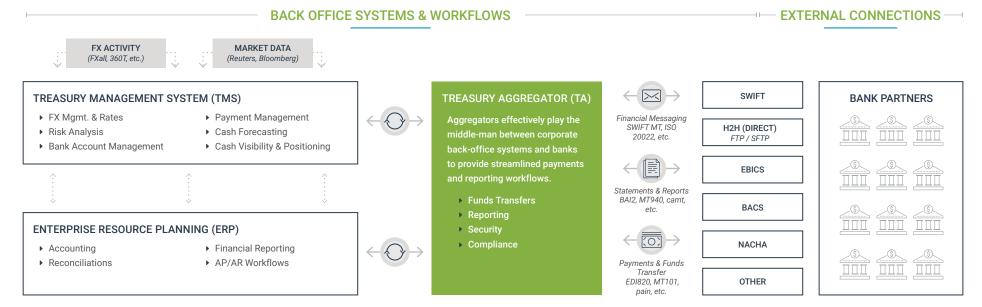
You just acquired a subsidiary and are now juggling multiple treasury and payment • **platforms.** As beneficial as acquisitions can be, they often bring significant complication to treasury. With an acquisition, there may come new platforms, payment streams, and workflows, and it may be that none of them will integrate smoothly with your own. Even a well-managed and highly beneficial acquisition can lead to treasury spending all its time on a juggling act, trying to corral disparate payment processes and manually hand off information between systems, to the neglect of more strategic tasks. If your treasury department is struggling in the aftermath of an acquisition, it might be time to look into centralizing and integrating your scattered payment processes through an aggregator.

You have been growing quickly and now operate in diverse regions across the globe. Expanding into new regions is something to celebrate, but it brings its fair share of complexity and added work too. Especially when this organizational expansion occurs more rapidly than the treasury department grows (as it almost always does), the additional compliance, payment types and formats, banks, currencies, and other factors that multiply with each new country or region can quickly outgrow treasury's bandwidth. For organizations already operating in diverse regions or anticipating this kind of growth, a treasury aggregator should probably be considered.

Security and/or compliance concerns related to payments cause headaches. • Neither compliance nor payment security take kindly to being neglected, yet the complexity of keeping up with each of them is constantly increasing and morphing. Perhaps your organization has recently faced a loss to fraud or a compliance-related fine. Perhaps you fear that such a loss or fine is imminent, or you prevent these situations only by spending more time than you can afford on compliance and security. In any of these situations, relying on an aggregator might provide significant relief to your department. Treasury aggregators and TMS both connect to banks and play active roles in providing users with visibility, cash positioning and payments functionality. Parsing out the differences between the two can be puzzling, as their functionality does overlap. Their roles, however, are distinct.

To use an analogy, think of a phone. SFTP (SSH File Transfer Protocol) and similar connections are similar to having one phone for each person you need to call. It's quite the direct line, and if you have only one or two people to call, it might be very efficient for you. However, once you have several people to call, this setup becomes extremely inconvenient. Most TMS come with a few SFTP and similar direct connections to some of the most commonly used sources for treasury, such as Reuters and Bloomberg for market data. Now think of your cell phone. You buy a phone from one company, and typically, you buy service from another company, although on occasion the same company may provide both phones and service. The service provides you connectivity to anyone you want to call, not just one person, while the phone itself hosts this service, providing you with the user interface and the ability to perform various functions with the information you received. This is certainly preferable to the one-phone-per-connection setup if you have multiple people you want to call, although there might be differences of opinion on when exactly it makes the most sense to upgrade to the cell phone. A TA is like your phone service. It makes the connections, and it feeds them to other systems such as your TMS, which in this analogy functions like your cell phone. As in the analogy of some companies providing both the cell phone and the service, there are a few TMS offerings that also specialize in aggregation, with excellent, built-in TA functionality that allows them to sit under both headings. For the most part, however, the two categories are distinct, with aggregators pulling data in and sending payments out, while the TMS handles more of the functionality that puts the aggregator's data to use and plans the payments it makes.

Sample Technology Infrastructure



Industry Challenges Driving Treasury Aggregation

A number of elements affect connectivity, and nearly all these elements are changing and developing. Between the changes in formats, compliance, security and globalization, firms face significant and mounting complexity in their attempts to simply obtain data and make payments.

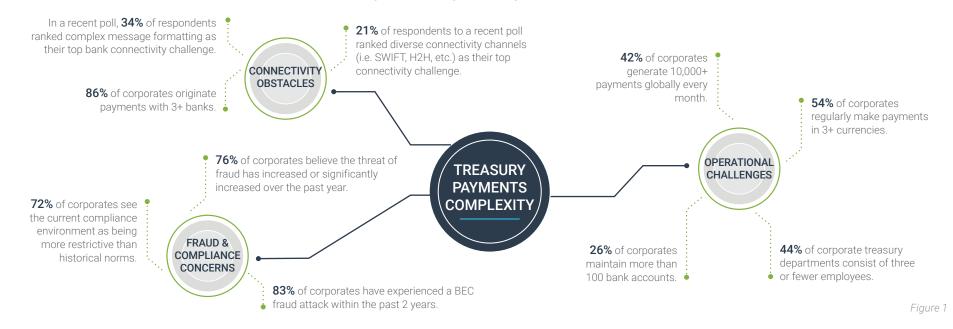
While some of the causes of complexity are negative or, at best, neutral, several other sources of elevated complexity spring directly from organizational growth. Far from trying to prevent these types of complexity, then, treasury must be prepared and equipped to encourage and support the organization as it grows. For many, this equipping will mean finding the right technological tools.

Treasury aggregators simplify the complexity, removing what was becoming far too heavy a burden for many treasury departments. They do this both by helping protect and manage what are unfortunate but inevitable realities (fraud, for example), and also by equipping treasury to support organizational growth and manage the repercussions of expansion.

PROTECTING AGAINST FRAUD THROUGH CONSISTENCY

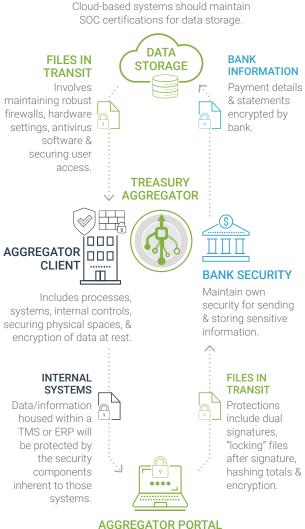
In addition to creating more work and confusion for staff, complexity and rapid change create spaces for fraudulent activity to slip in unnoticed. The rising complexity firms face today is effectively multiplying the fronts in the battle. Criminals, seeing the opportunity, are ramping up their efforts, and just as the rapid changes in technology give treasury leverage to operate more effectively and efficiently, these same advances benefit cyber criminals as well.

Treasury Complexity: The Payments Landscape



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Aggregator Security Components



System access may use IP filtering & multi-factor authentication. VPN for Your firm's information and assets are made most vulnerable to these attacks at the handoff points, and handoffs multiply with complexity. The more banks a company with manual processes has, the more logins it has that can be stolen. The more payments you make, the easier it is for a fraudulent payment to slip through. The more manual an approval process, the easier it is for steps to be bypassed and for staff to be too confused to recognize a real problem.

Treasury aggregators simplify the defense by corralling sensitive, vulnerable areas into one defensible place and process. Rather than multiple logins to multiple portals daily, users can log in once to the aggregator to access all their information. The payments process can be centralized and driven into a single, consistent process, with controls built into the system. This centralization reduces the number of handoff points, leading to fewer vulnerabilities.

This simplicity also leads to greater efficiency and increased compliance with security procedures. Employees who have left the company are more reliably removed from accounts when there is only one place to remove them—the TA portal—instead of multiple bank portals. All attention, development, and training can be directed to the one process, leading to a robust, up-to-date, well-understood, and system-enforced payment process that is far easier to defend than multiple fronts.

PAYMENT TYPES AND CHANGING FORMATS

Of all the changes treasury must adapt to, the changes in payment formats are some of the most positive. New

formats are called "enriched" for good reason, as they bring flexibility, accuracy, efficiency and greater detail to payment messaging. However, as helpful as these new formats are, they bring complexity with them as well.

New payment types and formats generally do not replace the old immediately. They are simply added to the ranks, with formats stacking up as the years go by. Treasury groups and their technology must be able to deal with both the old and the new rather than dealing with a one-time transition. However, there are different formats that have a sunset within various networks. This means that you have to either move to one of the newer, better formats or have your messaging provider handle the conversion from the old to the new for you.

Terms to Know: Reference Codes & Tracking Codes:

UETR: Unique End-to-end Tracking Reference code. This SWIFT tracking code follows the payment through the payment networks and is currently used with SWIFT gpi.

FED REFERENCE: Follows the payment through the Federal Reserve Wire System.

ACH REFERENCE CODE: Code that passes through Nacha.

Sunset Formats:

INTERBANK MT MESSAGES: Retiring 2025.





While rejecting the new format for as long as possible may seem to cut down on the complexity, this is neither helpful nor tenable. Currently, XML (Extensible Markup Language) stands poised as the "heir apparent" for the new standard, with more dominance than other formats in new implementations, and its advantages in conveying nuanced, accurate, detailed information reliably and efficiently make it highly advisable. However, it has not taken over the majority of total activity. Stuck between an excellent rising standard for messaging and those still most commonly used,

treasury technology must accommodate everything from XML back to positional and delimited formats.

This is a headache, but it's a headache a treasury aggregator can solve quite efficiently. Since it is part of an aggregator's job to act as a translator between various payment and messaging types, aggregators maintain "fluency" in all major formats. They add the new formats while keeping the old, removing that burden from treasury.

INCREASING ECONOMIC GLOBALIZATION

Even domestically, multiple formats and systems for payment settlement are frequently in use, and with the continual evolution of formats, this alone creates complexity for firms. As companies expand internationally, however, complexities multiply. Currencies must be added, and every new country's formats and the systems for their own payment types often several per country—must be dealt with. This increase in complexity of both sending and receiving information and payments with every country a firm expands into adds significantly to treasury's burden. It is almost never possible, however, for an internationally expanding company to add treasury staff quickly enough to keep up with this demand, so technology often becomes the only reasonable solution. While networks such as SWIFT make these cross-border payments plausible and much easier, they do not entirely remove the burden from treasury. Many countries lack a single SWIFT bank. Even if your foreign bank is on SWIFT, this still doesn't solve the payment type issue itself. Networks such as SWIFT provide the multi-format compatible platform and send the payment instructions, but they do not move the money. These networks make excellent tools for treasury, but staff must still perform the work and handle the complexity.

An aggregator, on the other hand, handles the connections, the formats, and additional controls and sanctions filtering, in addition to aggregating incoming data. Since aggregators specialize in connectivity, they are typically able to maintain or build out connections even with small banks and organizations across the globe. Moving this rapidly expanding complexity out of your own back-office and into an aggregator drastically simplifies cross-border connections and payments and frees up staff for work that truly requires their expertise.

BANK AND BANK ACCOUNT COMPLEXITY

With organizational growth come more banks and more bank accounts. With more banks and accounts come security vulnerabilities and strained daily processes. The data from every account must be compiled before visibility can be achieved, and since visibility is prerequisite to many of treasury's other functions, the complexity of reaching it can create a bottleneck. As inefficient as this lack of timely visibility is, however, its counterpart is often worse: lack of total visibility. Any operating bank account, even with infrequent activity, is vulnerable to fraud or other problems that need to be identified as quickly as possible. The control of monitoring every operating account daily means that if something happens, you can see it quickly, giving you the most time to respond and potentially recover funds. When accounts multiply as an organization expands, a point will come when manual processes for achieving visibility can't keep up. Rather than abandoning 100% daily visibility, many firms look to aggregators to automate the data gathering and aggregation portion, helping them maintain secure and efficient processes while supporting organizational growth.

CASH POSITION AND VISIBILITY

As fundamental as cash positioning and visibility are to the cash management function, many treasury departments find themselves struggling to achieve these as their firms grow. Manually logging into bank portals multiple times a day and trying to accurately and quickly consolidate all the information collected within Excel can become untenably complicated and demanding as the number of banks and accounts grows. Meanwhile, disparate payment processes and unintegrated systems can make cash position and visibility difficult to achieve in a timely and accurate manner even for those who do have a TMS or ERP.

As payment activity from across the organization passes through an aggregator, however, and as it can automatically pull and consolidate bank data throughout the day, cash positions can be updated immediately as changes occur. Current cash positions and visibility can be maintained with relative ease. In companies also leveraging a TMS or ERP, an aggregator can pass on the current information to these systems for reporting. If not, however, an aggregator's own reporting functionality can still display current cash positions and visibility, giving treasury departments access to the tools they need for their daily decisions and freeing up time for more strategic activities.

PAYMENTS INTENSITY AND COMPLEXITY

As formats change, and individual companies expand into different regions, each company develops its own unique payments landscape. Industry-specific factors further individuate companies' payments, leading to a diverse spectrum of intensity and complexity. Firms need to recognize their own position in this spectrum in order to understand their own drivers and level of need for aggregation. The more formats, the more countries and systems, and the higher the volume of payments—the more complex your payments are. Be sure to account for planned expansions and acquisitions as well. Are you acquiring companies with new platforms, for example, that you will need to integrate and manage? This will also drive up the complexity, increasing the need for an aggregator.

HEIGHTENED COMPLIANCE EXPECTATIONS

Compliance expectations are rising year-over-year without any clear end in sight. Generally, these regulations are motivated by fraudulent and criminal activity, and with these elements always on the rise, we have no expectation of the compliance burden lightening in the coming years.

Key Benefits of an Aggregator:

STP AND SYSTEM INTEGRATION: Aggregators help achieve STP (straight-through processing) by moving a great deal of complexity out of your underlying systems, facilitating the seamless flow of data through your ecosystem, and allowing your connections to remain stable even when new banks and formats must be added.

ENHANCED AUTOMATION: Aggregators extend the automation of treasury's workflow by digitally performing the otherwise grueling and complex data collection process. They also automate handoffs, seamlessly transferring this data to other systems without staff needing to intervene.

INFORMATION REPORTING: In addition to pulling the data together and distributing it to other systems, aggregators offer reporting functionality and issue alerts for anomalous data or failed transmissions. Their visibility and reporting tools also allow you to see your balances and other vital information even if your TMS is temporarily down.

ADDITIONAL FUNCTIONALITY: Some aggregators

offer modules with additional functionality, such as forecasting or bank account management. For these elements that fall outside the core tasks of an aggregator, the functionality offered will vary by vendor.

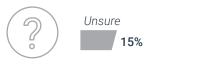
MANAGEMENT OF INFORMATION: With

an aggregator, you can buy your data once and route it through all your systems as needed. This solves a great number of efficiency problems that come with siloed data structures. Have you inadvertently made a payment to or received a payment from a sanctioned party in the past 12 months? (Select all that apply)









According to a survey run in 2020, 11% of organizations had transacted (either by sending or receiving a payment) with a sanctioned party within the past year, with another 15% responding "Unsure." Not only does each sanctions list continue to expand, but the lists themselves are multiplying. Notably, the UK will begin maintaining and enforcing its own set of

77%

Figure 2

sanctions through its issuing body, OFSI, separate from the EU's list. In addition, after many years of relying largely on their banks to screen payments for them, corporates are now seeing increased responsibility and larger fines directed their way. While the fines for banks can run even higher, entities on the corporate side have met with fines reaching over \$100,000,000 in recent years for transacting with a party or parties on OFAC's sanctions list.

As the complexity of maintaining compliance increases, along with the responsibility placed on corporations in this area, increased effort or use of tools such as addregators may be necessary to protect companies from these hefty fines. Meanwhile, payment platforms are responding to fraud leaking into their networks and systems from less-secure clients by instituting and tightening security requirements. These include regulations such as PCI-DSS for card payment merchants and SWIFT CSP for SWIFT participants. As for ACH, Nacha's regulatory activities also continue adding to the list of requirements companies must meet to remain in compliance, avoid fines, and use the payment platforms they need. Aggregators vastly decrease the headache of compliance. Most of them screen all payments made through the system against up-to-date sanctions lists, and if any payments require further attention, they are paused, and staff are notified. Their security features additionally aid in remaining compliant with payment platform regulations, and some aggregators offer additional compliance modules that can assist with bank account management and signers, lowering the difficulty of FBAR filings. The availability and exact functionality of these compliance modules will vary by vendor, but even the basic functionality can ease the burden significantly.

Benefits of Centralized Payments:

CENTRALIZED PAYMENTS AND VALIDATIONS: When company-wide payments are driven through a single, centralized payment process with controls, validation and confirmation of outbound activity built into the system, several important and painful tasks—fraud prevention, visibility, cash positioning, and cash forecasting—all become significantly easier. The aggregator's payment hub functionality makes this possible.

VALIDATION & CONFIRMATION: When payment processes are driven through a single system with excellent connectivity and automation, validation and confirmation data can be collected and distributed immediately to those who need to see it. Making sure this data is received and reaches the right people quickly can prove vital to securing your payment processes and catching fraudulent transactions early.

SIMPLIFIED DEFENSE & ENFORCED CONTROLS: Defending one payment process is hard enough. Companies with payment streams scattered throughout the organization can end up fighting a war on fraud on too many fronts to even keep track of, much less effectively defend. Funneling all these payment streams through a single system with built-in and enforced controls simplifies the defense back down and helps secure and manage the environment.

CENTRALIZED EXPERTISE: With a common platform and process, expertise in using the system can be shared and consistent throughout the organization. Each division or country within the company still follows the same pattern and sees the same screens, allowing for easier communication due to a shared knowledge base.

RATIONALIZATION & SCALING: It's a difficult balance, making sure you have only as many payment streams, banks, and accounts as you need, while also making sure you can add more as you grow. Centralizing payments through an aggregator, however, can both facilitate rationalization and make adding easier, as it helps data flow smoothly throughout your solution ecosystem and allows for greater control over payments.

RELATIONSHIP MANAGEMENT: Centralized payments support more effective relationship management. With the added control they have through an aggregator, treasury is able to reward key banks with operational business. Making these kinds of adjustments with decentralized payments can prove quite difficult.

UNDERSTAFFED TREASURY TEAMS

While treasury teams are growing consistently, their growth is slow. The demands placed upon them, however, are increasing much more rapidly, leading to overwhelmed teams and neglected tasks. Thirty-three percent of treasury professionals state that they do not have time to carry out all their duties.¹ Many of the tasks that go neglected are important, core treasury functions that are difficult to automate, such as cash forecasting. In an environment where there is so much for treasury staff members to do, it's becoming increasingly difficult to justify spending their time on manual or even semi-manual data collection tasks. Many treasury teams are turning to aggregators to solve this problem by automating data collection and freeing up staff for responsibilities that require human attention and provide more strategic support to the organization at large.

Description: Description Service Appropriate Appropriate Service Appropriate Ap

When we consider the challenges and factors driving aggregation, as discussed in the previous section, we see trends that are unlikely to dwindle for many years. In an increasingly technologically linked world, global expansion will continue to bring with it the need for connectivity to small banks, many of whom use proprietary formats and different currencies. More enriched formats will continue to emerge, fraud will continue to advance, and the compliance burden will grow heavier.

As these and other factors drive up complexity, treasury departments that are struggling to perform their duties via manual processes now will find it necessary to leverage more automation as time goes on. Meanwhile, recent survey data shows that complexity drives nearly all challenges to payment digitization. Notably, 22% of respondents considered the "Number of systems generating payments" as their organization's biggest payment digitization obstacle, with another 22% choosing "Addressing security and compliance requirements." "Supporting new payment types" ranked far lower, but it was still ranked first by 1 in 10 respondents.

Aggregators help reduce the impact of each of these areas of complexity. Data aggregation and payments processes are some of the simplest and most high yield to automate, solving an area of rapidly growing complexity. As such, treasury aggregators and including payment hubs, sit in a category that we expect to have above-line growth for at least seven years. Below, we'll consider a few areas of technological development that we expect to influence the growth, functionality, value, adoption rates, and use of treasury aggregators in the near future.



NETWORKS

As the power of a phone is found in whom you can call from it and what you can do with it, so the power of any network is 1) who's on it and 2) what services you can leverage through it. As such, the value of an aggregator is found in the payment networks and their services that you can leverage through it. Since their functionality is closely tied, the current state and future outlook for networks can be expected to deeply impact the future of treasury aggregation as well.

For payment networks, the services offered include ways of moving funds, security features, and tracking and visibility features. As networks continue to add and expand services, they create more value that can be leveraged via an aggregator.

"Who's on it" is defined by region or country for most networks. Even the more global networks—most notably SWIFT—are still somewhat geographically limited. SWIFT's reach, however, is steadily expanding, and countries without a bank on SWIFT are becoming more rare. With each country a network adds, its participants gain the ability to expand and scale their own operations more easily. CORPORATE: Select the best statement that fits your organization's biggest payments digitization obstacle:



1 TÌ

Other large networks whose participants andis not isservices bring significant value include EBICS,what twhich has good availability throughout parts ofupon tEurope, especially Germany. Japan currently usesdiffereZengin but is looking to implement a new platformTreasuto decrease costs. Indeed, many countries areand fleseeking to improve their payment options, with someand shcreating entirely new rails, while others are adjustingAggregationaround older rails and are redesigning platforms.contin



APPLICATION PROGRAMMING INTERFACES (APIs)

PSD2, a regulation requiring banks to offer secure access to client data for the client's third parties, drove rapid adoption of APIs in Europe, as they are widely considered the best mechanism for fulfilling PSD2's requirements. Even though the mandate applies only to Europe, banks and companies around the world have followed suit, implementing APIs to support an open banking environment.

As treasury departments and their organizations increasingly connect to their banks via API, it's important to understand that there are distinctions between types of APIs. The two primary types of APIs treasury should be aware of are Web Services and "RESTful" APIs. Web Services are broadly available but more indirect, as they involve one API pulling data from a system and transferring that data to another Web Services API, which in turn plugs it into the second system. RESTful APIs transfer the data more directly from one system to another. While this is preferable from a data management standpoint, RESTful APIs are less widely available than Web Services. While it is not necessary for treasury to understand precisely what these differences entail, it is incumbent upon them to recognize that there is a significant difference between these types of integration. Treasury should also understand that, as powerful and flexible a tool as an API is, it does have limitations and should not be seen as a connectivity panacea. Aggregators will remain relevant even as APIs continue to expand. Were a firm to exclusively rely on APIs for their connections, they would continue to pay for data multiple times. For managing data efficiently and effectively, a centralized platform such as an aggregator remains necessary.



FASTER, BETTER PAYMENTS

In 2020, 41% of corporate respondents to a survey on B2B payments indicated that they planned to increase their use of RTP (real-time payments), same-day ACH, or other faster payment methods in the following twelve months. With such significant demand, it makes sense that new payment initiatives are springing up both globally and regionally, each seeking to improve a different element or set of elements surrounding payments: Faster Payments Service in the UK, RTP and same-day ACH in the U.S., SWIFT gpi around the globe, and so on. Some are related to greater speed, while others improve visibility, provide additional information or more efficient processes for posting and tracking, and still others bring the potential for different cost levels.

Many address more than one of these improvements. While we often hear new initiatives lumped together under the heading of "faster payments," speed alone is not the point. Each of the different drivers involved is important to creating improved options. Overall, the drivers are quite similar to those at work in the consumer space causing the rapid and overwhelming adoption of payment platforms such as Zelle, accompanied by the abandonment of paper checks. The effort, speed, and visibility into the process are all drastically improved with Zelle, leading to an overall user experience that is efficient and convenient. Similarly, corporate users are looking for an overall improvement in their payments operations, and the most important factors will vary from one company to another.



BIG DATA AND BUSINESS INTELLIGENCE (BI)

As our organizations grow, we require more extensive analysis. Organizational expansion brings more complexity, issues emerge, and it becomes more and more necessary to capture data and analyze it. Meanwhile, data is doubling every two years. Companies have plenty to analyze, but finding, storing, and managing this data is becoming more and more difficult.

Often, the data analysis process begins to look like Sisyphus rolling the stone up the hill only to watch it roll back down, beginning again eternally. In our analysis, we have to answer one question before we know what to ask next, so we gather data, analyze it to find out the next question, and then repeat the laborious process of gathering data over and over again. Between technological advances such as aggregators and BI solutions, we now have the tools to break this cycle and set our organizations up for better analysis. Aggregators can port data directly into storage areas, such as data lakes and blobs, as well as your TMS, ERP, and BI systems. By automating the gathering, distributing, and storage processes for data, you can end the Sisyphus-style attempts at analysis and help your company efficiently learn from their data.



MOBILE PAYMENTS

While treasury and finance professionals are showing interest in mobile applications, banks are far more excited about them than their customers are. Thirty percent of bankers expect mobile applications to be more impactful to B2B payments in the next 2-3 years

Terms to Know: Storage Options

DIRECTORY: Location on corporate network, either physically present or in the cloud.

DATA WAREHOUSE: Organized storage, prepositioned and optimized for reporting.

DATA LAKE: Allows for storage of structured, semistructed, and unstructured data. Hierarchically stored and optimized for BI work and reporting.

BLOB: Binary Large OBject database – Non-hierarchical storage of structured, semi-structured, and unstructured data. Everything is stored in "containers."

Note: A blob is more like the junk drawer in the kitchen, as opposed to a data lake, which is more analogous to a file cabinet. It is easier to set up a blob than a data lake, but you will need a data lake if you're setting up massively large datasets. than APIs, AI/ML, RPA, or Blockchain/DLT, compared to only 18% ranking it first on the corporate side.² It's little wonder that banks have high hopes for their own products, which they have talked and thought about often. Why, however, is the corporate side less enthusiastic?

Most likely, companies do want mobile banking functionality, but not so much for B2B payments. While elements such as reporting, confirming payments, and notifications may be extremely helpful, there seems to be relatively little demand for functionality allowing users to initiate large corporate payments on mobile. This seems, for many, to add too little value for the security risks involved.



BLOCKCHAIN

Opinions surrounding the importance and usefulness of Blockchain in B2B payments vary widely. On the negative side, the percentage of corporations planning significant spend on Blockchain-based payment options decreased from 13% in 2019 to 8% in 2020. In addition, banks ranked it by far the least impactful in the next 2-3 years compared to innovations such as APIs, AI/ ML, and RPA (only 1% ranked it most impactful).

On the other hand, however, 21% of banks are interested in or currently offer Blockchain-based payment options (Ripple, Chain, etc.) to their customers. It's clear that there is some interest in Blockchain, but amidst the mixed messages, it is difficult to anticipate how extensively Blockchain might influence the future of B2B payments.³

CORPORATE: Which of the following technologies are you using / interested in using in treasury?

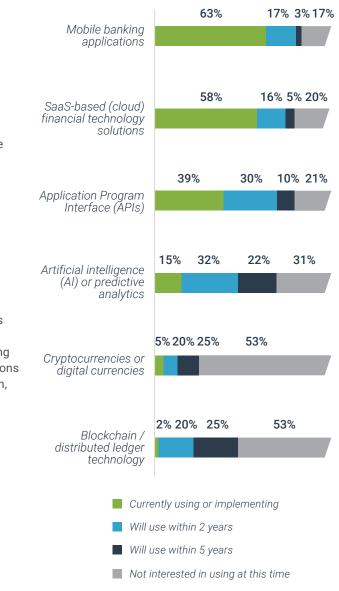


Figure 4

Treasury Aggregation System Use: Leading Practices

No matter how much you need a treasury aggregator, we recognize that the process of purchasing and implementing one can be difficult, overwhelming and full of pitfalls. To help you get started on developing your plans and anticipating what will be needed, consider the following leading practices for selecting and setting up an aggregator.

SELECTION PROJECT

When treasury identifies the need for new or upgraded technology, even the first step constitutes a significant roadblock. Competition for funding can be fierce, and it's a competition that must be won before your project can move forward.

Understand your target state or operating model.

It is difficult to hit your mark when you don't know what you're aiming for. Talk to other key stakeholders, assess your organizational and departmental needs, and develop a target operating model that can inform your technological choices.

Connectivity options and cost structures in use by each aggregator can vary.

While all aggregators collect data and possess payment hub functionality, be aware that the exact

functionality, connectivity options, cost structures, and other elements will differ from product to product. Identify the defining features of the vendors and work to match them up with your identified needs.

Perform due diligence on each potential vendor's financial strength and industry position.

A good solution must be backed by a vendor who can support, sustain and invest in its continued development long-term. Put in the work to make sure your vendor will stand the test of time.

IMPLEMENTATION ROADMAP

No two implementations are the same.

Each roadmap should be customized to your specific requirements. Realistically look at your own circumstances and parameters and plan around them.

Find the help you need.

There are multiple options to consider when deciding on support for your implementation. What will almost never work well is attempting to run the implementation off the side of your desk, without any substantial support.

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Make sure you understand your options, verify what each resource can provide, and get the help you need.

VENDOR SUPPORT

Support Options



Many vendors provide substantial support throughout the implementation, and for a number of organizations, this support proves sufficient.

IT

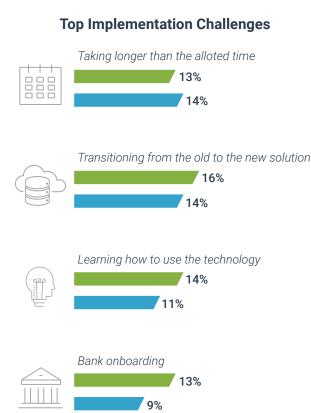


Others may be in a position to rely on their IT department or a combination of IT and vendor support, but this should be approached with careful planning and discussion ahead of time to ensure that IT will have the necessary amount of bandwidth during each phase of implementation. For most companies, an implementation of this type will require more support than IT alone can spare, but a combination of IT and vendor support may be worth investigating.

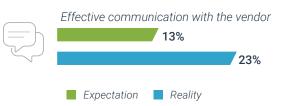


THIRD-PARTY CONSULTANTS

Some consulting firms provide implementation support. For many organizations, a third party of this kind that specializes and has extensive experience in assisting with implementations can help ensure that the project is completed on time with as few delays and unnecessary costs as possible.







Provide banded timeframes for completing steps instead of using hard cutoffs.

Treasury technology implementations frequently take longer than expected. While it can be difficult, making a plan you can conform to and sticking with it is vital for keeping down costs, supporting ongoing operations, and building a track record of success that will help you gain funding and cooperation in future projects. Planning your implementation in phases and using banded timeframes can vastly improve your chances of a timely delivery, as this approach allows you to meet your target even when certain portions of the implementation take longer than you would have expected.

EMPLOYEE TRAINING

Train in close proximity to use.

Staff training is best performed during the implementation stage, shortly before going into production. If you train too early, employees may have forgotten much of what they learned by the time they actually use the solution. If you train too late, bad habits and mistakes may have already accumulated.

INTERNAL SYSTEMS INTEGRATION

Adequately test compatibility with other systems during implementation.

Between their data dissemination and payment hub functionalities, aggregators must usually integrate with multiple other systems such as TMS, ERP, payroll systems, and etc. These connections are prone to meet with a few issues at first, such as from unsupported formats or messages lost in translation. It will be much easier to deal with these issues if they are discovered during the implementation, so be sure to test your integration extensively.

Communicate with IT.

Keeping IT appraised of developments in the implementation can help them ensure the new solution is properly integrated into the existing ecosystem.

BANK ONBOARDING

Bank onboarding can take excessive time due to compliance and documentation requirements for banks.

This step often takes longer than expected. Problems and delays range from difficulty finding the right contact at each bank to the headaches of KYC. Be prepared and do what you can to identify who will need what ahead of time.

Allow for flexibility during the bank onboarding stage.

To avoid using more time than you had budgeted for this stage, consider building extra margin into this part of the plan to account for unexpected delays.



Fides: Analyst Coverage

The analyst coverage in this section will provide a more in-depth look at Fides, a treasury aggregation provider. Upon analyzing the following content, readers interested in learning more about the services offered are encouraged to contact Fides or Strategic Treasurer to learn more.

While Fides contributed their own original content, Strategic Treasurer did maintain authority over the final, published version of the report to ensure our audience received an accurate, unbiased, thorough, and informative analysis of modern treasury aggregation solutions.

This section includes a company overview and snapshot for at-a-glance comparison, along with a detailed summary of their relevant solution. Additional coverage related to customer experience, servicing, event attendance, product release notes, and more can be found (updated quarterly) on strategictreasurer.com/reports.



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Founded: 1910



CEO: Andreas Lutz



Headquartered: Zürich, Switzerland



Ownership: Credit Suisse Group

All content was produced by Fides and edited by Strategic Treasurer.

COMPANY OVERVIEW

Fides enables corporates to connect to any bank, in any region, through any channel. Fides multibank connectivity and transaction communications solutions deliver critical account statement, payment workflow and reporting capabilities for treasury and finance teams. With Fides, clients can streamline their multibanking processes to achieve greater efficiency, intelligence and accuracy in their communications while securely executing and managing transactions regardless of their banking portfolio or geographic location.

Founded in 1910, Fides has been committed to helping corporations optimally connect and interact with their banks for more than a century. The company has been focused on multibanking and connectivity since 1985, when its bank account balance and transaction reporting service, Fides ARS (Account Reporting Service) was launched. The Fides EFT (Electronic File Transfer) payments solution was released a few years later. Since that time, Fides has continued to frequently improve on the functionality, feature sets and UX of its products, and to develop new services and offerings to meet evolving market needs.

Fides enables banking communications via any channel, including SWIFT, EBICS, H2H, APIs, and more. In addition to being a certified SWIFT Service Bureau, supporting SWIFT for Corporates onboarding and hosting of corporate BICs, Fides also offers a proprietary multi-network, dual-BIC hybrid service model to further streamline connectivity for corporates. Similarly, Fides supports hundreds of messaging file formats, including all SWIFT MT/MX formats, ISO20022, ACH, EDI, AFB, DTA, BAI and ABA among many others. Fides also provides conversion, validation, sanction screening and security services.

Headquartered in Zürich, Switzerland, Fides is an independently operated subsidiary of Credit Suisse. Today, Fides helps more than 3,500 clients communicate with over 13,000 banks and payment providers across 200 countries and territories. Clients can access Fides solutions through the company's secure, easy-to-use Multibanking Suite SaaS solution, or easily integrate with any third-party ERP, TMS and other backend systems. Fides works continually to support the newest connectivity and fraud filtering technologies, complies with all regulatory requirements and governance protocols, and adheres to the highest security standards.

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SOLUTIONS & SERVICES

Fides ARS and Fides EFT

Available for installation, as managed services, or via the Fides Multibanking Suite SaaS solution. Can be seamlessly integrated with any TMS or ERP system.

- Account Reporting
- Bank Messaging
- SWIFT Service Bureau
- Bank Connectivity
- File Transfer
- Payments & Cash Management
- Data Validation & Sanction Screening

MARKET POSITION



Fides provides a global hybrid connectivity model. This includes direct connections, API connections, connections through various networks (e.g., SWIFT) and connections through its parent company's network



Fides is a wholly-owned subsidiary of global banking giant Credit Suisse.



Fides has more than 3,500 active customers in locations around the world.

TOP STATISTICS



Fides' payment platform processes over \$5.5 trillion every year.



More than 210,000 SWIFT messages, including batch files, are processed through Fides' system every day.



Client payment initiations have increased by 45% year over year.



Active Fides clients span 200 countries and territories and connect to more than 13,000 banks worldwide.

Global Growth

ON DECK WHAT'S

As of September, Fides had started the implementations of 134 client projects in 2020, reflecting an 18 percent increase in sales compared to the previous year.

Multibanking Excellence

Fides was named Best Performing Multi-Banking Solutions Provider for 2020 by The European.



FIDES CLIENTS INCLUDE









Pajoneer GREIF Packaging success together easyJet CLARIANT

PRODUCT OVERVIEW

Fides Multibanking Suite

Centralize your bank accounts and make payments to anywhere in the world at the touch of a button, through an intuitive SaaS solution. Fides centralizes and simplifies global multibank connectivity and transaction communications. The modular Fides Multibanking Suite gives you complete visibility into and control over your banking connections and transactions, with secure access from any location. Administration and approvals are controlled through a single tool, saving time and effort while providing visibility into all aspects of workflows. The Fides Multibanking Suite includes Fides ARS and Fides EFT, and will in future also provide access to new features like cash forecasting and an ecosystem of partner solutions for an easy one-stop-shop.

Fides Account Reporting System (ARS)

Fides ARS was designed to allow clients guick and easy access to viewing overall liquidity and account statements from their banks at any time. Fides ARS improves upon the legacy process of manually collecting account data from a client's banks by consolidating all account information, including balances, transactions, and booking texts, and providing it centrally via a set of user-friendly dashboards. The process involves converting all messages into a standardized format, verifying the account statements, allowing the customer to choose a preferred format (MT940/42, BAI, AFB120, camt.052/053/054, etc.), and providing options for downloading data, such as in Excel or as a PDF. Fides ARS does not require any special infrastructure or installation. Updates and upgrades to the solution are performed regularly. Fides ARS

Cash Visibility Payments and Messaging Ecosystem Image: Cash Visibility Image: Cosystem Image: Cosystem

Fides Multibanking Hybrid Model

can be integrated with a client's TMS/ERP system or managed through the Fides Multibanking Suite.

Key Features & Benefits:

- **Global cash visibility:** Reap the benefits of worldwide transaction transparency. Using a single source for all bank communications makes it easy to gain visibility into global cash positions and increase forecast accuracy.
- **Reduced operational risk:** Transaction data is loaded automatically, eliminating the need for treasury professionals to enter data manually.
- Flexible authorization: Map users and groups to accounts, account groups, banks, countries, subsidiaries and more to further automate and streamline processes.
- Highly customizable reporting: Extensive search, filter, sorting, display and export functionality gives you the data you need in the format you need it—at the touch of a button.
- Smooth account control: Thorough data validation capabilities and services ensure that opening and closing bank balances, statement formats and any other transaction data points are correct, consistent, and ready for your reports and daily processes.

Fides Electronic File Transfer (EFT)

Fides EFT simplifies the global transfer of individual and bulk payments to banks and consolidates the financial messaging process so that any and all messages can be sent and received by corporates through one platform. Although the majority of clients use Fides EFT for payment purposes, it can be utilized for the full range of MT and MX (ISO 20022 XML) formatted messages, including those used for trade finance or FX trades. Fides EFT serves as a central location to manage and execute payments and provides an efficient method of monitoring all payments. Automated access is

2020 TECHNOLOGY ANALYST REPORT

Fides Hybrid Model

Corporate

- Cash Management
- Cash Forecasting
- Bank Polling
- Payment Factory
- Local Payments
- Global Payments
- Check
- Trade Finance

- Fides
 Multi Connectivity
 Format Conversion
 Reconciliation
 Validation & Repair
- Enrichment
- Fraud FilteringSanction Filtering
- Cyber Security

available through a client's TMS/ERP, but a client can opt to manually enter and approve payments through Fides' SaaS solution. Fides EFT is able to process and send payment orders globally to a multitude of different banks and uses enhanced data validation and enrichment processes to ensure client information is delivered securely and quickly. Updates and upgrades to the solution are performed regularly.

Key Features & Benefits:

- Central workflow control: Validate, execute and monitor all transactions through a single workflow, eliminating the need for multiple processes.
- Flexible authorization: Map users and groups to banks, validate payments, set up sign-off rules, four-eyes principles and more to further automate and streamline processes.

 Order creation options: Create orders via ad hoc entry, templates, or file upload to meet your business and HR needs.

Financial BIC

Corporate BIC

API

H₂H

EBICS

Bank

13.000+ branches

across the SWIFT

network of banks

2.000+ branches

Direct connections

across SWIFT

SCORE

- Fast fraud detection: As all payments are captured and managed with the same solution, fraudulent activity can be detected quickly. Leverage built-in compliance management features, rule-based checks, and profiling founded on payment history and analytics.
- Sanction screening: Our modern, bank-proven sanction filtering adheres to local and international regulations to help you manage and mitigate risk.

Fides Multibanking Hybrid Model

The unique Fides Hybrid Model is a multi-network, dual BIC service option that allows corporate treasury teams to optimize and expand their banking reach effectively and help with banks' SCORE readiness. Fides' hybrid approach ensures that clients have access to a solution that is tailored to their individual connectivity needs. Based on requirements and communication channels, Fides will recommend, establish and maintain the most effective multibanking connectivity configuration. These connections can be made via SWIFT, EBICS, Host-to-Host (H2H), APIs, or any combination thereof, using Fides' proprietary Hybrid Model. This ensures that clients have a multibanking model that works the way they need to conduct business. Additionally, the Fides Hybrid Model improves accuracy and consistency of payment and transaction messages by validating and correcting all files prior to release, ensuring that files are compliant and bank-ready.

Clients Use the Fides Hybrid Model to:

- Validate and comply with rigorous messaging requirements
- Eliminate gaps in SCORE readiness
- Ensure global banking coverage
- Increase speed-to-market
- Reduce costs of maintaining individual connections and SWIFT costs

The service is completely managed by Fides.

TO LEARN MORE ABOUT FIDES

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The analyst reports are released Q4 annually. If this is an outdated version, visit StrategicTreasurer.com to download a free copy of the current report.

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

Provides valuable insights related to the overall payments complexity and challenges being experienced by practitioners. It focuses on unique solutions and tactics employed by organizations to optimize payment processes and maximize efficiency.



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 those of their peers in the corporate environment.



GLOBAL PAYMENTS

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

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.

INSURANCE TREASURY

Identifies the unique financial drivers, challenges, and areas of focus for insurance companies. Results are compared against data from the broader corporate environment to better understand how the treasury and finance functions within insurance compare to those of other industries.



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.



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.



TREASURY COMPLIANCE

Captures the macro and micro elements of the compliance landscape that are impacting treasury, it identifies how new regulatory developments are being accounted for, and gains insight into the various technologies and strategies leveraged by organizations for managing compliance on an ongoing basis.