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CORPORATE-TO-BANK INTEGRATION: THE NEED FOR A HYBRID APPROACH

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This report was commissioned by OpenText at whose request Celent developed this research. The analysis, conclusions, and opinions are Celent's alone, and OpenText had no editorial control over the report contents.

OLIVER WYMAN

CONTENTS

EXECUTIVE SUMMARY

KEY RESEARCH QUESTIONS

1 *Why are unattended corporate-to-bank integration channels a critical component of the corporate user experience?*

2 *What are the trends driving investment in corporate-to-bank integration channels?*

3 *How can banks offer more connected, collaborative, and intelligent integration channels?*

Corporate-to-bank channel connectivity is a critical enabler for businesses of all sizes as they expand globally and grow the number of banks and accounts that are needed to conduct business. Corporate channels act as the digital backbone and flexible integration layer between banks and corporates — delivering operational improvements, improving visibility, and enabling new services.

To cope with the increasingly hybrid world of corporate-to-bank integration, banks must offer a full range of attended and unattended digital channels, tailored to a corporate's specific business processes. It is also vital that banks deliver an omnichannel digital experience for business clients — one that meets each client's unique business and technology requirements. For banks looking to attract larger clients, clients working with 50 or more banks and managing 150 or more bank accounts, a robust unattended channel strategy is critical.

Multinational and large corporate clients expect host-to-host file integration and SWIFT network connectivity. However, many banks struggle with implementation challenges such as ease of integration, file formatting issues, testing procedures, and security protocols and procedures. The prevalence of multiple messaging standards makes file translation a critical component of corporate-to-bank integration, enabling straight-through processing into corporate TMS and ERP systems.

Both corporate treasury professionals and transaction bankers are evaluating the business benefits of a shift from traditional batch-based processes to real-time information and payment flows. A recent survey shows that larger, more sophisticated companies especially value gains from real-time processes, particularly the ability to track payments in real time.

To ensure a robust omnichannel approach for corporate clients, banks must increase visibility between attended and unattended channels. APIs hold promise to act as an intermediary, brokering real-time events between file-based information flows and digital online portals.

With unresolved implementation challenges, disparate messaging standards, growth in file-based volumes and file sizes, shift to real-time payments and information flows, and lack of a corporate omnichannel channel approach, banks may need to re-evaluate their technical architecture to ensure an efficient, secure, reliable, and compliant corporate-to-bank integration framework that can scale to meet future requirements.

Oliver Wyman recommends that financial services firms adopt a modular IT architecture which can drive down the cost of technology while making it more adaptive. Celent

agrees. Key attributes of a good target state modular architecture include API-based connectivity, service-based architecture, cloud-hosted platforms, configurable business rules, and robust data architecture. Applying a modular approach to solving the challenges presented by the increasingly hybrid world of corporate-to-bank integration favors an outsourced, managed services approach. Managed services can reduce costs, increase scalability, limit upfront investment, standardize processes, ensure reliability, and enable overlay services.

Employing managed services allows banks to take an incremental approach to addressing integration challenges by starting with smaller pieces, such as onboarding one or two large corporates requiring file transformation and translation, and then growing scope of adoption across the larger customer base. An incremental approach is also easier in terms of financial and integration resources requirements compared to lifting and shifting large pieces of operations.

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INTRODUCTION

Celent believes (and others agree) that it's vital that banks deliver an omnichannel digital customer experience, but the term means different things to different people. Based on our own research, we believe that omnichannel is about delivering a customized but consistent financial institution brand experience to customers across all channels and points of interaction.

An omnichannel experience is even more critical when delivering services to corporate clients. Each client has a unique set of business and technology requirements based on their corporate treasury organizational structure, geographic footprint, and treasury technology sophistication. A consistent financial institution brand experience is important to corporate clients, but the experience needs to be tailored to each client segment's unique needs. For the largest, most complex organizations, an even more bespoke and customized experience is critical.

Corporate-to-bank channel connectivity is a critical enabler for businesses of all sizes as they expand globally and expand the number of banks and accounts that are needed to conduct business. Corporate channels act as the digital backbone for corporate clients to retrieve transaction information, initiate payments, collect receivables, perform reconciliations, and conduct other types of financial transactions.

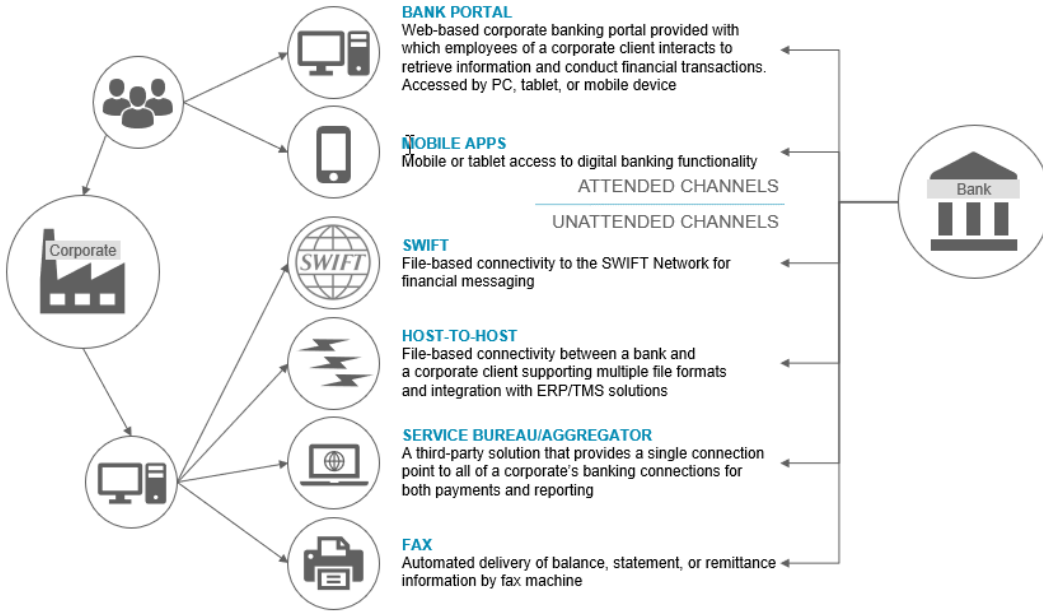
As discussed in *Strategies for Enhancing Corporate Client Experience: The Future of Attended Channels* (January 2017), there is a key distinction between two types of corporate digital channels, **attended** versus **unattended**.

- **Attended digital channels** with which employees of a corporate client interact to retrieve information and conduct financial transactions (e.g., online portal, mobile banking app, or tablet banking app).

Vs.

- **Unattended channels** which involve the integration between bank and corporate systems in an automated fashion, without manual intervention (e.g., SWIFT, host to host file, treasury workstation, service bureau, third party integrator, or automated fax services).

Figure 1: Distinction Between Attended and Unattended Corporate-to-Bank Channels



Source: Celent analysis

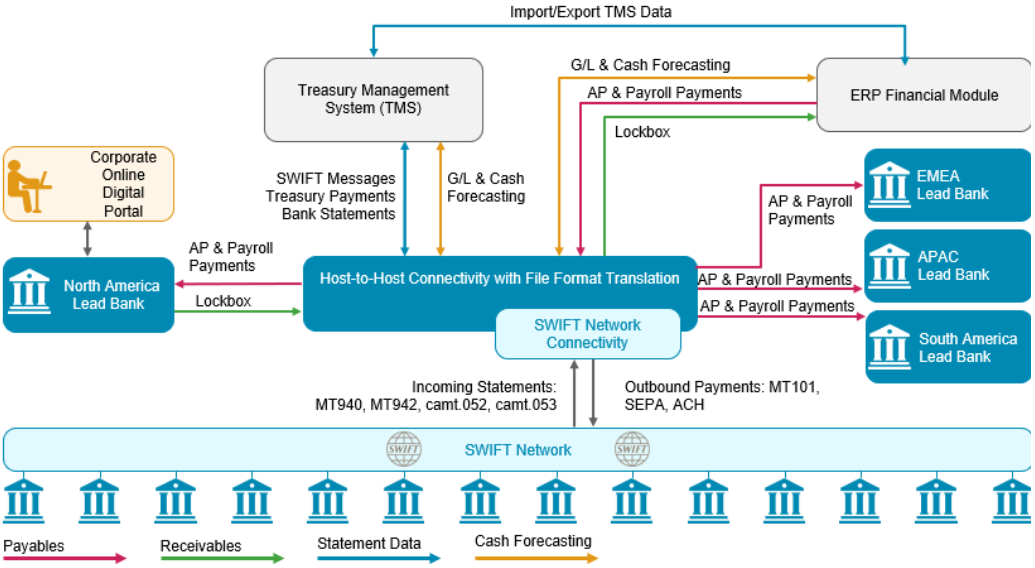
Key Research Question 1

Why are unattended corporate-to-bank integration channels a critical component of the corporate user experience?

Unattended integration solutions are a critical part of the channel mix because they can securely, reliably, and efficiently handle complex information flows across multiple banks and financial counterparties.

Most corporate treasury departments use more than one channel to connect with their banks. For example, as shown in Figure 2, a large corporate customer may choose direct file channel connectivity with its primary cash management banks in one or more geographies; SWIFT network connectivity to reach several international banks for vendor and payroll payments; and a bank's online digital portal for one-off, real-time wire payments.

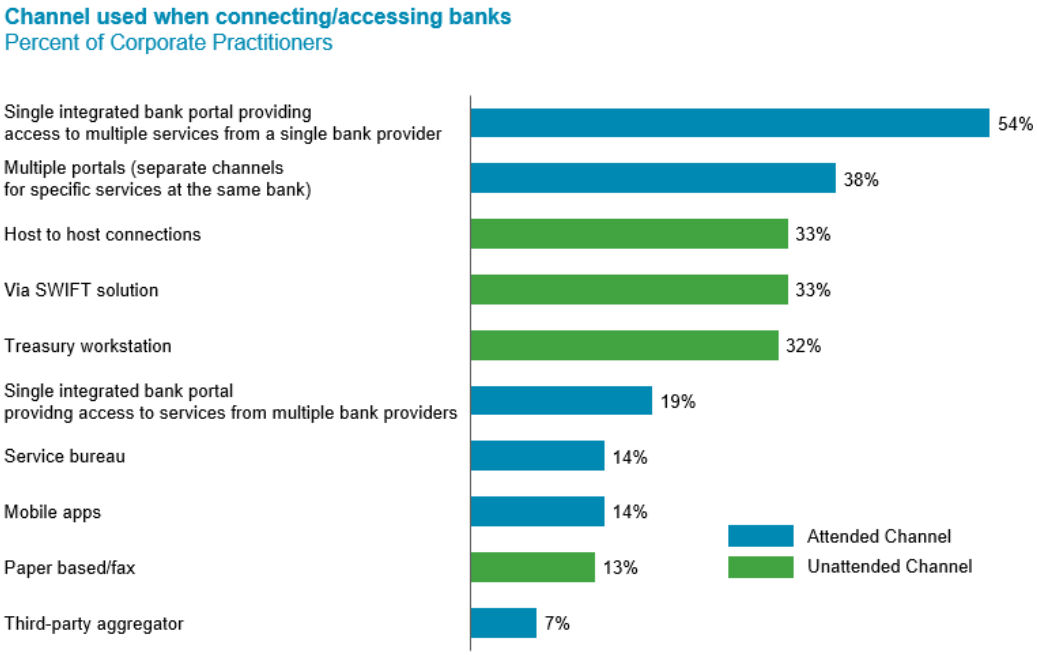
Figure 2: The Treasury Technology Landscape Is Increasingly Complex



Source: Celent analysis

In fact, when you look at the survey of channel usage in Figure 3, the percentage usage figures add up to much more than 100%, because of the tendency for corporate clients to use different channels for different treasury needs.

Figure 3: Unattended Channels Used by One-Third of Corporate Practitioners Surveyed

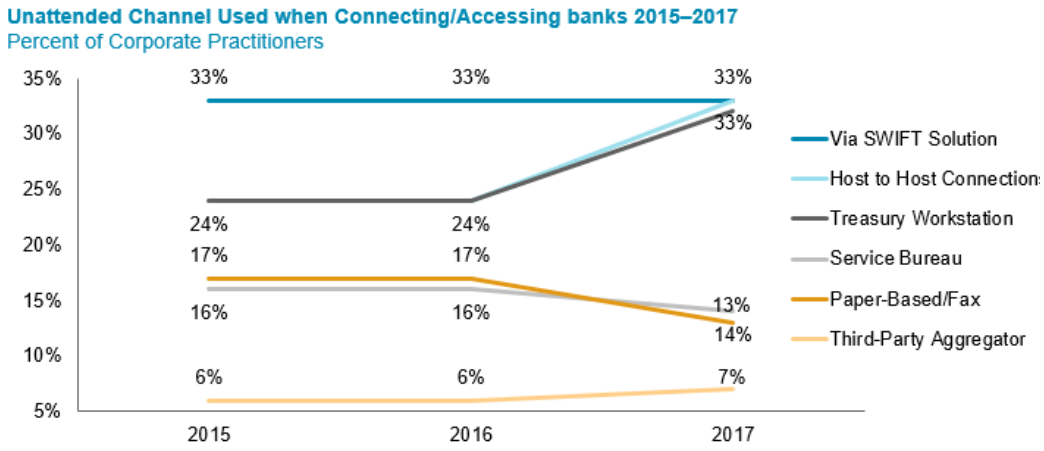


Source: CGI 2017 Transaction Banking Survey, published by GTNews & CGI

The CGI survey shows that a third of treasurers are using three different types of unattended solutions to connect and access bank services: SWIFT solutions, host-to-host connections, and treasury workstations. The proportion of treasurers using SWIFT solutions (which offer corporates the ability to exchange financial messages with

whichever banks they please) hasn't moved since last year's CGI survey, but the proportion of those using the latter two has increased, from 24% to 33% for host-to-host, and from 24% to 32% for treasury workstation, with 33% growth from 2016 to 2017.

Figure 4: Host-to-Host Connections and Treasury Workstation Channel Usage up 33% in One Year

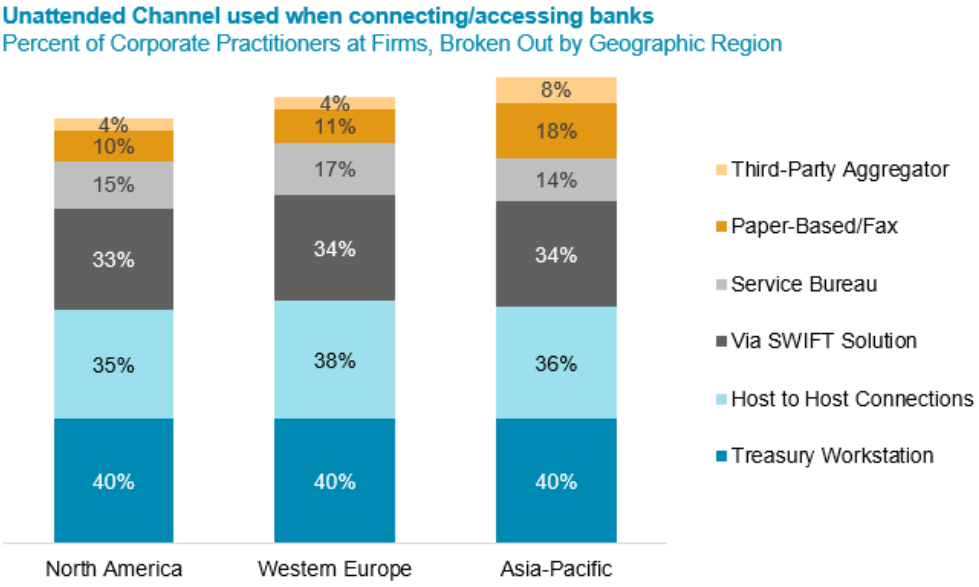


Source: CGI 2017 Transaction Banking Survey, published by GTNews & CGI

As shown in Figure 4, adoption of host to host connections and treasury workstation are moving in lockstep. This makes sense, because a primary benefit of treasury workstations and management systems is their ability to aggregate data across internal treasury systems and external banking partners. Without host-to-host, file based integration, automated data aggregation wouldn't be possible.

Somewhat surprisingly, the mix of unattended channels used by corporates does not vary much by geography. Host-to-host usage is greatest in Western Europe, and paper /fax are still used by 18% of corporates surveyed in Asia-Pacific, as shown in Figure 5.

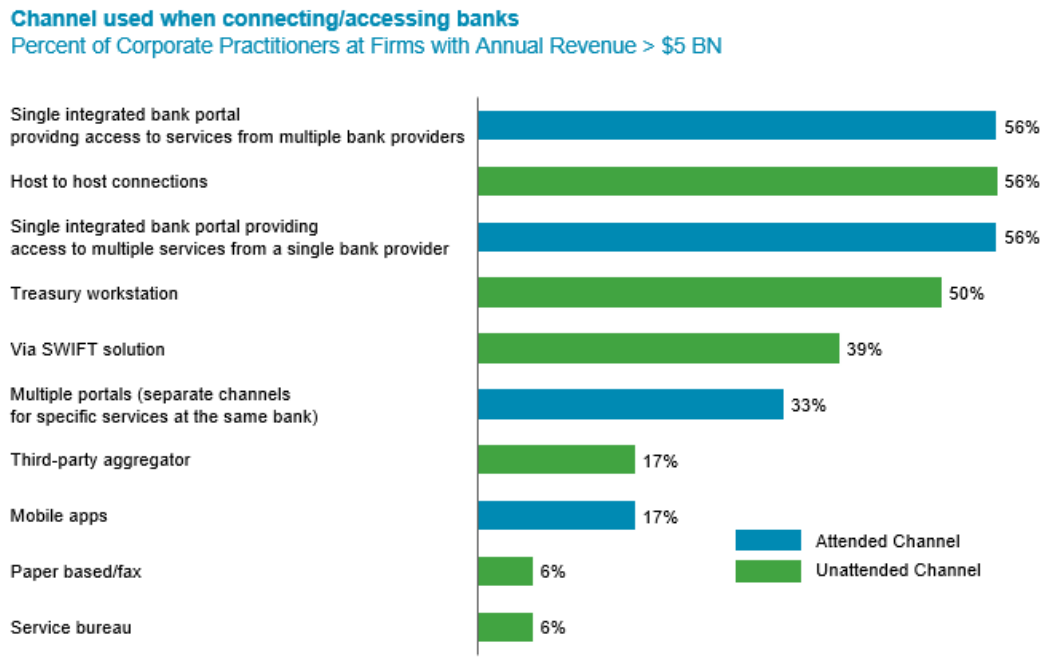
Figure 5: Unattended Channel Usage Consistent Across Geographic Regions



Source: CGI 2017 Transaction Banking Survey, published by GTNews & CGI

For larger corporate customers, those with annual revenue over US$5 billion, unattended channel usage jumps dramatically, tying with the use of bank portals (Figure 6). These customers work with 50 or more banks on average, and most manage more than 150 bank accounts. Unattended channels help corporate treasurers to aggregate cash positions across their banks and transaction accounts on a daily basis, as well as to initiate payments to vendors and employees across their geographic footprints.

Figure 6: Host-to-Host Connections Used by More than One-Half of Large Corporates



Source: CGI 2017 Transaction Banking Survey, published by GTNews & CGI

Many larger corporates rarely (or never) log into a bank's online corporate portal. This presents a dilemma for bank product managers. Should they continue to invest heavily in the online channel? Or should they shift investment to specialty working capital solutions and advisory services to strengthen customer engagement? Or should they consider investing in their unattended channels, (finally) addressing longstanding integration challenges? Let's take a deeper look at those integration challenges faced by corporate customers (and their banks).

CORPORATE-TO-BANK INTEGRATION CHALLENGES

Improvements to technical aspects of onboarding have the potential to shrink the overall timeline substantially, allowing corporate clients to use banking solutions faster and allowing banks to accelerate the revenue stream. In a traditional onboarding process, the corporate client's IT staff (or a third party on behalf of the client) receives the bank specifications, validates whether existing client systems need to be modified to generate or receive the proper file format, and then begins an iterative testing process that often involves the exchange of many files or messages before the two parties begin to test the actual transport mechanism that will be used for moving the data in production. For corporate treasury executives and bank line-of-business personnel, this process can be frustrating because the lack of high-quality documentation often requires numerous testing iterations before a client is ready to go live with its new banking service.

Key Research Question 2

What are the challenges driving investment in corporate-to-bank integration channels?

Challenges with onboarding, messaging standards, volumes and file sizes, real-time information and payments, and customer experience are driving investment in integration channels.

UNRESOLVED IMPLEMENTATION CHALLENGES

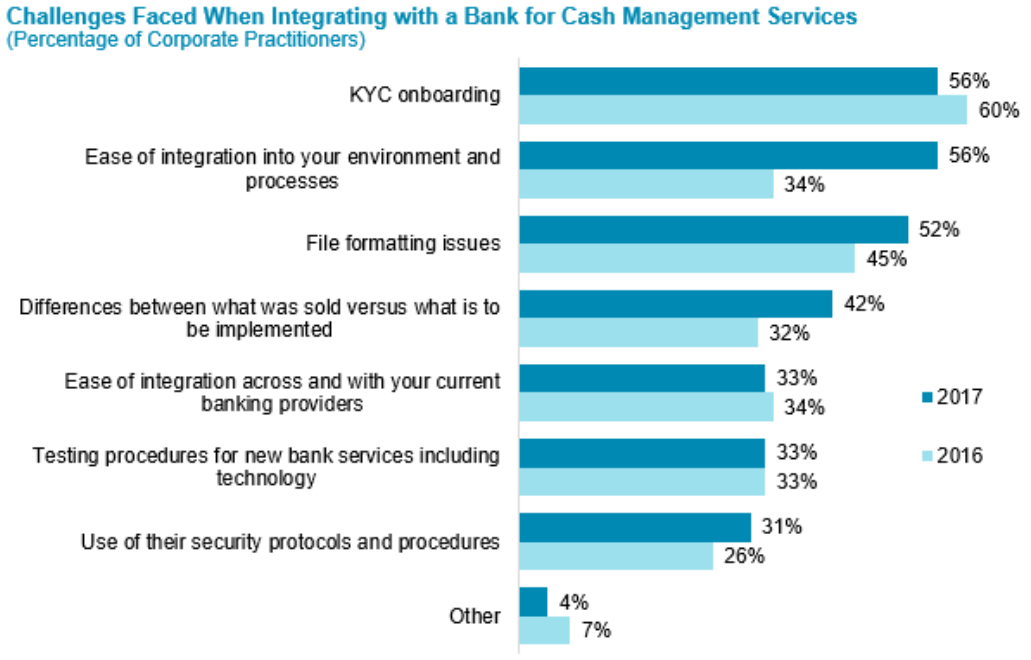
Discussed in *Onboarding in Corporate Transaction Banking: Prioritizing Investments for Reducing Friction* (August 2016), one of the least satisfactory aspects of onboarding today is the length and unpredictability of elapsed time between the start of the process and when the client can actually use the banking solution. For unattended channels, the exchange of technical specifications and the testing process for connectivity between client systems and bank systems often take months, even when the client is using a well-established, published standard. Although some vendors that support banks' file channel offer some onboarding tools to facilitate the process, these tools tend to be stand-alone — not integrated with the other aspects of onboarding such as KYC due diligence, credit analysis, account opening, and product fulfillment.

With new relationships, it is especially frustrating to corporate clients, who often conduct a thorough request for proposal (RFP) process to identify the bank that can best meet their needs, and then find themselves in a holding pattern for weeks or months while the bank goes through the onboarding process. Depending on the mix of bank services and the geographic jurisdictions in which the client operations, onboarding can take between 4 and 14 weeks.

The availability of public information for validating a corporate hierarchy is limited in many markets, requiring more labor-intensive procedures for KYC and other due diligence operations in some countries. Similarly, the legal acceptance of digital signatures is not universal, requiring that paper documentation with original signatures (and in some countries in Asia, company chops) be exchanged between the bank and its client. The onboarding experience for an individual corporate client operating in multiple countries can be radically different, even when using the same banking services with a single

financial institution. Figure 7 depicts the percentage of corporate practitioners facing challenges when connecting to banks.

Figure 7: Ease of Integration a Top Challenge When Connecting to Banks



Source: CGI 2017 Transaction Banking Survey, published by GTNews & CGI

When corporate-to-bank integration is required as part of the service, it is not unusual for the testing and technical implementation to extend the onboarding timeline. For the most complicated transaction banking services, onboarding includes the technical implementation and testing of interfaces between client applications (e.g., treasury management systems [TMS] or enterprise resource planning [ERP] and bank applications). As shown in Figure 7, challenges include ease of integration, file formatting issues, testing procedures, and security protocols and procedures.

PLETHORA OF MESSAGING STANDARDS

> *"The nice thing about standards is that there are so many of them to choose from." — Andrew S. Tanenbaum*[1]

Celent has long hailed the ISO 20022 standard and its potential to harmonize financial messaging across payments, trade services, securities, cards, and foreign exchange. In the 2015 report, *ISO20022 — The Payments Revolution* (April 2015), Celent wrote that ISO 20022 was redefining the payments landscape. For corporate-to-bank integration, we predicted that, given the overall move to standardization, there will tend to be fewer technical issues, such as the need to convert formats, coupled with the fact that fewer formats and standards will need to be supported over time. This has significant benefits in terms of time to market and costs associated with testing.

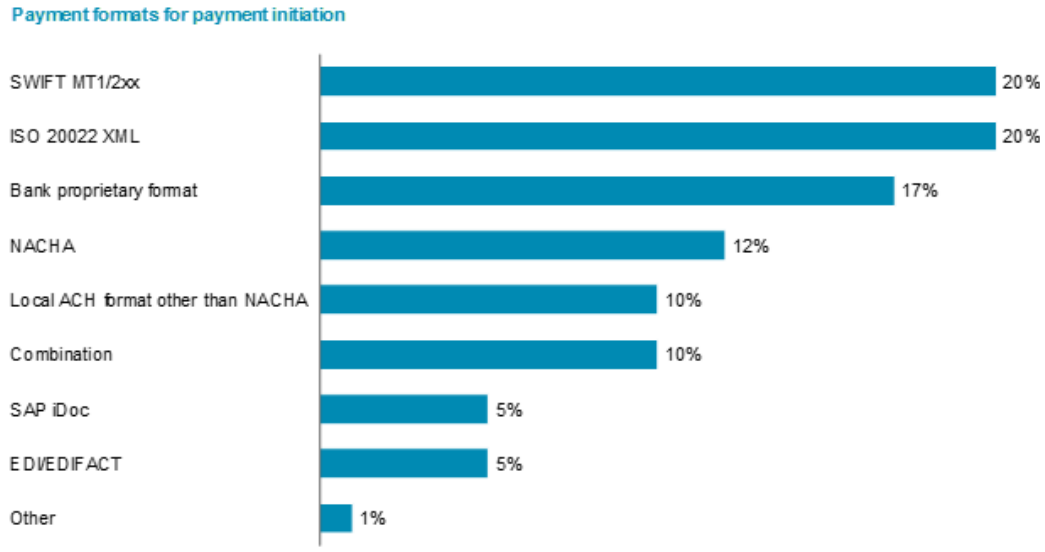
ISO 20022's most often quoted benefit for corporates is the ability to carry extended remittance data for payment reconciliation. In theory, an ISO 20022 message can carry extensive, if not unlimited, remittance data which allows a corporate to more easily automate the application and reconciliation of payments. Yet the reality is that unless

[1]The Quotations Page, www.quotationspage.com.

every process in the payment chain can handle the ISO 20022 format and extended information, the payment message will be truncated, losing valuable remittance data.

ISO 20022 adoption continues apace, especially as it has become the de factor standard for the wide range of real-time payments systems being rolled out globally, with 40 systems now live, and development of several more underway. But looking at usage statistics paints a different picture. For example, FIS surveyed treasury, finance, and payments professionals about their use of various payment formats for payment initiation, with most respondents equally split between North America and Europe. ISO 20022 and the older SWIFT MT format tied in usage, with bank proprietary formats close behind (Figure 8).

Figure 8: A Mix of Payment Formats Still in Use



Source: 2017 Corporate Payments and Bank Connectivity Report, FIS

The use of bank proprietary formats or other legacy formats are common within organizations with decentralized business structures. Corporate clients often have a preferred file format (or two), as does the bank. This situation leads to the requirement for the corporate, file channel provider, or the bank to translate incoming and outgoing files. Given the large number of financial institutions and clients still relying on SWIFT MT or other formats for information exchange, file translation remains a critical component of corporate-to-bank integration.

Growing Volumes and File Sizes

As payments and other financial messages shift from older formats to XML, file sizes increase, simply due to the differences in file layouts. Figure 9 compares the older MT 101-Request for Transfer file layout against the newer, XML-based PAIN.001-Customer Credit Transfer file layout.

Figure 9: Comparing MT 101 to pain 001

MT 101 - Request for Transfer

Status	Tag	Field Name	Content/ Options	No.
Mandatory Sequence A General Information				
M	20	**Sender's Reference**	16x	1
O	21R	**Customer Specified Reference**	16x	2
M	28D	**Message Index/Total**	5n/5n	3
O	50a	**Instructing Party**	C or L	4
O	50a	**Ordering Customer**	F, G, or H	5
O	52a	**Account Servicing**	A or C	6
O	51A	**Sending Institution**	[/1!a][/34x] 4!a2!a2!c[3!c]	7
M	30	**Requested Execution Date**	6!n	8
O	25	**Authorisation**	35x	9
End of Sequence A General Information				
-----> Mandatory Repetitive Sequence B Transaction Details				
M	21	**Transaction Reference**	16x	10
O	21F	**F/X Deal Reference**	16x	11
----->				
O	23E	**Instruction Code**	4!c[/30x]	12
-----|				
M	32B	**Currency/Transaction Amount**	3!a15d	13
O	50a	**Instructing Party**	C or L	14
O	50a	**Ordering Customer**	F, G, or H	15
O	52a	**Account Servicing**	A or C	16
O	56a	**Intermediary**	A, C, or D	17
O	57a	**Account With Institution**	A, C, or D	18
M	59a	**Beneficiary**	No letter option, A, or F	19
O	70	**Remittance Information**	4*35x	20
O	77B	**Regulatory Reporting**	3*35x	21
O	33B	**Currency/Original Ordered Amount**	3!a15d	22
M	71A	**Details of Charges**	3!a	23
O	25A	**Charges Account**	/34x	24
O	36	**Exchange Rate**	12d	25
-----| End of Sequence B Transaction Details				
M = Mandatory, O = Optional - Network Validated Rules may apply				

pain.001.001.08 - CustomerCreditTransferInitiationV08

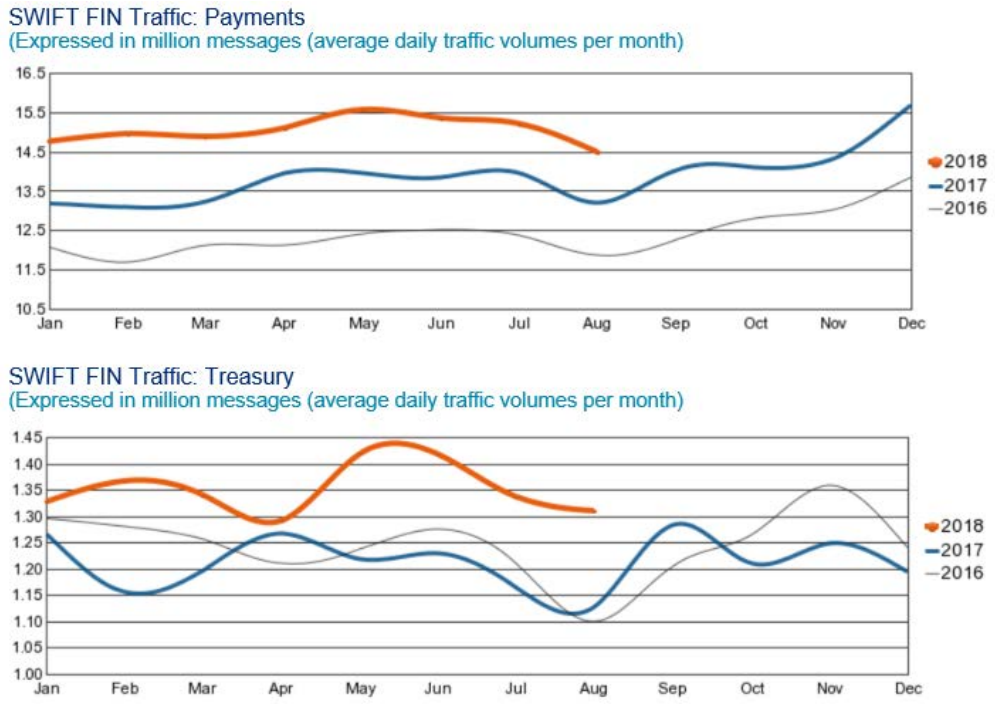
Or	MessageElement/BuildingBlock<*XML Tag*>	Mult.	Type
	Message root <Document> <CstmrCdtTrfInitn>	[1..1]	
	GroupHeader *<GrpHdr>*	[1..1]	
	MessageIdentification *<MsgId>*	[1..1]	Text
	CreationDateTime *<CreDtTm>*	[1..1]	DateTime
	Authorisation *<Authstn>*	[0..2]	±
	NumberOfTransactions *<NbOfTxs>*	[1..1]	Text
	ControlSum *<CtrlSum>*	[0..1]	Quantity
	InitiatingParty *<InitgPty>*	[1..1]	±
	ForwardingAgent *<FwdgAgt>*	[0..1]	±
	PaymentInformation *<PmtInf>*	[1..*]	
	PaymentInformationIdentification *<PmtInfId>*	[1..1]	Text
	PaymentMethod *<PmtMtd>*	[1..1]	CodeSet
	BatchBooking *<BtchBookg>*	[0..1]	Indicator
	NumberOfTransactions *<NbOfTxs>*	[0..1]	Text
	ControlSum *<CtrlSum>*	[0..1]	Quantity
	PaymentTypeInformation *<PmtTpInf>*	[0..1]	±
	RequestedExecutionDate *<ReqdExctnDt>*	[1..1]	±
	PoolingAdjustmentDate *<PoolgAdjstmntDt>*	[0..1]	Date
	Debtor *<Dbtr>*	[1..1]	±
	DebtorAccount *<DbtrAcct>*	[1..1]	±
	DebtorAgent *<DbtrAgt>*	[1..1]	±
	DebtorAgentAccount *<DbtrAgtAcct>*	[0..1]	±
	InstructionForDebtorAgent *<InstrForDbtrAgt>*	[0..1]	Text
Or	**MessageElement/BuildingBlock<*XML Tag*>**	**Mult.**	**Type**
	UltimateDebtor *<UltmtDbtr>*	[0..1]	±
	ChargeBearer *<ChrgBr>*	[0..1]	CodeSet
	ChargesAccount *<ChrgsAcct>*	[0..1]	±
	ChargesAccountAgent *<ChrgsAcctAgt>*	[0..1]	±
	CreditTransferTransactionInformation *<CdtTrfTxInf>*	[1..*]	
	PaymentIdentification *<PmtId>*	[1..1]	±
	PaymentTypeInformation *<PmtTpInf>*	[0..1]	±
	Amount *<Amt>*	[1..1]	±
	ExchangeRateInformation *<XchgRateInf>*	[0..1]	±
	ChargeBearer *<ChrgBr>*	[0..1]	CodeSet
	ChequeInstruction *<ChqInstr>*	[0..1]	±
	UltimateDebtor *<UltmtDbtr>*	[0..1]	±
	IntermediaryAgent1 *<IntrmyAgt1>*	[0..1]	±
	IntermediaryAgent1Account *<IntrmyAgt1Acct>*	[0..1]	±
	IntermediaryAgent2 *<IntrmyAgt2>*	[0..1]	±
	IntermediaryAgent2Account *<IntrmyAgt2Acct>*	[0..1]	±
	IntermediaryAgent3 *<IntrmyAgt3>*	[0..1]	±
	IntermediaryAgent3Account *<IntrmyAgt3Acct>*	[0..1]	±
	CreditorAgent *<CdtrAgt>*	[0..1]	±
	CreditorAgentAccount *<CdtrAgtAcct>*	[0..1]	±
	Creditor *<Cdtr>*	[0..1]	±
	CreditorAccount *<CdtrAcct>*	[0..1]	±
	UltimateCreditor *<UltmtCdtr>*	[0..1]	±
	InstructionForCreditorAgent *<InstrForCdtrAgt>*	[0..*]	±
	InstructionForDebtorAgent *<InstrForDbtrAgt>*	[0..1]	Text
	Purpose *<Purp>*	[0..1]	±
	RegulatoryReporting *<RgltryRptg>*	[0..10]	±
	Tax *<Tax>*	[0..1]	±
Or	**MessageElement/BuildingBlock<*XML Tag*>**	**Mult.**	**Type**
	RelatedRemittanceInformation *<RltdRmtInf>*	[0..10]	±
	RemittanceInformation *<RmtInf>*	[0..1]	±
	SupplementaryData *<SplmtryData>*	[0..*]	±
	SupplementaryData *<SplmtryData>*	[0..*]	±

Source: Category 1 Standards, SWIFT User Handbook and ISO 20022 Payments Initiation Message Definition, ISO 20022, Celent analysis

According to Trace Financial, the bare minimum file size for MT101 is 7 fields in Block 4, with a total file size of approximately 209 bytes. The bare minimum for pain.001 is 11 fields with total file size of 1301 bytes. pain.001 file sizes grow quickly if you populate all the fields in the file, resulting in about 600 fields and a file size of 78633 bytes. Both message types (MT 101 and PAIN.001) have been enriched to support the gpi Unique End-to-End Transaction Reference (UETR), enabling corporates to generate UETR tracking information directly in their treasury and payment systems.

Another indication that the long-awaited migration to ISO 20022 is happening more slowly than expected is the year-over-year growth in FIN traffic for payments. SWIFT FIN enables financial institutions to exchange individual, structured financial messages securely and reliably, in either MT (payments and treasury) or ISO 15022 (securities) message formats. Growth in FIN traffic is continuing, with 11% year-to-date growth for 2018. Treasury MT messages are also growing, with 12.4% YTD growth, albeit on a much lower base than payment volumes (Figure 11).

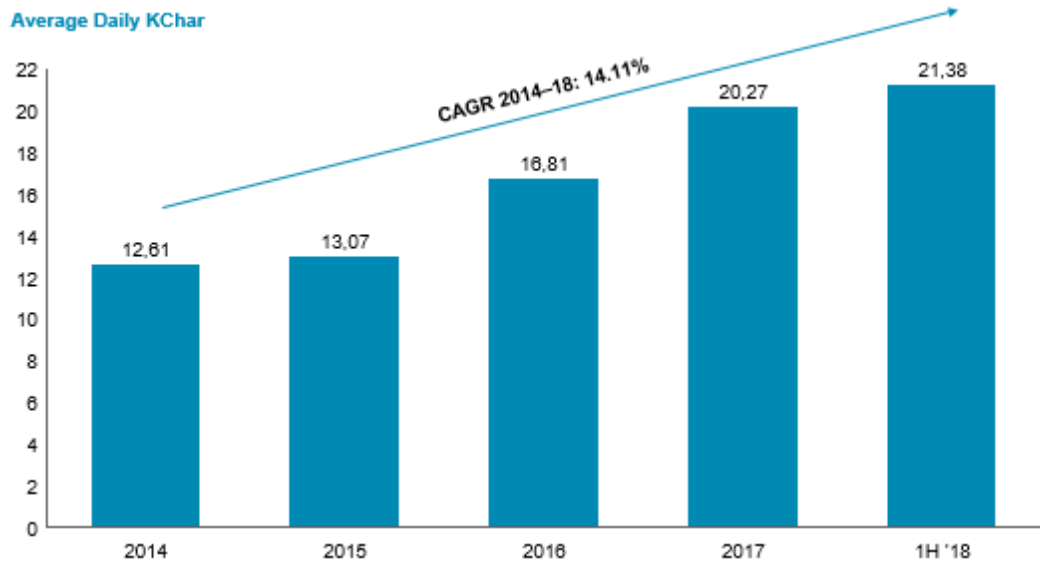
Figure 10: A Mix of Payment Formats Still in Use



Source: SWIFT FIN Traffic and Figures, SWIFT.com, accessed September 22, 2018

Another SWIFT messaging service, SWIFT FileAct, is a secure, reliable, and efficient way to transfer large files of structured messages, such as bulk payments files or securities value-added information. Again, looking at SWIFT figures, the dramatic growth in FileAct daily file sizes tells the story of growing volumes and file sizes.

Figure 11: SWIFT FileAct Daily



Source: SWIFT FIN Traffic and Figures, SWIFT.com, accessed September 22, 2018
Note: A kilo-character is one thousand characters, and is a common way of measuring file sizes

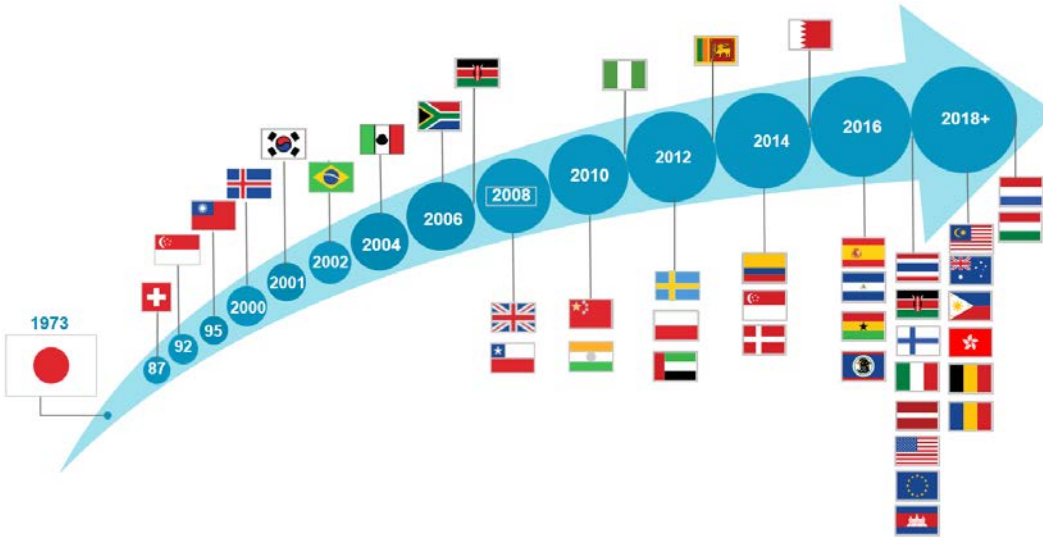
When transferring data, SWIFT FileAct acts as a wrapper for any kind of structured text, spreadsheets, XML formatted files, and images. It supports all types of character sets and any content structure. In many cases, originators are adding more data elements to file contents to enhance remittance information and streamline reconciliation.

Desire for Real-Time Information and Payments

Bank deposit account servicing, low-value payment systems, corporate treasury management workstations, and enterprise resource planning systems traditionally exchange information using batch files. This has led corporate clients to establish a handful of file channel transmission windows each day to send payment initiation files, and to receive current day balance and transaction data.

As discussed earlier, many of the largest payment markets in the world are live with real-time payments, with much of the focus on consumer-oriented transactions. Figure 12 from *A Real-Time Hub for a Real-Time Everything Future* (March 2018) shows an acceleration in the numbers of countries implementing systems, with more underway or in discussion.

Figure 12: The Adoption of Real-Time Payments Continues Apace Globally



Source: Celent analysis

For example, in the US, The Clearing House (TCH) recently launched its Real Time Payments (RTP) system, and in the European Union, the SEPA Instant Credit Transfer (SCT Inst) scheme went live. But many of real-time payment schemes have relatively low payment limits ($25,000 for TCH RTP and €15,000 for SCT Inst), limiting their usefulness for business-to-business (B2B) payments.

Transaction bankers are assessing the business case for supporting real-time payments for corporate clients, ensuring that new developments in the payments space are truly relevant to corporate treasury and finance. SWIFT and EuroFinance teamed up to understand the potential for cross-border payment process improvement by surveying a cross-section of corporate treasury professionals. Respondents were asked about their top priorities for improving cross-border payments. Overall, at 64%, the top priority for respondents was “to be able to track the status of payments in real time, from initiation to credit. “To be able to make instant cross-border payments” was ranked a top priority by 42% of respondents. Larger, more sophisticated companies especially value the marginal gain from real-time processes.

Figure 13: Corporate Treasurers Value Real-Time Payment Tracking Over Real-Time Payments

Source: The future of payments: a corporate treasury perspective, EuroFinance Corporate Treasury Network, 2018

To satisfy corporate treasurers who value real-time information, tracking, and payments, banks must rethink their current approach to corporate-to-bank channels, transitioning from a batch-based approach to real-time information and payment flows.

Lack of Omnichannel Approach to Corporate Customer Experience

Another aspect of unattended channel integration where Celent sees substantial differences in approach is providing integration with attended, digital channels. At most banks, there is no integration between these two categories of channels: a client that transmits a file through a host-to-host or SWIFTNet solution has no visibility to that file or its contents using an online portal, mobile app, or tablet.

Some banks, however, have established a level of integration across those channels that provides for visibility of file status, file approval, and even exception management of transactions, batches, or entire files. This allows clients to have complete visibility to their interactions with the bank regardless of channel. It also provides an additional level of security for those clients whose internal systems may not provide sufficient capability to approve transactions that are contained in the file. Finally, this level of integration can offer support for disaster recovery when the client's preferred channel is unavailable.

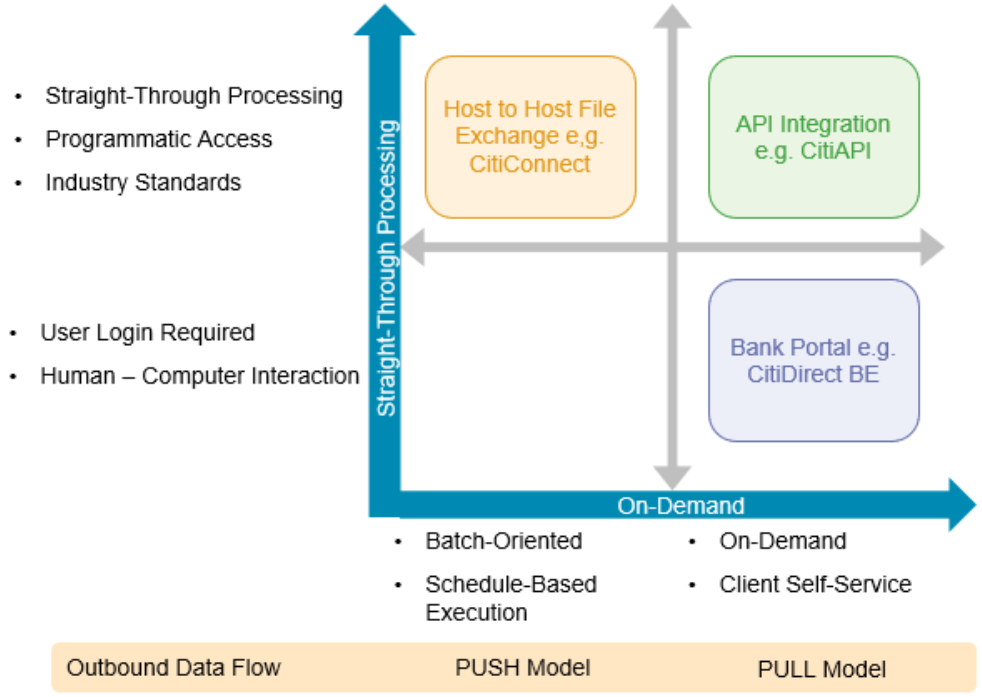
With an increasing reliance by corporate clients on initiating transactions through the file-based channels, providing integrated, online visibility and access for approval or exception management will become an even more important differentiator. APIs hold promise to act as the intermediary between the file channel and customer-facing, online channels.

APIs: A NEW REAL-TIME, UNATTENDED DELIVERY CHANNEL

APIs are emerging as a new, hybrid connectivity channel that combine the on-demand, real-time characteristics of digital attended channels with the automated capabilities of the unattended file channel. Transaction banking APIs have the potential to move corporates beyond batch processes for payment initiation, to transform tracking and tracking, and to transform intraday cash flow management. APIs offer instant visibility into payment confirmations and electronic bank account management.

But for most corporate clients, APIs represent a new channel, not a replacement of existing online portals or file-based host-to-host integration. Figure 14, from *Citi: CitiConnect API, Winner of Celent's Model Bank 2017 Award for Open Banking*, April 2017, depicts how CitiAPI fits into the bank's overall digital channel strategy.

Figure 14: APIs: A New Hybrid Connectivity Channel



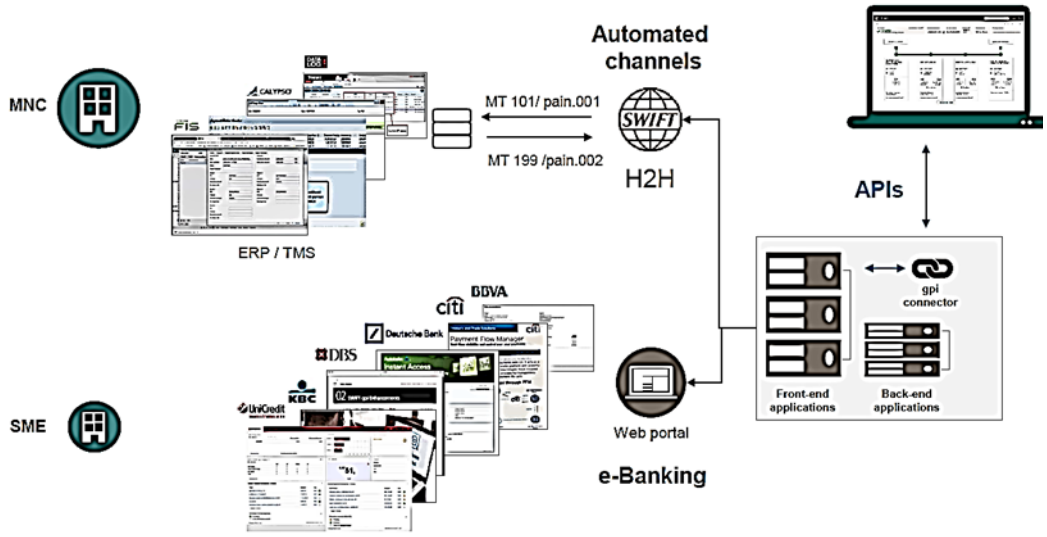
Source: CitiConnect API

CitiDirect BE is Citi's next-generation banking platform supporting on-demand transactions across multiple geographies, subsidiaries, and currencies with online, mobile, and tablet versions. CitiConnect streamlines bulk-oriented host-to-host file exchange and messaging, reducing costs with automated processing. CitiConnect API combines on-demand data access with host-to-host integration, improving straight-through processing while supporting industry standards, a hybrid alternative to traditional channels.

One example of this hybrid approach to integration, combining the robustness of existing channels with the unique, real-time capabilities of APIs, is SWIFT's global payments innovation (gpi), which went live in 2017, with over 270 banking groups sending more than 30% of SWIFT total cross-border payments as gpi, and over 50% of those credited

in less than 20 minutes As shown in Figure 15, SWIFT gpi relies on three critical corporate-to-bank connectivity channels to speed payments and provide transparency: e-Banking web portal, host-to-host file channel, and APIs.

Figure 15: SWIFT gpi Process Flow



Source: The future of payments: a corporate treasury perspective, EuroFinance Corporate Treasury Network, 2018

For corporate clients to benefit from the gpi's real-time tracking capabilities, their banks must be a part of SWIFT gpi. Further, for a corporate to have visibility into gpi payment statuses, the service must be integrated with the banks' online corporate portal or can be provided by the bank in a structured format (MT 199 & PAIN.002) so it can be integrated into the corporate's treasury or ERP applications.

Under the gpi initiative, banking clients, whether multinational corporates (MNC) or small to medium enterprises (SMEs), initiate payment messages through traditional channels. In Figure 15, the MNC uses a secure messaging channel and the SME uses a bank's e-Banking portal. Regardless of initiation channel or original message format, the payment message is converted into a single message MT 103 instruction, as SWIFT hasn't yet migrated MT 103 transactions to ISO 20022. SWIFT continues to use the older MT 103 message type for bank-to-bank messages, so if a corporate send newer ISO 20022 formats to its banks, it risks truncation of 20022 extended data fields not supported by MT 103.

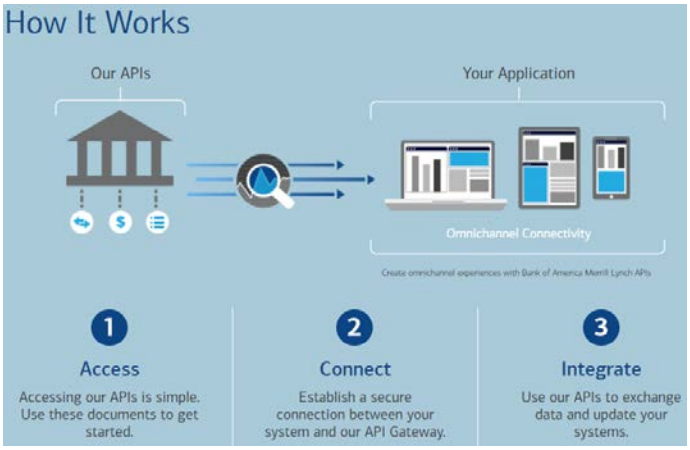
gpi for corporates (g4C) enables corporates to generate themselves the Unique End-to-End Transaction Reference (UETR) and receive real time tracking information from their banking partners through both FIN (MT 199) and ISO 20022 (PAIN.002). g4C provides a common experience for MNCs working with multiple banks offering the same level of transparency including information such as payment statuses, routing and total cost.

For its 2017 Corporate Payments and Bank Connectivity Report, FIS surveyed 132 treasury and finance professionals from corporations around the globe to understand how they navigate or plan to navigate through their payments and bank connectivity challenges. Thirty-five percent of respondents already have or plan to have an API banking initiative in place within 18 months. Financial professionals value banking APIs

for their ability to facilitate real-time payment and information flows, including balance inquiries, credit line availability, and vendor payments.

Several banks are working on API connectivity for corporate treasury management systems, along with other financial software used by their business clients. Bank of America Merrill Lynch (BofA) launched its API Developer Portal in January 2018 with a goal of creating an access channel for clients to connect and integrate their treasury applications with the bank's API Gateway (Figure 16).

Figure 16: Bank of America Merrill Lynch API Developer Portal



Source: Bank of America Merrill Lynch

Once banks and their fintech partners develop new API-based overlay solutions, such as Request for Payments or real-time communication of remittance data, Celent expects API adoption to increase. The two winners of SWIFT's 2017 gpi industry challenge, AccessPay and Assembly Payments, represent examples of API-based overlay services. AccessPay's cloud-based payment technology allows automation of payment transactions between customers and their banks. Assembly Payments enables Request for Payment and other types of payments for online marketplaces.

DIFFERENTIATING INTEGRATION CHANNELS

Key Research Question 3

How can banks offer more connected, collaborative, and intelligent integration channels?

Banks can become a more connected, collaborative, and intelligent integration partner by streamlining technical onboarding, outsourcing channel management, and integrating unattended channels.

Several opportunities exist for banks to offer more connected, collaborative, and intelligent integration channels.

STREAMLINING TECHNICAL ONBOARDING

Technical onboarding can be enhanced with two key elements:

- Publishing of standards in a manner that is easily accessible and usable to the client's IT resources. This is especially useful with XML-based standards but can be valuable for any standard or bank proprietary format that the client is expected to use.

- Supporting a testing facility that can be used by the client without having to schedule bank resources for support and that provides specific feedback to the client on a timely basis.

SWIFT's MyStandards program offers banks these capabilities for onboarding corporate clients that are using either SWIFT MT or ISO 20022 formats. There are currently 93 SWIFT customers using MyStandards for Banks, Corporates, Securities, Market Infrastructures, or Partners. The MyStandards facility allows banks to share their specifications for the relevant standards for each country in which it operates, which can be used by corporate clients to compare the requirements for each bank and identify whether changes need to be made to their systems to send or receive files.

The associated Readiness Portal allows bank clients (and even prospects during an RFP process) to upload test files for standards compliance with immediate response and allows both bank personnel and the client to track the readiness of the integration process. Published case studies on the use of MyStandards for banks such as Barclays and Citi indicate that timeframes were greatly compressed, especially when the platform was made available to clients early in the overall onboarding process, allowing the technical teams to make progress in parallel with the other aspects of onboarding such as account opening and service/product fulfilment.

Creating translation maps when onboarding new corporate clients can be tedious, but drag-and-drop translation tools simplify the process, with an added bonus of regular map updates that accommodate changes mandated in annual SWIFT Standards releases.

Outsourcing Onboarding and Channel Management

Another option that some banks have employed for easing the burden of technical onboarding is outsourcing this process to a service provider, often in conjunction with a B2B integration network service in which the actual transport of the data between the bank and its clients is outsourced. This can benefit banks with very large volumes of technical onboarding requests, those that have limited technical resource availability, or banks that need support with format translation to allow clients to use the format of their choice.

Like the recent trends in operational transformation in capital markets discussed in *Evolution of Utilities and Managed Services: From Cost Control to Innovation* (May 2018), corporate banking is seeing growing adoption of multi-tenanted managed services. Outsourcing has traditionally been the main lever of cost reduction for banks providing unattended corporate-to-bank connectivity. Specialist providers manage both the technology and operations required to deliver a highly secure, reliable, and scalable service, leveraging the skills and expertise of integration experts.

In multi-tenanted managed services, a group of firms outsource technology and operations to an external provider who offers the solution to multiple users using a common pool of resources, with room for customization and configuration for every user. This arrangement offers numerous benefits in addition to those seen in traditional outsourcing:

- Decrease in unit cost through sharing of common resources and greater economies of scale.
- Increase in scalability is manifold and time to market is accelerated, making market entry, expansion, and exits easier.
- Lessening of upfront investments, and limited resource spending on maintaining and upgrading solutions for responding to regulatory changes.
- Reduction of redundant activities in the corporate-to-bank connectivity lifecycle that are not competitive differentiators, and yet are developed and managed by every bank, resulting in duplication of efforts and wasted resources.
- Improvement in level of standardization while allowing room for customization for every user.
- Enablement of reliable, highly available platform and services, including 24x7 event monitoring.
- Introduction of overlay services including customer onboarding, format mapping and translation, data enrichment, end-to-end encryption, and sanctions checking.

Employing managed services allows banks to take an incremental approach to addressing integration challenges by starting with smaller pieces, such as onboarding one or two large corporates requiring file transformation and translation, and then growing scope of adoption across the larger customer base. An incremental approach is also easier in terms of financial and integration resources requirements compared to lifting and shifting large pieces of operations.

Integrating Unattended Channels

Celent has published extensively about consumer expectations of an integrated banking engagement experience, one where customers make little distinction between delivery channels. SWIFT gpi is a good example of a true omnichannel corporate client experience: one which combines the security, resiliency, and cost effectiveness of the file channel with the ability of APIs to deliver real-time, event-driven status notifications into a bank's online portal or the corporate's treasury management system.

A handful of leading edge banks are delivering (or are in development) on the promise of omnichannel visibility between attended and unattended channels. With the host-to-host file channel carrying an increasing number of transactions with greater file sizes, omnichannel visibility into the status of those transactions is critical to meet client demands for visibility and tracking.

A critical ingredient for integration between attended and unattended channels is the capability for the host-to-host file service to initiate and manage real-time "events" — the ability to publish change notifications, react to these changes, and wait for instructions based on events. To achieve omnichannel transparency, file channel events must be integrated into the bank's digital channels (e.g. portal, mobile, tablet) or the corporate client's TMS. Solutions such as hybrid/cloud integration and message brokers act as mediators between channels, taking event messages from one channel and making them available to another.

Putting It All Together

The experience of a North American super-regional bank powerfully illustrates the results that banks can achieve when they implement a hybrid approach for corporate-to-bank integration.

The bank services commercial customers throughout the United States and Canada, ranging in size from sole proprietors to large multinational corporations. To meet the integration demands of this diverse community, the bank must support a wide range of connectivity options, ranging from simple, attended file upload for small and medium enterprises, to a variety of unattended, host-to-host solutions, capable of handling real-time processing of critical payment files as well as bulk delivery of large image cash Letters. In addition, as the bank passes payment files to multiple clearing systems in the United States and Canada, they must ensure that data formats are compliant with local standards and specifications. Recently, the bank has seen increased demand from its largest customers to support ISO 20022 transactions, a format not widely used across North America and not supported by the bank's internal systems.

To meet these demands, the bank leverages a managed services solution from OpenText, a leading integration services provider. OpenText manages all the bank's customer-facing file channels except for SWIFT, offering portal-based file exchange, host-to-host connectivity, and bulk file transfer. New customer onboarding for portal file upload customers is accomplished through APIs. For larger and more demanding customers, the service provider offers a range of technical integration options, professional services, and testing support. The service provider has also helped the bank meet demands for ISO 20022 by developing "Message Implementation Guides," training bank personnel on selling and supporting ISO 20022, and providing translation services to and from the bank's internal file formats. The bank and the service provider are currently working together to further enhance the bank's commercial digital portal to allow host-to-host customers to check the status of their files and payments using the service provider's visibility APIs.

By leveraging a managed services approach, the bank has outsourced the complexity of file channel and file format support, freeing up internal technology resources and providing enhanced channel services and support to its customers.

PATH FORWARD

To cope with the increasingly hybrid world of corporate-to-bank integration, banks must offer a full range of attended and unattended digital channels, tailored to a corporate's specific business processes. It is also vital that banks deliver an omnichannel digital experience for business clients, one that meets each client's unique business and technology requirements.

Banks have an opportunity to become more connected, collaborative, and intelligent integration partners by:

1. **Streamlining technical onboarding** with published standards, translation tools, and testing facilities to compress implementation timeframes and facilitate product fulfillment.

2. **Outsourcing channel management** to ease the burden of technical onboarding and ongoing management of file-based corporate-to-bank integration.

3. **Integrating attended and unattended channels** to meet customer expectations for an omnichannel engagement experience, one where clients have full visibility into interactions regardless of delivery channel.

4. **Putting it all together** by adopting a hybrid approach to corporate-to-bank integration; an approach that meets the unique needs of a diverse set of corporate clients.

Oliver Wyman and Celent recommend that financial services firms adopt a modular IT architecture which can drive down the cost of technology while making it more adaptive. Key attributes of a good target state modular architecture include API-based connectivity, service-based architecture, cloud-hosted platforms, configurable business rules, and robust data architecture.

Applying a modular approach to solving the challenges presented by the increasingly hybrid world of corporate-to-bank integration favors an outsourced, managed services approach. Managed services providers can handle onboarding, infrastructure oversight, and day-to-day operations, freeing up the bank to focus on the client experience. Managed services can reduce costs, increase scalability, limit upfront investment, standardize processes, and enable overlay services.

Was this report useful to you? Please send any comments, questions, or suggestions for upcoming research topics to info@celent.com.

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If you found this report valuable, you might consider engaging with Celent for custom analysis and research. Our collective experience and the knowledge we gained while working on this report can help you streamline the creation, refinement, or execution of your strategies.

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Typical projects we support related to corporate-to-bank integration include:

Vendor short listing and selection. We perform discovery specific to you and your business to better understand your unique needs. We then create and administer a custom RFI to selected vendors to assist you in making rapid and accurate vendor choices.

Business practice evaluations. We spend time evaluating your business processes, particularly in corporate-to-bank integration. Based on our knowledge of the market, we identify potential process or technology constraints and provide clear insights that will help you implement industry best practices.

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We provide services that help you refine your product and service offerings. Examples include:

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