

Connected Corporate Banking

Digital Corporate Banking Solutions

CELENT

Patricia Hines

29 January, 2018

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CONNECTED CORPORATE BANKING

PART 3: DIGITAL CORPORATE BANKING SOLUTIONS

Patricia Hines, CTP 29 January 2018

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EXECUTIVE SUMMARY

In 2017, Celent kicked off a research effort to define the opportunity across corporate banking. The first report in this three-part research series, *Connected Corporate Banking: Breaking Down the Silos* (October 2017) looked at corporate banking performance, segment revenue, customer segmentation, technology drivers, and software providers.

For banks able to deliver comprehensive, tailored, and connected corporate banking products, the rewards can be substantial. However, banks looking to capture a greater share of the global corporate banking wallet must consistently invest in updating and enhancing their corporate banking solutions to meet client demands for ease of use, flexibility, and convenience. As they look to invest, banks often turn to packaged software to round out their product set.

There is a broad range of solutions to consider when buying packaged software, ranging from integrated corporate banking suites to digital corporate banking solutions to best-ofbreed capabilities focused on specific product segment. As part of the Connected Corporate Banking research effort, Celent sought to understand the landscape of technology vendors offering packaged solutions across transaction banking and commercial lending.

In May 2017, Celent issued an RFI to vendors offering corporate banking technology across product segments. Based on the RFI responses, Celent separated the vendor solutions into two primary categories: 1) integrated corporate banking suites and 2) digital corporate banking solutions, defined as follows:

- 1. **Integrated Corporate Banking Suites**: The vendor supports a majority of the product features across all five of Celent's Corporate Banking Taxonomy's broad categories (cash management, trade finance and supply chain, lending and credit, corporate-to-bank channels, and back office and accounting).
- 2. **Digital Corporate Banking Solutions**: The vendor supports product features across three or more of the taxonomy's broad categories.

The second report in the three-part series, *Connected Corporate Banking Part 2: Integrated Corporate Banking Suites Providers* (December 2017) profiled nine vendors offering comprehensive solutions across corporate banking product segments. This report, the final in the series, profiles providers of digital corporate banking solutions, a popular choice for banks looking to enhance their corporate banking competitiveness, especially in the area of cash management. It addresses three key research questions.

KEY RESEARCH QUESTIONS

Why are banks investing in digital corporate banking solutions?

2 How should banks approach vendor selection?

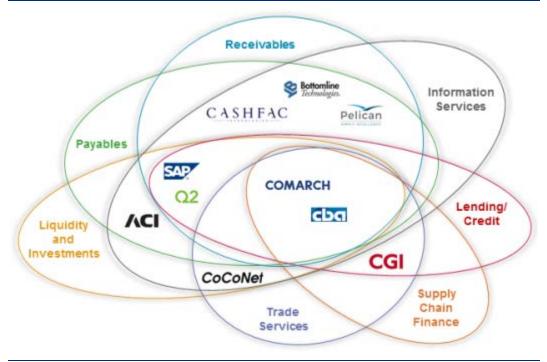


Which vendors offer digital corporate banking solutions?

The vendor profiles include an overview of features supported, installed customer base, geographic regions served, recent mergers and acquisitions, and technology partnerships. The vendors profiled are ACI Worldwide, Bottomline Technologies,

Cashfac, CGI Group, CoCoNet, Comarch, Commercial Banking Applications, Q2 Software, Pelican, and SAP (Figure 1).



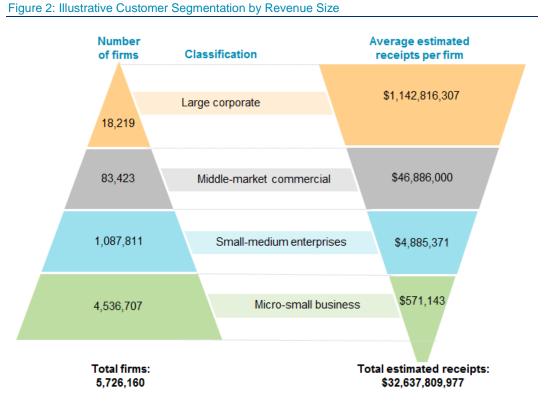


Source: Celent analysis

Banks looking for corporate banking solution providers can use the Connected Corporate Banking report series as an aid in their selection process. Given the broad scope of the Connected Corporate Banking vendor research and diversity of companies participating, Celent's full ABCD vendor evaluation framework was neither appropriate nor feasible. However, for banks kickstarting vendor evaluation, we suggest considerations as you decide which vendors to assess further.

INTRODUCTION

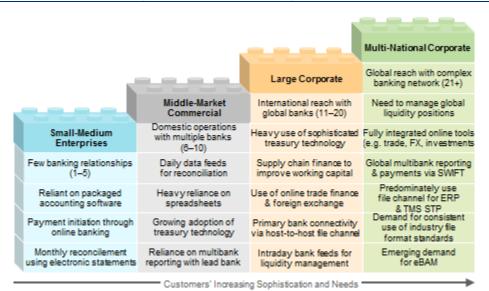
Most banks segment their business customers based on revenue size. For example, Figure 2 outlines one approach to customer segmentation based on annual revenues (receipts) and number of employees.



Source: United States Census Bureau 2012 Statistics of U.S. Businesses, Celent

Using this segmentation approach, a bank then creates digital banking solutions "tailored" to each segment, with most banks deploying two or more digital solutions, often one for small businesses and another for middle market commercial and larger firms. Figure 3 depicts various stages in a firm's economic lifecycle and a potential approach for grouping products for each customer segment.





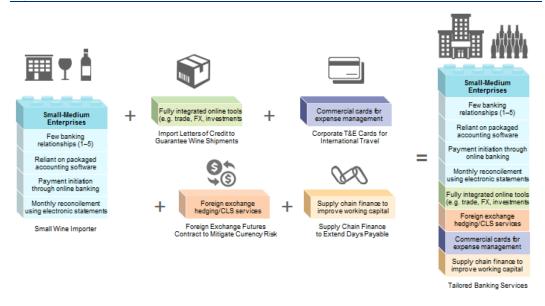
Source: Celent

Large corporates may standardize on a global payments platform but lean on their lead transaction banks for more sophisticated netting, intercompany lending, and foreign exchange hedging. Middle market companies with limited treasury and finance staffs value the ability to initiate and approve payments, manage exceptions, and receive alerts on smartphones and tablets when they are working outside of their corporate offices. Small-medium enterprises want simplified services that are scalable as they grow, but not "dumbed down."

Although at most banks cash management, trade services, and supply chain finance fall under the Transaction Banking banner, these solution sets often run on disparate, siloed back office platforms. To mitigate the jarring user experience of multiple logins, different user interfaces, mismatched data elements, and inconsistent entitlements, many of the largest banks continue to invest in sophisticated, integrated corporate digital front end channel solutions such as Wells Fargo CEO, CitiDirect BE, Bank of America CashPro, and Deutsche Bank Autobahn. However, many geographies have regional nuances such as the prevalence of checks in the United States, electronic billing (boleto) requirements in Brazil, and Renminbi invoicing in APAC, which may require corporates to seek tailored online, mobile, and file channel solutions from more regionally focused banks.

Unfortunately for banks, a business's banking needs do not neatly follow a steady continuum. Depending on the business size, industry, and geographic location, they may require a cross-section of products, as shown in Figure 4.

Figure 4: One Size Does Not Fit All



Source: Celent

Many banks continue to offer their small business clients a rebranded retail online banking interface with limited cash management features. These banks underestimate the growing sophistication of SME financial needs. The world's largest corporations have been doing business globally for many years. As it becomes easier for smaller companies to work with suppliers and buyers across geographies, many more middlemarket and small-medium enterprises are becoming globally active.

Most digital platforms offered to small business clients do not allow for mixing and matching of products. This limitation prevents users from accessing integrated crossborder payments, letters of credit, commercial card services, and supply chain finance. It's helpful to explore the range of products in more detail.

CORPORATE BANKING TAXONOMY

No surprise, sophisticated corporate clients demand an extensive set of products and services, and banks that want to attract (and retain) a substantial piece of a corporate's banking business must continue to invest in the technology infrastructure required to deliver a host of products across multiple corporate banking segments. Celent developed the Corporate Banking Taxonomy depicted in Figure 5 to categorize the dizzying array of products and services needed by corporate treasurers to manage working capital, liquidity, investments, and borrowing across their geographic footprints.

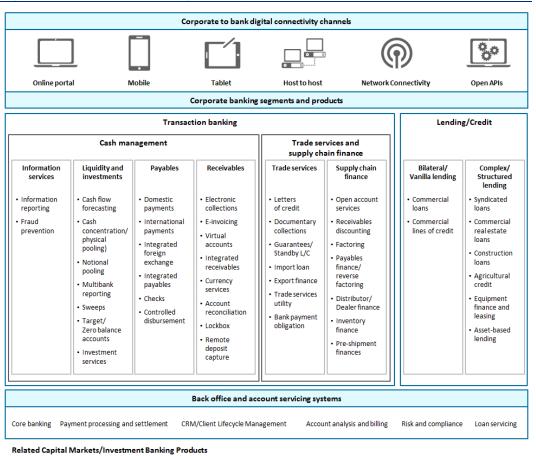


Figure 5: Celent Corporate Banking Taxonomy

- Commodity price hedging
- Interest rate hedging

Foreign exchange rate hedging

- Credit risk exposure hedging
- Source: Celent analysis

The Celent taxonomy is broken down into two primary product segments: transaction banking and lending/credit origination. There are other essential products and services used by corporate and institutional clients that fall outside of a traditional global transaction banking product group. Risk management includes products used by corporates to manage their risk profile such as hedging and derivatives instruments (e.g., interest rate, foreign currency, commodity, and credit). Corporate finance includes equity capital markets, debt capital markets, and mergers and acquisitions.

Corporate-to-bank connectivity channels act as the customer-facing interface. Companies use multiple channels for bank connectivity — web-based online portals, treasury workstations, host-to-host file exchange, SWIFT for Corporates, mobile/tablet banking, and paper-based/fax. Behind the scenes, bank back office systems provide the technology architecture to support specialized accounting and processing for complex corporate banking products and services. <u>Appendix 1</u> contains definitions for each of the products listed in the taxonomy.

For banks able to deliver comprehensive, tailored, and connected corporate banking products, the rewards can be substantial. The corporate banking revenue pool is an attractive one, set to grow 4% from \$780 billion in 2016 to \$915 billion in 2020 (Figure 6).

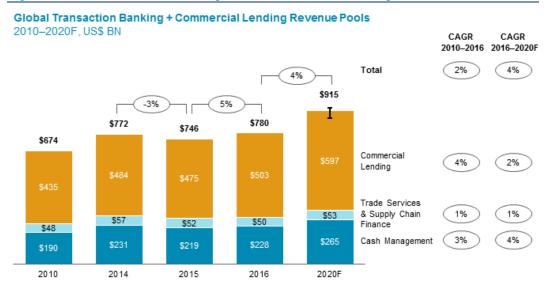


Figure 6: GTB and Commercial Lending Forecast to Grow at 4% Through 2020

Source: Oliver Wyman GTB Revenue Pools

But in the battle for corporate banking revenue share, technology is both an opportunity and a challenge. Corporate banking is an infrastructure-heavy line of business. Maintaining and building competitive offerings for the vast array of products and services required by corporate treasurers is a costly proposition. The days of implementing a new solution and only applying mandatory maintenance patches or regulatory requirements are long gone. The largest banks have the upper hand as they invest heavily in multiproduct, multicountry, and multibank platform capabilities. However, smaller banks can capture their share of the growing revenue pool by thinking differently about build versus buy and software deployment decisions.

THE IMPORTANCE OF DIGITAL CORPORATE BANKING SOLUTIONS

As discussed in *Strategies for Enhancing Strategies for Enhancing Corporate Client Experience: The Future of Attended Channels* (January 2017), a bank's digital corporate banking solution remains the daily face of the bank to a very large percentage of business and corporate clients. Surveys of corporate clients indicate that banks have a lot more work to do to satisfy the demands of end users who want their corporate banking applications to be as easy to use and as convenient as the applications they use as consumers.

Some of the most common strategies being adopted by corporate banking lines of business for improving the client channel experience include:

- Building out integrated portals to make invisible the organizational and product silos inherent in corporate banking.
- Simplifying the user experience.
- Establishing an omnichannel approach to providing consistent data and access to transactions across channels.
- Enhancing authentication options, including biometrics.
- Expanding self-service, including the ability to securely exchange documents and open accounts and new services.

Transaction banking services are operationally complex, and any technology or process failures can result in a substantial financial loss for corporate clients as well as damage to the bank's reputation in the industry. If a bank does not continually improve and enhance its product offerings to meet client demands, while ensuring reliability, security, and scalability, it risks having clients shop elsewhere. According to the CGI 2017 Transaction Banking Survey Report, 70% of corporate practitioners plan to assess current relationships with their primary banking partners in the area of cash management services, 65% for payments, and 48% for liquidity solutions.



With large numbers of corporate clients reevaluating their banking partnerships, best-inclass solutions play a significant role in whether a bank retains, gains, or loses clients. According to the CGI 2017 Transaction Banking Survey Report, "selecting the best-inclass providers of products and services is at the top of the list with 89% of North American corporate practitioners rating the level of value "very important" or "quite important" (Figure 7).



Figure 7: Factors Considered when Organizations Establish a Banking Relationship

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

A close second, 87% of North American corporates value "highly efficient and integrated technology systems and processes" as either very important or quite important. At the end of the day, integration is the linchpin underlying "connected corporate banking" and banks that excel at integrating business and technology silos will win market share.

In past reports on this topic, Celent has emphasized the importance of offering an integrated, consistent client experience across the various product silos within the corporate bank. Even with a modern, easy-to-use online offering for core cash management services, business customers of many banks are frustrated by the requirement for separate logins and security procedures for other applications such as remote deposit capture, tax payments, investments, foreign exchange, trade finance, and commercial cards. This frustration highlights the importance of best-in-class back office systems and integration frameworks to ensure end-to-end consistency and straight-through processing.

To improve corporate practitioner satisfaction from a technology perspective, banks need to start with an overall digital strategy for corporate banking. The strategy will differ based on bank size, corporate banking solution maturity, and geographic expansion plans. As part of their strategy work, banks are thinking differently about build versus buy decisions, and on-premise versus cloud software deployment. There are a number of solutions to consider when buying software — ranging from integrated corporate banking platforms to digital cash management portals, and best-of-breed capabilities to fill out a particular product segment.

BUILD VS. BUY

An axiom in software companies usually holds true — the biggest competitor in a banking software deal is in-house development. Looking at the decision to build corporate banking software in-house versus buying packaged software, Celent outlined four software development goals and related reasons to buy or to build in <u>Leveraging SaaS to</u>

<u>Tackle the Legacy</u> (August 2012); and as shown in Table 1, those reasons still apply in 2018.

Table 1: Reasons to Build or Buy

GOAL	REASONS TO BUILD	REASONS TO BUY
MEETING BUSINESS SPECIFICATION	Keeping the system in the hands of people who know the business and the company best helps meet specific business requirements.	Benefiting from the experience of other insurance clients of an IT vendor to gain enhanced functionality and process efficiency and promote a continuous improvement approach.
COST, TIME, AND EFFORT REQUIRED	Leveraging past investments (existing IT infrastructure, for	Freeing up internal resources during implementation for other IT projects.
	instance) and shared resources to maximize existing investments.	Limited effort and time needed to upgrade the system.
		Lack of development skills for the modern toolset or code base of internal IT staff.
		Better documentation of the system.
		The buying option is often considered the less expensive approach.
QUEST FOR SIMPLICITY	Simple pricing structure and investment calculation because of fewer or no formal license or maintenance fees as well as no legal procedures.	Responsibility of keeping up-to-date with the latest technology or other changes impacting the business is the vendor's burden.
RELATIONSHIP MANAGEMENT	Steering a vendor relationship can be a challenge, and sometimes it is difficult to make sure knowledge of	Leveraging innovation driven by a vendor or a larger user community (IT vendor insurance clients).
	the vendor is effectively transferred.	Taking advantage of the IT vendor support services (24/7 for instance).

Source: Celent

In some cases, a bank's build versus buy analysis shows that vendors with a broad customer base and proven software already support a majority of functionality requirements, leverage newer technologies, deliver regulatory-related updates, and offer a robust roadmap for new features. When requirements cannot be met by a packaged solution or differentiation is critical, it is becoming easier and cheaper for banks to build bespoke systems with open source frameworks, agile development, and public cloud environments. A build decision may also attract IT talent looking to shape innovative financial services products.

As outlined in Oliver Wyman's <u>The Future of Technology in Mortgage Originations</u> (2016), an increasingly popular third option is to "buy and build." Especially when banks look to enhance existing functionality or to add ancillary services, buying a vendorprovided solution can reduce cost and time to market. But to derive the most value from an off-the-shelf solution, banks must focus on: (a) configuring the various pieces of the solution to deliver differentiation to their clients, aligned with the bank's target client segment and value proposition; (b) integrating these solutions to various internal and external systems to deliver a seamless client experience journey; and (c) configuring, customizing, or building client-facing digital interfaces where opportunity for differentiation is most pronounced. Whatever the build versus buy approach, Oliver Wyman also recommends 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.

LEADING WITH TECHNOLOGY

Banks invest in very different technology projects depending on their corporate banking solution maturity and geographic expansion plans. As originally discussed in the first *Connected Corporate Banking* report, Celent sees two segments particularly interested in leveraging digital corporate banking solutions to improve their competitiveness.

Global Banks Expanding into Emerging Economies

As some global banks exit countries no longer considered strategic, others are taking advantage of the opportunity to expand and go head to head with leading local banks. As global banks set up shop in new locations with new payment types, regulations, and regional nuances, they often deploy technology solutions from third party providers. In this case, the buy decision allows them to quickly establish a competitive offering, likely at a lower cost and with simpler operational requirements than building out new country-level functionality in their existing technology stack.

Regional Banks in Developed Economies

Transaction banking is highly fragmented, with many smaller commercial banks prominent in their local markets. Oliver Wyman estimates that major wholesale banks make up only about 15% of the global transaction banking revenue pool.¹ Regional banks have an opportunity to increase their competitiveness, either by leveraging emerging technologies to create new solutions or by partnering with financial technology firms to gain a foothold in new markets.

Regional banks are investing in transaction banking services, attracted by large deposits and transaction fees. Many already have competitive platforms, but others are held back by legacy commercial banking portals and platforms lacking support for key products. Celent sees continued adoption of more flexible technology platforms by regional banks that have previously found themselves at a competitive disadvantage in meeting the needs of larger commercial clients. Many of these clients are adopting either on-premise or cloud-based treasury technology and require different file formats and connectivity options to optimize straight-through processing and to automate bank reporting and transaction initiation. Much like the global banks, regional banks continue to refine their offerings, often in partnership with financial technology providers,

¹Wholesale Banks and Asset Managers: The World Turned Upside Down, Morgan Stanley & Co. International plc and Oliver Wyman Limited, 2017

CORPORATE BANKING VENDOR LANDSCAPE

BEST OF BREED VS. DIGITAL CORPORATE BANKING SOLUTIONS

In a number of product segments, vendors concentrate on providing focused best-ofbreed solutions with deep functionality and product expertise. In other cases, providers combine functionality across multiple product segments, striving to deliver a digital corporate banking solution integrating functionality across three or more of Celent's corporate banking product segments. These solutions offer a promise of access to multiple products within a single online platform providing a single, seamless experience to view and initiate transactions across product groups.

As with a build versus buy decision, banks need to carefully consider their business requirements when choosing a provider. It can be a confusing choice. Many solutions focus on a particular geography and its unique requirements (e.g., check services in the United States or SEPA payments in Europe). Others may have solutions across the breadth of corporate banking, but the underlying software applications are written on different technologies with different user interfaces and limited integration between platforms. In some cases, an external third party platform contributes to an extended solution set with yet another user interface and technology stack.

Looking across corporate banking product categories Figure 8 illustrates packaged software providers specializing in one or a few segments, compared to vendors striving to deliver functionality across several (or all) segments.

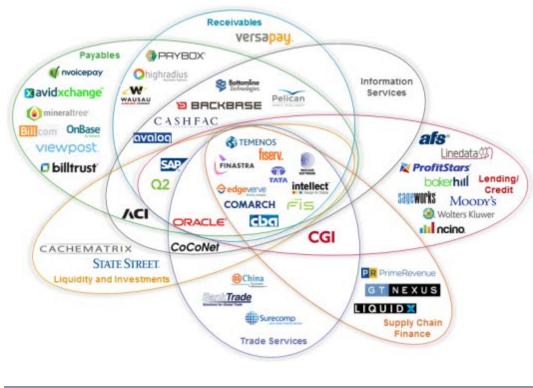


Figure 8: Corporate Banking Vendor Landscape (Not Exhaustive)

Note that Figure 8 is not a comprehensive market scan of available solutions in each product category; it is intended to highlight the diversity of providers and solutions available to banks in the marketplace. Companies illustrated were chosen based on vendor briefings, Celent analyst feedback, and market analysis. Product category coverage reflects segments served with core features and functionality, exclusive of third party partnerships.

In a number of product segments, vendors concentrate on providing focused best-ofbreed solutions with deep functionality and industry expertise. In other cases, providers combine functionality across multiple product segments, striving to deliver a broad, complete, and integrated corporate banking product suite.

As banks seek to balance their clients' desire for best-of-breed products along with integrated technology systems and processes, they often look to providers of leading digital corporate banking solutions. Digital corporate banking suites offer a promise of access to multiple products within a single online platform providing a single, seamless experience to view and initiate transactions across product groups.

METHODOLOGY

With a goal of differentiating the vendors offering packaged software solutions across transaction banking and commercial lending, Celent issued an RFI in May 2017. The RFI went to 23 technology providers providing solutions across Celent's Corporate Banking taxonomy; we received responses from 19 providers. Celent long-listed providers based on our knowledge of the market. As always, vendors did not have to be Celent clients to be included in this research; participation was open to both clients and non-clients. <u>Appendix 2</u> lists each provider that responded to the Celent RFI.

Vendors participated in two phases:

- 1. In Phase 1, we asked vendors to complete and return a written questionnaire (RFI) identifying their product capabilities.
- 2. In Phase 2, we shared with vendors their draft profiles and asked to check the facts and approve the profiles for inclusion in Celent reports.

The RFI requested information on features, customers, geographies, mergers, and partnerships.

ABOUT THE PROFILES

Each profile is structured the same way, with information about the vendor and its corporate banking offerings, its annual revenue, recent mergers and acquisitions, relevant third party partnerships, product segments supported, feature availability, geographic presence, and client base. A graphic is used to visually depict the product features supported and how each vendor delivers those features. The profiles appear in alphabetical order.

LIMITATIONS

Celent believes that this study provides valuable insights into integrated corporate banking suite capabilities. However, readers are encouraged to consider these results in the following context. The vendors self-reported and Celent did not validate the information provided. Participants in the study were asked to indicate which product segments and features their solutions support, in addition to providing general information about the vendor and their client base.

SELECTING AND DIFFERENTIATING VENDORS

SELECTING VENDORS

How should banks approach vendor selection? Research Question

Kev

We suggest banks kick-start their selection process

by asking a series of key questions.

Clients looking to select an integrated corporate banking suite should be asking several key questions, outlined below:

Vendor Strength/Pricing

- 1. What is the financial health of the vendor?
- 2. How important is this solution for the vendor? What is the risk it may stop investing in the product suite? Has a recent merger or acquisition affected the go-forward roadmap for the solution?
- 3. Can we afford it? How flexible is the vendor on pricing approaches? What is my total cost of ownership with this solution?

Feature/Function

- 1. Have we defined our "must-have" features and functionality? Who are the vendors that have the capabilities that we require? Where are the gaps? How much customization would be required to deliver our solution?
- 2. Does the vendor support my geographic regions' unique product requirements (e.g., US check services, Islamic banking, or EU SEPA payments)?
- 3. Is the vendor's solution written on a single code base, ensuring a consistent customer experience? If not, how are the underlying components integrated to support a unified user interface, seamless cross-channel workflow, consolidated entitlements, federated authentication, and robust reporting?
- 4. Does the vendor have referenceable clients that are of similar size, client base, and geographic reach as our bank?
- 5. What else does the vendor offer in this space? If we start with a specific priority area, can we continue to transform with the same vendor?

Performance/Implementation

1. How does the solution fit into our overall technology architecture? How easy or difficult will it be to integrate it with other solutions?

- 2. Will this solution support our current and future volumes? How well does it scale?
- 3. How agile is the solution? How easy is it to add new products, transaction types, etc.?
- 4. Does the vendor offer different deployment options (e.g., on-premise, ASP, traditional SaaS, or cloud SaaS)?
- 5. What are the vendor's implementation and support capabilities?

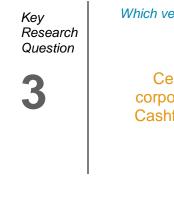
We lay out these questions as a starting point, although not all of them may be relevant in all situations. Moreover, the questions are certainly not exhaustive. Each client's situation is unique, and other specific factors may be more important to them. However, the questions support the vendor differentiation process by focusing on dimensions which are relevant and can be compared across multiple vendors. The RFI responses and resulting vendor profiles shed more light on each company.

DIFFERENTIATING VENDORS

Based on the Phase 1 RFI responses, Celent separated the vendor solutions into two primary categories: 1) integrated corporate banking suites and 2) corporate digital banking solutions, defined as follows:

- 1. **Integrated Corporate Banking Suites**: The vendor supports a majority of the product features across all five of Celent's Corporate Banking Taxonomy's broad categories (cash management, trade finance and supply chain, lending and credit, corporate-to-bank channels, and back office and accounting).
- 2. **Digital Corporate Banking Solutions**: The vendor supports product features across three or more of the taxonomy's broad categories.

Looking at availability of features across Celent's Corporate Banking Taxonomy, we slotted 10 vendors into the Digital Corporate Banking Solutions category.



Which vendors offer digital corporate banking solutions?

Celent identified 10 vendors offering digital corporate banking solutions: ACI, Bottomline, Cashfac, CGI, CoCoNet, Comarch, CBA, Q2, Pelican, and SAP.

In the RFI issued by Celent, we asked about feature availability and implementation status, providing the vendors with the response options, shown in Table 2.

Table 2: RFI Response Options

FEATURE AVAILABILITY	IMPLEMENTATION STATUS
Available out of the box.	Clients are in production with this feature.
Configurable using simple tools targeted for a business user.	Feature is supported, but there are no clients in production.
Configurable using tools targeted for an IT user.	Clients are currently in implementation with this feature.
Coding required.	This is under development.
Available with integration to a third party solution.	Not currently supported.
Available with integration to a separate module provided by this vendor.	Clients are in production with this feature.
Under development.	Feature is supported, but there are no clients in production.
On the roadmap.	
Could develop; would be considered customization.	
Not available.	
Not applicable.	

Source: Celent

Figure 9 compares each of the 10 Digital Corporate Banking Solutions vendors across the Celent Corporate Banking Taxonomy, based on their responses on feature availability and implementation status.

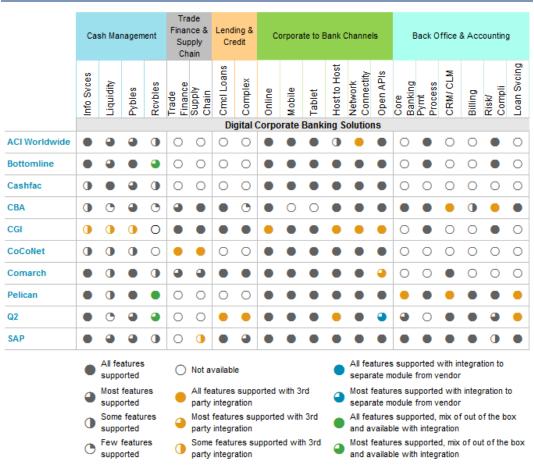


Figure 9: Digital Corporate Banking Solutions Capabilities Comparison

Source: Vendor RFI responses, Celent analysis

VENDOR PROFILES

This report extract and reprint was produced for Q2 Software, profiled in the next section. The original Celent report includes profiles for each of the Digital Corporate Banking Solutions vendors in alphabetical order.

Q2 SOFTWARE INC., DBA Q2

COMPANY AND PRODUCT BACKGROUND

Q2 is a leading provider of secure, cloud-based virtual banking solutions headquartered in Austin, Texas. Q2 enables community-focused financial institutions (CFFIs) to deliver a robust suite of integrated virtual banking services and engage more effectively with their retail and commercial account holders who expect to bank anytime, anywhere, and on any device.

Q2 solutions are often the most frequent point of interaction between its CFFI customers and their account holders. As such, Q2 purpose-built its solutions to deliver a compelling, consistent user experience across digital channels and to drive the success of its customers by extending their local brands, enabling improved account holder retention and creating incremental sales opportunities.

Over the past three years, Q2 has acquired Centrix, Social Money, and Unbill.

Table 3: Q2 Company and Product Snapshot

Q2 SOFTWARE INC., DBA Q2	Global HQ Location	Austin, TX
	Revenues (2016)	US\$150.2 million
	Industries Served	Financial institutions: banks, and credit unions

Source: Vendor RFI

Based on Q2's response to the Celent Corporate Banking RFI issued in May 2017, Figure 18 summarizes the vendor's capabilities across the corporate banking product taxonomy.

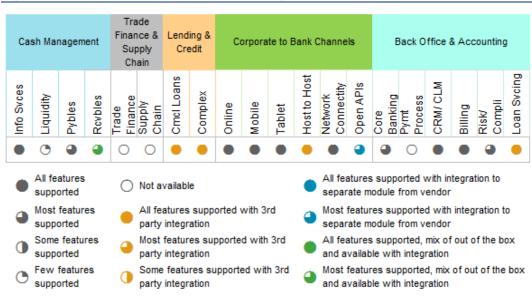


Figure 10: Q2 Capabilities Across Corporate Banking Product Taxonomy



The profile sections below reflect Q2's detailed responses to the Celent RFI in the areas of cash management, trade services and supply chain finance, lending and credit, corporate-to-bank channels, and back office and accounting.

CASH MANAGEMENT COMPONENTS AND FUNCTIONALITY

Table 4: Cash Management Solution Overview

Q2	Solution Name	Q2platform
	Number of Banks Live	850+ banks and credit unions
	Geographic Regions Live	North America

Source: Vendor RFI

Q2platform[™], Q2's digital banking platform, enables financial institutions (FIs) to deliver a complete range of financial services anytime, anywhere, on any device. It is designed to serve consumer, business, and corporate banking account holders while providing a single, seamless experience for account holders and a single point of integration and management, helping simplify an FI's business. Modular, agile, and extensible, the Q2 Platform can help FIs to grow. Q2's self-learning platform provides analytic intelligence to target new prospects.

Within Q2platform, Q2's Business Banking suite supports a broad range of functionality, from basic wires and ACH to tiered user management. Centrix Exact/TMS is a transaction management system that encompasses check positive pay, payee match, ACH positive pay, and account reconciliation. Moreover, because it all lives on a single platform, business account holders have a modern, consistent user experience regardless of device. The solution enables business account holders to run their businesses on the go from any device.

Q2 Secure[™] provides an array of fraud prevention and mitigation tools built natively on Q2platform. Q2 combines machine-learning and unattended inspection on a unified platform to better secure transactions, interactions, and customer touch-points. This includes in-house, multifactor, and out-of-band authentication, and extends to proprietary behavioral analytics products and the Centrix Payments I.Q. System (PIQS), which provides ACH activity reporting and ACH file validation.

- Q2 Sentinel[™] is Q2's proprietary fraud prevention solution. Built natively on the Q2platform, Q2 Sentinel uses the transactional and behavioral data of bank users to identify and halt suspicious transactions in real time, before they are completed.
- Q2 Patrol[™] provides an intelligent authentication layer, powered by behavioral analytics, for high-risk consumer banking activities. Q2 Patrol monitors user actions and presents an in-session identity-validation prompt when certain high-risk activities, including changes to alert delivery options or profile information, are attempted during a session that has been rated as potentially fraudulent.

Table 69 describes the Cash Management features offered as part of Q2platform.

SEGMENT	FEATURE	FEATURE AVAILABILITY	IMPLEMENTATION STATUS	COMPONENT NAME(S)
INFORMATION SERVICES	Information reporting	Available out of the box	Feature is supported	Q2 Platform
	Fraud prevention	Available out of the box	Feature is supported	Q2 Platform: Exact/TMS (Positive Pay). Q2 Secure: Q2 Sentinel & Patrol. Native MFA
LIQUIDITY AND	Cash flow forecasting	Available out of the box	Feature is supported	Q2 Platform for cash position only
	Cash concentration/ physical pooling)	Not available	Not currently supported	
	Notional pooling	Not available	Not currently supported	
	Multibank reporting	Under development	This is under development.	Q2 Platform via EDI
	Sweeps	Not available	Not currently supported	
	Target/Zero balance accounts	Not available	Not currently supported	
	Investment services	Available with integration to a third party solution	Feature is supported but there are no clients in production	Q2 Platform via SSO
PAYABLES	Domestic payments	Available out of the box	Feature is supported	Q2 Platform: US ACH and US Wire
	International payments	Available out of the box	Feature is supported"	Q2 Platform: USD and FX International Wires

Table 5: Cash Management Features and Implementation Status

	Integrated foreign exchange	Under development	This is under development.	
	Integrated payables	Under development	This is under development.	
	Checks	Available out of the box	Feature is supported but there are no clients in production	
	Controlled disbursement	Available out of the box	Feature is supported but there are no clients in production	Q2 Platform: Reporting
	Electronic collections	Available out of the box	Feature is supported	Q2 Platform: ACH
RECEIVABLES	E-invoicing	Available with integration to a third party solution	Feature is supported but there are no clients in production	Via SSO
	Virtual accounts	Available with integration to a third party solution	Feature is supported but there are no clients in production	Q2 Platform
	Integrated receivables	Not available	Not currently supported	
	Currency services	Not available	Not currently supported	
	Account reconciliation	Available with integration to a third party solution	Feature is supported but there are no clients in production	
	Lockbox	Available with integration to a separate module provided by this vendor	Feature is supported but there are no clients in production	Q2 Platform via EDI
	Remote deposit capture	Available with integration to a third party solution	Feature is supported	Multiple vendors via SSO and API

Source: Vendor RFI

TRADE SERVICES AND SUPPLY CHAIN FINANCE COMPONENTS AND FUNCTIONALITY

Q2 does not provide trade services and supply chain finance components and functionality.

BILATERAL AND COMPLEX COMMERCIAL LENDING COMPONENTS AND FUNCTIONALITY

Table 6: Bilateral and Complex Commercial Lending Solution Overview

Solution Name

Q2 Platform

Number of Banks Live

380 banks and credit unions

Geographic Regions Live

North America

Source: Vendor RFI

Table 71 describes the Bilateral and Complex Commercial Lending components offered as part of Q2 Platform.

SEGMENT	FEATURE	FEATURE AVAILABILITY	IMPLEMENTATION STATUS	COMPONENT NAME(S)
BILATERAL COMMERCIAL LENDING	Commercial Ioan	Available with integration to a third party solution	Feature is supported	Q2 Platform via integrated extension framework
	Commercial line of credit	Available with integration to a third party solution	In production	Q2 Platform via integrated extension framework
COMPLEX COMMERCIAL LENDING	Syndicated loan	Available with integration to a third party solution	Feature is supported	Q2 Platform via integrated extension framework
	Commercial real estate loan	Available with integration to a third party solution	In production	Q2 Platform via integrated extension framework
	Construction Ioan	Available with integration to a third party solution	In production	Q2 Platform via integrated extension framework
	Agricultural credit	Available with integration to a third party solution	In production	Q2 Platform via integrated extension framework
	Equipment finance and leasing	Available with integration to a third party solution	In production	Q2 Platform via integrated extension framework
	Asset-based lending	Available with integration to a third party solution	In production	Q2 Platform via integrated extension framework

Source: Vendor RFI

CORPORATE-TO-BANK CHANNELS COMPONENTS AND FUNCTIONALITY

Table 8: Corporate-to-Bank Solution Overview

Q2

Solution Name

Q2 Platform

Source: Vendor RFI

Q2's Corporate Banking[™] and Q2 Corporate Lite offer commercial account holders a look, feel, and ease-of-use that rivals that of retail users, while providing advanced treasury and cash management functionality. Combined with analytics-driven intelligence capable of generating new sources of revenue, Q2 corporate banking solutions empower FIs to serve account holders of all sizes in the age of mobility.

Q2's advanced entitlements replace complicated, grid-style workflows with a single-rule style policy that simplifies user entitlements. This sophisticated entitlements engine supports rules around account access, subsidiary management, date/time access controls, and geographic locations.

Information reporting puts the power of data directly in the hands of corporate account holders. It provides a set of standard reports but also gives account holders the freedom to create custom filtered reports based on their business needs.

The ability to conduct high-volume transactions is vital for corporate account holders, including title companies, property management firms, and other transaction-heavy businesses. The Q2 Platform supports high-transaction accounts with an intuitive, productivity-boosting interface — as well as custom workflows designed around the needs of specific high-volume verticals. Q2 provides the support necessary to acquire and retain corporate account holders requiring high-volume ACH, wires, or transfers.

Table 73 describes the corporate-to-bank channels components offered as part of Q2 Platform.

SEGMENT	FEATURE	FEATURE AVAILABILITY	IMPLEMENTATION STATUS	COMPONENT NAME(S)
CORPORATE- TO-BANK CHANNELS	Online portal	Available out of the box	In production	Q2 Platform
	Mobile	Available out of the box	In production	Q2 Platform
	Tablet	Available out of the box	In production	Q2 Platform
	Host to Host	Available with integration to a third party solution	In production	Q2 Platform via Intuit Direct Connect
	Network Connectivity	Available out of the box	In production	Q2 Platform
	Open APIs	Available out of the box	In production	Q2 Platform

Table 9: Corporate-to-Bank Channels Features and Implementation Status

Source: Vendor RFI

BACK OFFICE AND ACCOUNTING COMPONENTS AND FUNCTIONALITY

Table 10: Back Office and Accounting Solution Overview

Q2 Solution Name Q2 Platform	
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Source: Vendor RFI

The Q2 Open[™] portfolio offers a way to develop financial services products. Q2 Open APIs are modular and easy to implement, allowing any organization — from financial institutions (FIs) and fintech developers to retailers — to simply and inexpensively build their applications, features, and financial services products to support consumer saving and spending. Q2 Open powers all new products and strategies that are not possible with legacy banking technology — helping FIs extend their reach into new markets, tap into new revenue opportunities, generate deposits, and more.

- Q2 Debit[™] is an API that enables organizations to build checking account functionality into their application. It offers fully functional debit cards integrated into the Visa and MasterCard rails. Organizations can create fully functional, compliant, and cost-effective checking accounts with account and routing numbers, and issue FDIC-insured accounts with a bank of record. It also enables FIs to provide debit cards with their brand.
- Q2 Save[™] is an API that enables organizations to build savings account functionality into their application. Organizations can create fully functional, compliant, and costeffective savings accounts with account and routing numbers, earning interest like a standard savings account. Organizations can issue FDIC-insured accounts with a bank of record and create unlimited sub-accounts.
- Q2 Ledger[™] is an API that provides ledgering functionality for "For the Benefit Of" (FBO) accounts; an alternative to traditional checking and savings accounts.
- Q2 Biller Direct is a set of APIs that enables organizations to build bill presentment, aggregation, and bill pay functionality into their application. They can aggregate users' bills and payments in a single view; provide actionable, bill-related push notifications; and execute bill payments from 5,000+ direct billers nationwide.

Q2 SMART[™] is an analytics-driven recommendation engine that makes it easy to target account holder needs to increase products per relationship. It integrates seamlessly with online banking and leverages the behavioral analytics modeling of the Q2 Sentinel security product to help guide an FI's messaging efforts. Q2 SMART's behavioral targeting can uncover new opportunities for growth in all channels, and its reporting dashboards identify clear cross-sell opportunities to improve an FI's bottom line.

Table 75 describes the Back Office and Accounting components offered as part Q2 Platform.

Table 11: Back Office and Accounting Features and Implementation Status

SEGMENT	FEATURE	FEATURE AVAILABILITY	IMPLEMENTATION STATUS	COMPONENT NAME(S)
BACK OFFICE AND ACCOUNTING	Core banking	Available out of the box	In production	Q2 Open: Debit, Ledger, and Save
	Payment processing and settlement	Available out of the box	In production	Centrix PIQS

CRM/Client lifecycle management	Available out of the box	In production	Q2AO and Q2SMART
Account Analysis/Billing	Available out of the box	In production	
Risk/Compliance	Available out of the box	In production	Centrix PIQS (Risk Exposure), Q2OAO (KYC)
Loan servicing	Available with integration to a third party solution	In production	

Source: Vendor RFI

THE PATH FORWARD

Since the financial crisis, transaction banking and commercial lending have gained prominence, increasingly recognized as vital, relatively stable revenue generators with a low cost of capital. However, achieving success with serving commercial clients requires a commitment to technology investments, business model changes, and more complex operational processes. In the battle for revenue share, technology is both an opportunity and a challenge for differentiation.

With a steep decline in corporate practitioner satisfaction with their banking partners (68% satisfaction in 2015 versus 54% in 2017), banks are hearing loud and clear that they need to improve in areas such as harmonization of standards between banks, more timely information, integration of data from many banks, and single integration of corporate-to-bank processes.

To improve corporate practitioner satisfaction from a technology perspective, banks need to start with an overall digital strategy for corporate banking. As banks set out to invest in improved and differentiated capabilities, Celent recommends taking a look at proven vendors in the corporate banking space. A decision to buy from a third party provider rather than build in-house is often backed up by a variety of considerations.²

- Packaged software often incorporates features and functions that the business heads didn't realize they wanted.
- Buying can free up internal resources during implementation for other projects (versus in-house build).
- Upgrades, while costly, may involve limited effort and time.
- Support is typically available, sometimes 24 x 7.
- It is in the vendor's interest to keep up with new technologies.
- The vendor should also keep up with regulatory changes and ensure these are incorporated into the system in future releases.
- Almost all systems offer tools to maintain and configure the system, dramatically reducing maintenance costs and burden.
- Packages are typically well-documented, with documentation updated with each release.
- Packaged software can typically be implemented on commodity hardware.
- Innovation trickles down to the customer base (R&D is spread across many customers).

There are a variety of solutions to consider when buying packaged software, ranging from integrated corporate banking suites to digital corporate banking solutions to best-ofbreed products targeted at a particular product segment. Banks looking for corporate banking solution providers can use the Connected Corporate Banking report series as an aid to kickstarting their selection process.

This reprint is an extract of the original Celent report "Connected Corporate Banking Part 3: Digital Corporate Banking Solutions (January 2018) produced for Q2 Software.

²The Build Vs. Buy Debate: 2015 Update, Nicolas Michellod, Celent, 11 May 2015

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

APPENDIX 1: CORPORATE BANKING PRODUCT **GLOSSARY**

Table 12: Corporate Banking Product Glossary

Cash Management

Information Services

Information reporting: Prior and current day balance information, transaction detail, and standard/customized reports.

Fraud prevention (US-focused): Positive pay, reverse positive pay, ACH blocks/filters. Positive pay and reverse positive pay are disbursement services where either the bank or the client matches presented checks against checks issued by the client, with exceptions identified for further analysis. ACH blocks and filters help clients to control and monitor ACH activity.

Liquidity & Investments

Cash flow forecasting: Calculating a cash forecast using current and previous day cash positions, variance calculations, and projected cash inflows and outflows.

Cash concentration/physical pooling: Physical transfer of funds from outlying depository locations, often at different banks, to a central concentration bank account.

Notional pooling: All excess and deficit balances in the company's subsidiary accounts are virtually netted each day to calculate net interest earned or due.

Multibank reporting: Comprehensive view of transactions and balances for depository accounts, across banking entities.

Sweeps: A mechanism to transfer excess end of day funds from a depository account into an investment account.

Target/zero balance accounts: A type of depository account where the end-of-day balance is maintained at zero or other target balance, typically used for disbursements.

Investment services: Online investment and redemption of money market, fixed income, and mutual fund investments.

Payables

Domestic payments: Local ACH and market specific payment systems (e.g. SEPA credit transfers).

International payments: Payments in domestic or foreign currencies made to parties outside of the home country (except in the case of SEPA payments).

Integrated foreign exchange: Ability to execute foreign exchange flows automatically for international payments, as well as collections.

Integrated payables: Allows a company to initiate multiple types of payments in a single submission file.

Checks: Demand draft drawn against a company's current/demand deposit account.

Controlled disbursement (US-focused): Same day notification of the amount of checks that will clear against its disbursement account on a given day.

Receivables

Electronic collections: Incoming wires, ACH, direct debits.

E-invoicing: Electronic invoice presentment and payment, enabling companies to send electronic invoices and receive electronic remittances from customers.

Virtual accounts: Each payer is assigned a unique, virtual account number tied to a master account, allowing the recipient to reconcile each payment.

Integrated receivables: Combined, normalized data from incoming remittances of various types e.g. lockbox, ACH, electronic collections for streamlined posting.

Currency services: Cash vault, branch depository, courier.

Account reconciliation (US-focused): A bank service that matches check issue information to paid checks, reporting any unmatched or mismatched items.

Lockbox (US-focused): Wholesale lockboxes are used primarily for high dollar, low-volume business to business payments with retail lockboxes used to process high-volume, small dollar consumer remittances.

Remote deposit capture (Us-focused): Ability to scan and image paper checks, then transmit the

images to a depository bank for posting and clearing.

Trade Services and Supply Chain Finance

Trade Services

Letters of credit: A promise made by an issuing bank to pay a certain amount under specific circumstances.

Documentary collections: A payment method that processes the collection of a draft and accompanying shipping documents through international correspondent banks.

Guarantees/standby L/Cs: Serves as a vehicle to ensure the financial performance of a bank's customer to a third party beneficiary.

Import loan: Short-term cash advance (with recourse) that bridges the gap between making payment to a supplier and receiving payment from a buyer under a letter of credit or documentary collection.

Export finance: Financial assistance to businesses for the shipping of goods internationally.

Trade services utility: Support for TSU messaging capabilities, standards, and routing.

Bank payment obligation: An interbank instrument to secure payments against the successful matching of trade data.

Supply Chain Finance

Open account services: Facilitate payments, reconcilement, and settlement of open account trade transactions (transactions not supported by any banking or documentary trade instrument).

Receivables discounting: Financing made available on the expectation of repayment from funds generated from trade receivables.

Factoring: A form of receivables finance in which the seller sells their receivables at a discount to a finance provider.

Payables finance/reverse factoring: Buyer-led program enabling suppliers the option to receive the discounted value of receivables prior to the actual due date.

Distributor/dealer finance: Financing for a distributor or manufacturer to cover the holding of goods for resale.

Inventory finance: Financing provided against warehoused goods over which the finance provider usually takes a security interest.

Pre-shipment finance: Financing provided to a seller for the sourcing, manufacture, or conversion of materials into finished goods or services.

Lending and Credit Origination

Commercial/Bilateral Loans & Lines

Commercial/bilateral loans: Loan agreement between an individual borrower and individual lender, often used to acquire capital assets such as equipment, machinery, or inventory.

Commercial line of credit: Secured or unsecured line of credit, often revolving, often used for working capital needs.

Complex Lending

Syndicated loan: Larger loans offered by a group of lenders to a single borrower, often to share the risk involved.

Commercial real estate loan: A mortgage loan secured by a lien on commercial property.

Construction loan: Loan secured by a property lien to finance a building project until completion and issuance of a long-term loan.

Agricultural credit: Any of several credit vehicles used to finance agricultural transactions, including loans, notes, bills of exchange, and banker's acceptances.

Equipment finance & leasing: Financing solutions for equipment including aircraft, construction equipment, energy systems, hardware/software, and healthcare devices.

Asset-based lending: Commercial loans or lines of credit backed by liens on specific assets of the borrowing company.

Corporate-to-bank Channels

Online Portal: Web-based corporate banking portal provided by a bank with which employees of a corporate client interacts to retrieve information and conduct financial transactions.

Mobile: Native mobile app or responsive design-driven user interface.

Tablet: Native tablet app or responsive design-driven user interface

Host to Host: File-based connectivity between a bank and a corporate client supporting multiple file formats and integration with ERP/TMS solutions.

Network Connectivity: File-based connectivity to dedicated financial messaging and transaction networks such as SWIFT, EBICS, ISABEL, etc.

Open APIs: Availability of open banking APIs and a developer portal to connect with clients and third party developers.

Back Office / Accounting / Servicing Systems

Core Banking: Current/demand deposit accounts, time/savings accounts, overdrafts, stop payments, internal transfers.

Payment processing and settlement: Broad set of processes associated with payment instructions, validation, enrichment, authorization, execution, repair, and reconciliation.

CRM/Client Lifecycle Management: Managing client interactions involved in establishing new accounts or services for new and existing clients and the ongoing maintenance of those accounts to support changes in authorized employees, limits, entitlements, and service options.

Account Analysis/Billing: A process that includes identifying customer relationships and associated accounts, along with tracking transactional activity and assigning associated fees for customer billing.

Risk/Compliance: A broad set of activities that encompasses exposure/limits management, credit risk analytics, KYC/AML, regulatory reporting, and asset/liability management.

Loan Servicing: The process by which a lender tracks loans and lines outstanding, and collects interest, principal, and other fees from borrowers.

Source: Celent analysis

APPENDIX 2: TECHNOLOGY PROVIDERS INCLUDED IN CELENT RFI ANALYSIS

Celent issued an RFI in May 2017 to 23 technology providers offering corporate banking solutions across several geographies. Nineteen vendors responded (Table 88).

VENDOR NAME	HEADQUARTERS	REVENUE ³ (USD)	WEBSITE			
INTEGRATED CORPORATE BANKING SUITES						
EDGEVERVE SYSTEMS (AN INFOSYS PRODUCT COMPANY)	Bangalore, India	\$10.2 BN	www.edgeverve.com			
FINASTRA	London, UK and Toronto, Canada	\$2.8 BN	www.finastra.com			
FIS	Jacksonville, FL, USA	\$9.2 BN	www.fisglobal.com			
FISERV	Brookfield, WI, USA	\$5.5 BN	www.fiserv.com			
INTELLECT DESIGN ARENA LTD	Chennai, India	\$0.136 BN	www.igtb.com			
NUCLEUS SOFTWARE	Noida, India	\$0.057 BN	www.nucleussoftware.com			
ORACLE CORPORATION	Redwood Shores, CA, USA	\$37.72 BN	www.oracle.com			
TATA CONSULTANCY SERVICES (TCS)	Mumbai, India	\$17.58 BN	Sites.tcs.com/tcsbanks/			
TEMENOS	Geneva, Switzerland	\$0.635 BN	www.temenos.com			
DIGITAL CORPORATE BANKING SOLUTIONS						
ACI WORLDWIDE, INC.	Naples, FL, USA	\$1.01 BN	www.aciworldwide.com			
BOTTOMLINE TECHNOLOGIES	Portsmouth, NH, USA	\$0.343 BN	www.bottomline.com			
CASHFAC	London, United Kingdom	\$0.013 BN	www.cashfac.com			
CGI	Montreal, Canada	\$2.6 BN	www.cgi.com			
COCONET	Erkrath, Germany	\$0.020 BN	www.coconet.de			
COMARCH S.A.	Krakow, Poland	\$0.280 BN	www.comarch.com			
COMMERCIAL BANKING APPLICATIONS AS (CBA)	Oslo, Norway	\$0.006 BN	www.cba.no			
Q2 SOFTWARE INC., DBA Q2	Austin, TX, USA	\$0.150 BN	www.q2ebanking.com			
Q2 SOFTWARE INC., DBA Q2 PELICAN (LEGAL NAME: ACE SOFTWARE SOLUTIONS)	Austin, TX, USA Iselin, NJ, USA	\$0.150 BN \$0.0075 BN	www.q2ebanking.com www.pelican.ai			

Table 13: Technology Providers Included in Celent RFI Analysis

Source: Company information, Celent analysis

³Revenue for most recently reported fiscal year.

LEVERAGING CELENT'S EXPERTISE

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.

SUPPORT FOR FINANCIAL INSTITUTIONS

Typical projects we support related to Corporate Banking 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 banking products and services. 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.

IT and business strategy creation. We collect perspectives from your executive team, your front line business and IT staff, and your customers. We then analyze your current position, institutional capabilities, and technology against your goals. If necessary, we help you reformulate your technology and business plans to address short-term and long-term needs.

SUPPORT FOR VENDORS

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

Product and service strategy evaluation. We help you assess your market position in terms of functionality, technology, and services. Our strategy workshops will help you target the right customers and map your offerings to their needs.

Market messaging and collateral review. Based on our extensive experience with your potential clients, we assess your marketing and sales materials — including your website and any collateral.

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