

CELENT

RETAIL BANKING CORE BANKING SYSTEMS: NORTH AMERICAN MID-LARGE BANK EDITION

2023 xCelent Awards, Powered by VendorMatch

Craig Focardi and Daniel Mayo

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EXECUTIVE SUMMARY

A traditionally slow-moving and staid market, core banking platforms in the last five to ten years are emerging as one of the key components of long-term transformation initiatives.

It used to be that one could revisit the market for core platforms every few years and find that not much had changed. Banks had little appetite to substantially evolve the capabilities of their core, and vendors were more than happy (and able) to provide solutions which worked around the constraints of heritage systems. Financial institutions, especially those in the largest asset-size tiers, were able to kick the can down the road.

While technology adaptations have allowed banks to stave off full-blown core replacement, some institutions are reaching the breaking point. The rise in digital engagement and other emerging ways of banking (e.g., open finance) continue to stress the ability of legacy platforms to deliver, while the cost burden of maintaining legacy cores grows unabated. For some institutions, the time to transform is now.

Transformation continues to take many new forms. Ripping out and replacing old cores is largely a thing of the past. Vendors are pushing for either progressive renovation or vertical implementations, where a bank only transforms a specific vertical technology stack. The cloud, componentization, and containerization are breathing new life into progressive renovation, where the traditional cost concerns of running multiple systems in parallel move to usage-based pricing and more favorable long-term economics.

With banking cores reaching a tipping point, vendors have been increasing the speed at which they enhance their solutions.

This report provides in-depth overviews of the main core platforms in the market today, helping financial institutions better understand the market for incumbent core platforms. Within each profile, Celent provides insight into functionality and features that are strong or present opportunities for improvement relative to the market. The report focuses on core banking systems for mid-large banks operating in North America that provide full banking platforms and have a minimum number of live clients in this region in the tier four or above banking segments (i.e., above \$20bn assets). These systems typically provide broad banking functionality to address the complex and diverse needs of major institutions operating in this region and size bracket.

Celent recently published the report [Continuous Digital Transformation in the Cloud: Next Generation Core Platforms that Will Future-Proof Banking](#), which examines the next-generation cloud-native providers, as well as [Retail Banking Core Banking Systems: International Edition](#), which covers platforms that target

banks in other regions. Note that while some vendors and platforms are present across these other reports, vendor evaluation for this report is weighted specifically to presence in, requirements of, and client feedback from the North America mid-to-large banking market.

Figure 1 shows the core banking platform vendors included in this report. This includes the main US core vendors for mid-large US banks as well as international vendors that have gained traction in the mid-to-large banking segment in recent years. Note that some vendors offer multiple platforms; these have been evaluated individually.

Figure 1: Core Banking Platform Vendors in this Report



Source: Celent

Celent also set out to award vendor platforms in this report based on its proprietary ABC scoring methodology. It includes (A)dvanced architecture, (B)readth of functionality, and (C)ustomer base and support. See the Methodology and ABC Analysis section for details. FIS solutions won XCelent awards for each of the ABC dimensions as shown below in Figure 2, being joint winners for Advanced Technology and Breadth of Functionality.

Figure 2: XCELENT 2023 Winners for North American Mid-Large Retail Core Banking Systems: FIS Awards



Source: Celent

Contrary to what some may think, there is no “best” core banking platform. Each has strengths and weaknesses, and decisions about which platform to deploy should be made based on geographic market, institution size, resource availability, current technology environment, internal culture and capabilities, and existing core vendor products. The ABC methodology provides a broad

market assessment based on Celent's market-wide criteria. Scores are often very close, and each platform in this analysis was deemed a competent offering. Each bank will need to decide whether a platform is right for its needs, and Celent's advisory and consulting work can provide assistance in this area.

OVERVIEW OF THE NORTH AMERICAN BANKING MARKET

The unique structure of the US banking sector has created an insular core banking systems market, but this has been opening to a broadening competitive landscape.

This report focuses on mid-large banks, which Celent defines as banks in Tiers 1 to 4 based on their institution's asset size (see figure 6), effectively including banks above \$20bn in assets. These banks tend to operate at least regionally across the US and are the largest providers of corporate, commercial, and business banking. By comparison, small banks (Tiers 5 and 6) and credit unions tend to be present predominantly in the retail and small business markets (although community banks may also provide commercial banking capability).

Figure 6: Celent's Tiering Structure for US Banks













| Celent Tier | Assets | Description | Illustrative Examples |
|--|-------------------|---|--|
| Tier-1 "Global's" | >\$500B | <ul style="list-style-type: none"> Large-scale banks with nearly national geographic coverage and complete balance sheet and product capabilities Seven (7) in the United States (12/31/22); national (digital), regional, state, and local presence in many markets IT budgets \$5 - \$15 billion; |   |
| Tier-2 "Super Regionals" | >\$100- \$500B | <ul style="list-style-type: none"> The largest regional banks (aspiring to be national) with excellent regional coverage and strong market share in select markets About 12 in the United States; state and local presence in 10-20 state markets; tend to dominate in their region IT budgets in the hundreds of millions to low billions |   |
| Tier-3 "Large Regionals" | <\$50- 99B | <ul style="list-style-type: none"> Regional or local universal banks with strong market positions in the markets they operate Former systemically important FI threshold; regulator, risk management, security, and capital requirements increase IT budgets in the tens to low hundreds of millions |   |
| Tier-4 "Regionals" | \$20-49B | <ul style="list-style-type: none"> Need to grow organically and/or through acquisition to achieve financial and operational economies of scale Begin shifting from line of business technology applications to enterprise-level applications IT budgets in the low to mid-tens of millions |   |
| Tier-5 "Super-Community Bank" | \$1-20B | <ul style="list-style-type: none"> Second largest tier segment based on number of institutions Also includes 270+ "large" credit unions Heavier reliance on large core banking system providers Regulatory, risk, capital, and IT requirements increase at \$10 billion in total assets |    |
| Tier-6 "Community Banks" and Credit Unions | <\$1B | <ul style="list-style-type: none"> Local financial institutions (banks, credit unions, and savings institutions) with nearly all customers located within the branch geographic footprint Buy (not build) virtually all technology Some technology vendors segment Tier-6 further at \$100M-\$1B and under \$100MM |   |
| Specialty institutions | | <ul style="list-style-type: none"> Consumer lenders (2,866) Agricultural (1,346) Independent mortgage banks (401) Other specialized (226) (including captive auto finance) Credit card banks (12) International (5) |   |

Source: Celent

While this tiering structure can be used across North America, the structure of the banking sectors is quite different between the US and Canada. Celent has tweaked the tiering approach for Canada to reflect its financial sector structure (see Figure 7), with this report focused on core banking systems for Tier 1–3 institutions. Both markets do have banking and credit union sectors, but the number of institutions and market concentration of the deposit base across institutions is notably different.

In Canada, while there are close to a hundred federally regulated bank and loan companies, the top six large domestic banks account for around 90% of total assets among Canada’s federally regulated deposit-taking institution base. Complementing this, particularly in Quebec, there are also a sizeable number of credit unions / caisses populaires institutions (with around 220 operating outside of Quebec). However, while a few of the largest credit unions have reached asset bases over \$10bn and the collective size of the Desjardins Group is en par with Tier 2 banks, the effective pool of mid-large deposit-taking institutions in Canada is relatively small (~20).

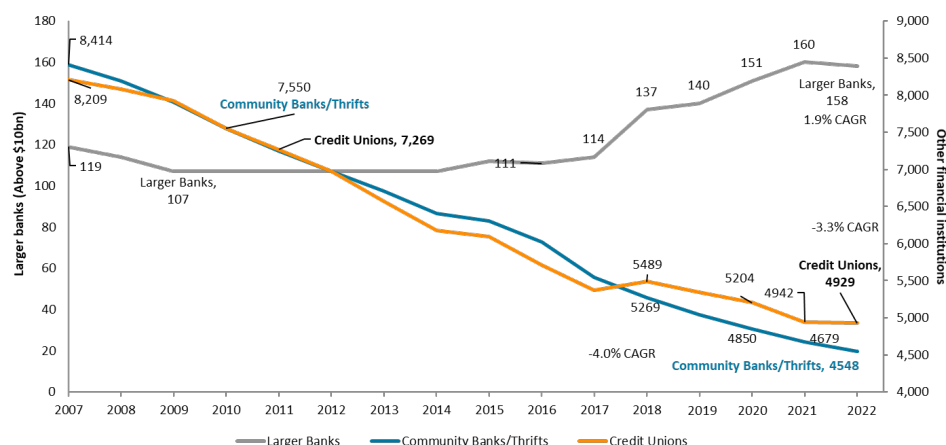
Figure 7: Celent’s Tiering Structure for Canadian Financial Institutions

| Celent Tier | Assets | Description | Illustrative examples |
|--|-----------|---|---|
| Tier-1 “Global’s and Nationals” | >\$500B | <ul style="list-style-type: none"> Large scale banks with nearly national geographic coverage and complete balance sheet and product capabilities Five tier one banks in the Canada (12/31/22); national (digital), regional, state, and local presence in many markets IT budgets in \$1bn - \$5 billion; |   |
| Tier-2 “Super Regionals” | \$50-499B | <ul style="list-style-type: none"> Small segment in Canada with two banks (National Bank and HSBC Canada) and one Caisse Populaire Group (collectively) IT budgets low hundreds of millions to \$1bn |   |
| Tier-3 “Regionals and Top Credit Unions” | \$10-49B | <ul style="list-style-type: none"> Regional or local universal banks/ Credit Unions with strong market positions in the markets they operate 7 banks and circa top 10 Credit Unions IT budgets in the tens of millions to low hundreds of millions |    |
| Tier-4 “Large Foreign Subsidiaries and Large Credit Unions” | \$1-9B | <ul style="list-style-type: none"> Includes large Credit Unions (circa from top 10 – 40) Also includes most large foreign-owned subsidiary banks operating in Canada (outside of HSBC Canada) Just under 50 institutions IT budgets in the low millions to tens of millions |    |
| Tier-5 “Community Banks and Credit Unions” | \$<1B | <ul style="list-style-type: none"> Predominantly Credit Unions, although some small foreign subsidiary banks |   |

Source: Celent

US Banking Institution Trends

While the US market is larger than Canada given the banking populations and GDP sizes, the number of deposit-taking institutions is a couple of orders of magnitudes higher, with close to 10,000 financial institutions. In terms of number of institutions, this is split approximately 50:50 between credit unions and banks / savings banks (with savings banks around 6% of total institutions).

Figure 8: Number of US Financial Institutions, 2007–2022

Source: FDIC, CUNA, CUNA Mutual Group, Celent analysis (December 31, 2022)

However, as shown in Figure 8, while the number of institutions is numerous, the number of financial institutions has decreased significantly over the last two decades, with a negative compound growth rate of 3.7% over 2007 to 2022, continuing a negative trend seen since the 1980s. This is driven by both a decline in the number of community banks, thrifts, and credit unions, albeit with a slightly stronger decline of community banks/thrifts (-4.0% versus -3.3% for credit unions). In contrast, the number of larger banks (above \$10bn assets using FDIC definitions) has risen over the period, particularly since 2017. This has been driven chiefly by the growth of commercial banks, with the number of large savings institutions declining. The primary driver here is banks looking to expand through acquisition, with consolidation outstripping new entrant growth in most years.

While the number of larger banks is small relative to the overall number of institutions, because of their respective size these banks still represent a significant proportion of the banking market. The Tier 1 banks have around 35% of total domestic deposits, with Tier 2 having around 31%, and Tier 3 and 4 banks having around 18% collectively (FDIC data as of end 2022). Collectively, mid-large US banks have around 85% of overall domestic deposit base (including retail and corporate). The Tier 5 and 6 segments therefore represent a very long tail of institutions.

North American Core Banking Systems Vendor Landscape

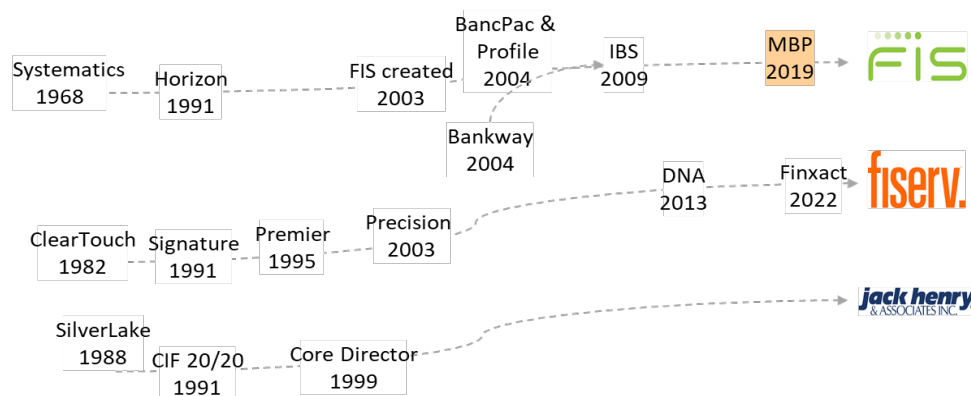
From a global perspective, the core platform market in the US has traditionally been one of the slowest moving in recent decades, with many mid-large banks running decades-old systems that have had a lot of customization built around them. This has generally made it challenging for banks to upgrade and work with modern platform equivalents, even when running on (at least initially) vendor-built platforms. To understand why, it is worth reviewing a bit of the market dynamics of the previous decades.

The market for third party software in the US started earlier than in many countries, with mainframe-based banking platforms appearing in the early 1960s

and 1970s. Whereas other regions such as Western Europe relied on proprietary in-house core platforms, banks in the US were relying on the likes of HPE (Hogan), FIS (Systematics), IBM, and others. While these vendors were able to establish and maintain significant domain expertise, over time they reinforced some of the many challenges inherent to legacy systems in the region. The size of the US market, given the high number of institutions, did support entry of many new CBS entrants (particularly targeting lower tier institutions), but also entrenched early leaders who were able to scale to meet the significant servicing and support demands of the US market, with its complex regulatory demands. This created an environment where competitor CBS products were more often acquired than left to grow.

The number of firms offering core processing software and services in the United States has decreased substantially over the years, from more than 50 in the early 90s to a concentration to the “Big 3” today (FIS, Fiserv, and Jack Henry & Associates), with CSI (NuPoint) and Finastra (FusionPhoenix) also notable US domestic providers (i.e., with platforms developed for the US market), although these latter platforms are largely targeted towards the lower Tier 5 and 6 banking tiers.

Figure 9: Emergence to the “Top 3” US Core Banking System Incumbents



Source: Celent

Fiserv pioneered the growth-by-acquisition strategy in the 1980s and 1990s, acquiring more than 90 businesses (including multiple core banking system vendors), with DNA and more recently Finxact (a next-gen, cloud-native core provider) of note. FIS, a market consolidator that began life in the adjacent title insurance industry, led the way in bank system acquisitions during the 2000s—starting in 2003 with its acquisition of Alltel Information Services (provider of a large bank CBS called Systematics) and capped in 2009 by the acquisition of Metavante (the provider of the leading community bank CBS called IBS), which had also acquired Bankway from the Kirchmann Group). That said, note that its most recent platform (Modern Banking Platform, aka MBP) is unusual in this respect, being developed internally within FIS rather than acquired (see Figure 8). While Jack Henry & Associates has also developed its core portfolio through acquisition, in contrast to Fiserv and FIS its acquisitions have largely been complementary rather than additive (i.e., systems outside the CBS) since 1999. However, the competitive landscape has changed, particularly in the last five years. This is due to two trends. First, a few of the leading “international” core

banking platforms providers have started to get credible traction in the market. Ironically, while the US is one of the most attractive markets for CBS providers given the large number of institutions and size of the banking sector, it has proved inversely challenging for non-US heritage providers to get meaningful presence (particularly outside of foreign-owned bank institutions / subsidiaries). While partly driven by localization challenges of catering for US banking products and compliance at a state level, the network effect advantages of incumbents from delivery, service, and pricing perspectives have made it difficult for non-US providers to get a critical mass to be competitive and credible alternatives. Adding to this challenge is the cost and complexity of CBS replacement, which had led many FIs to hold on to their legacy systems.

While some international CBS providers have expanded client bases through acquisition (e.g., Temenos with Trinovus and Finastra (created through the merger of Misys and D&H)), a few providers have persevered, often building on relationships with parent companies of foreign-owned bank subsidiaries to now have obtained US client bases that allowed them to be considered as realistic alternatives to users of incumbent US provider core systems.

Secondly, the emergence of cloud-native, API-first, next-gen core banking vendors has provided an alternative option for larger banks—both for supporting greenfield direct banks and as a path to progressive modernization of the core platform and new development approaches. These vendors tend to provide narrower core systems functionality around the deposit product engine rather than broader banking platforms, so they are not yet quite complete replacement alternatives for the traditional CBS covered in this report. However, because some notable Tier 1 and 2 institutions are working with them, next-gen core banking vendors are a legitimate threat to incumbent CBS vendors and forced them to respond. For example, Fiserv acquired Finxact, and to a large degree the increasing success of both the next-gen and modern traditional international vendors was one of the catalysts for FIS to develop MBP. These next-gen vendors are covered in Celent's [Continuous Digital Transformation in the Cloud: Next Generation Core Platforms that Will Future-Proof Banking](#).

METHODOLOGY AND ABC ANALYSIS

For this report, Celent approached the top modern traditional core vendors targeting North American institutions. Seven vendors submitted the necessary information, client references, and met inclusion criteria for in-depth review and evaluation of 10 core system platforms.

Inclusion Criteria and Methodology

This report includes both the main incumbent US-based core banking providers and “international” vendors that provide platforms designed to support multiple geographies. For vendors offering multiple platforms, evaluation has been made for individual CBS. However, for inclusion in this mid-large bank report for North America, Celent has deliberately restricted inclusion to platforms where vendors have a minimum of five live banking clients that are Tier 4 or above in size (vendors ideally have clients in multiple tiers).

It should be noted that the scalability potential of many platforms that will be covered in the forthcoming Celent ABC report on North American community banks (including core products from vendors such as CSI, Finastra, Fiserv, and Jack Henry) mean that some could certainly support mid-tier institutions; however, a strong focus on client feedback for evaluation in Celent’s ABC methodology meant these platforms do not meet the inclusion criteria for this report. Note that in addition to the seven vendors who agreed to participate, we contacted others which for a variety of reasons chose not to take part in the process. This includes platforms such as Temenos Transact and DXC Hogan.

Inclusion in this report required full participation in the study. This included detailed responses to an in-depth RFI covering components and various subcomponents summarized in Table 1, as well as briefings, demonstrations, and validation and feedback with several client references (covering technology, integration, implementation, and post-implementation aspects).

Table 1: Components of Celent’s Methodology

| Criteria | Subcriteria |
|---------------------|------------------------------------|
| Advanced Technology | System architecture |
| | Responsiveness |
| | Deployment options |
| | Standards/emerging business models |
| | Data management |
| | Integration methods |

| | Scalability |
|---------------------------------------|--|
| Breadth of Functionality | Functional availability User interface Customization Global regulations Internationalization Product management |
| Customer Base/Depth of Service | Large clients Midsize clients Small clients New deals Total clients Reference comments # of professional services staff available Quality of training offered Implementation capabilities SLA feature availability Disaster recovery process |

Source: Celent

Analysis is based on granular scoring across detail provided from the multiple information sources to compare vendors, using predominantly objective evaluation across comparable areas and applying pre-defined assessment frameworks (where this made sense). This was complemented by independent appraisal by Celent analysts (where appropriate) and included vendor client (bank) feedback both to validate vendor-provided information and as a significant direct input into the final scores. Overall scoring is based on Celent's weighting of the importance of each scoring criterion. Note that weighting, particularly around functionality and client references but also technology requirements, was specific to North American mid-large banks, and thus evaluation and positioning of vendors also covered in other ABC reports (such as [Retail Banking Core Banking Systems: International Edition](#)) may be different.

Vendor Summary

Evaluation was conducted on the following vendors and platforms (Figure 10). This covered seven vendors, across ten different platforms.

Figure 10: North American Core Banking System Vendors in this Report

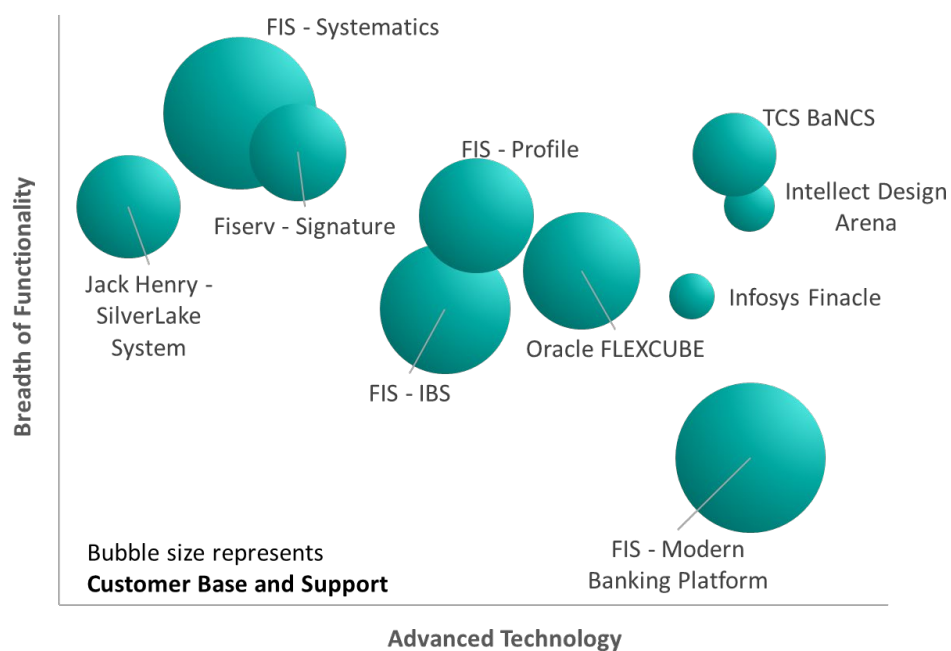
| Company | HQ | Platform | NA mid-large clients |
|------------------------|------------------|-------------------------|----------------------|
| FIS | Jacksonville, FL | IBS | 20-50 |
| | Jacksonville, FL | Modern Banking Platform | 10-20 |
| | Jacksonville, FL | Profile | 10-20 |
| | Jacksonville, FL | Systematics | 20-50 |
| Fiserv | Milwaukee, WI | Signature | 10-20 |
| Infosys | Bangalore, India | Finacle Core Banking | 5-10 |
| Intellect Design Arena | Chennai, India | Intellect Digital Core | 5-10 |
| Jack Henry Associates | San Diego, CA | Silverlake | 5-10 |
| Oracle | Redwood City, CA | Flexcube | 10-20 |
| TCS | Mumbai, India | TCS BaNCS | 5-10 |

Source: Vendor RFI, Celent analysis

ABC Vendor View and XCELENT Awards

This resulted in a score for each vendor across the three main criteria shown in Table 1, with final positioning shown in Figure 11.

Figure 11: ABC Analysis – Retail Banking CBSs: North American Mid-Large Banks



Source: Celent

Interestingly and reflecting the evolution of the core banking marketplace described in previous chapter, there is no one clear overall platform based on aggregate performance across all three axes. Based on total evaluation across the metrics, all of TCS Bancs, FIS Systematics, and FIS Modern Banking Platform could be considered leading platforms, with Oracle FLEXCUBE and FIS Profile also very strongly positioned based on overall scores totals across the three dimensions.

FIS won XCelent awards for each of the ABC dimensions shown below.

Figure 12: X CELENT 2023 Winners for North American Mid-Large Retail Banking Core Systems: FIS Awards



Source: Celent

For the first time in a Celent CBS vendor report, the XCelent award for Customer Base and Support has been given to a company rather than to a specific platform, based on the combined evaluation of multiple CBSs evaluated in this report. The winner is FIS. In terms of both client base and client reference feedback, FIS was the strongest performer across all four FIS platforms evaluated, suggesting its depth of service and support, in particular, is related to its overall company capability rather than being platform-specific. FIS was the sole winner for this award, and joint winners for Advanced Technology for its Modern Banking Platform, along with Intellect, and for Breadth of Functionality for Systematics, along with TCS BaNCS.

Celent Technical Capability Matrix

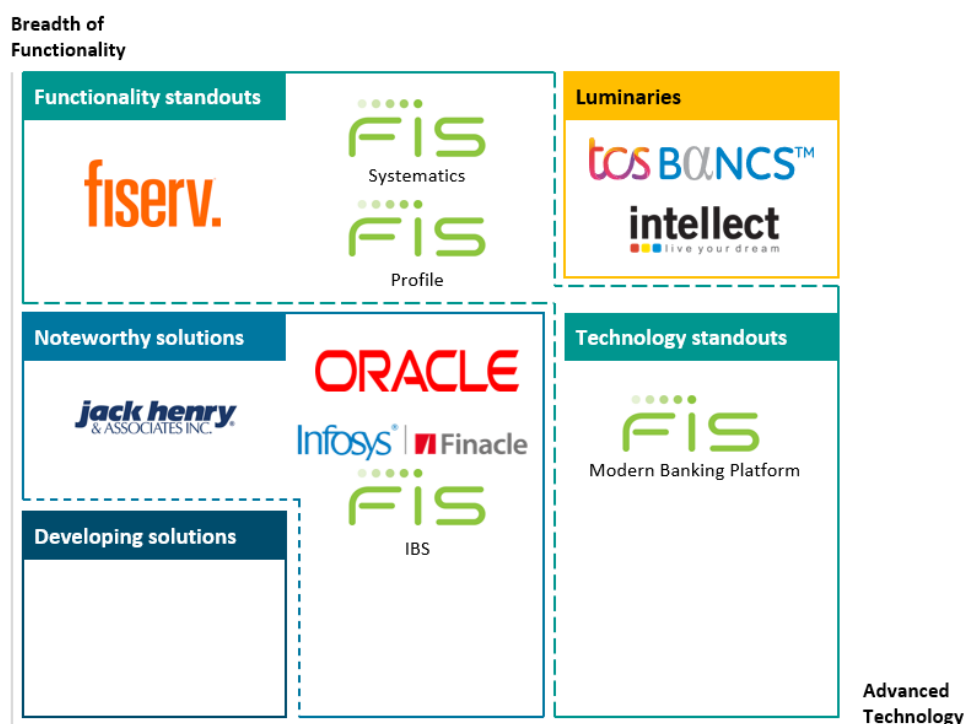
New to Celent's solution reports is the Technical Capability Matrix. We've placed each solution into one of five categories based on the sophistication and breadth of its technology and functionality (i.e., plotting the A and B dimensions). Solutions are not ranked within the assigned category; they are listed alphabetically.

The five categories are:

- I. **Luminary:** Excels on both Advanced Technology and Breadth of Functionality.
- II. **Technology Standout:** Excels in Advanced Technology but doesn't yet have as many features as leading competitors (low on Breadth of Functionality). Often newer, these solutions typically have chosen a focused set of functionalities to begin their journey.
- III. **Functionality Standout:** Excels in Breadth of Functionality, but the technology isn't as advanced as leading competitors. Often more established, these solutions have built out a robust set of features with technology that may not be cutting-edge.

- IV. **Noteworthy Solution:** Relatively lower on both dimensions, yet still worthy of consideration by some financial institutions.
- V. **Developing Solution:** Typically, new to the market and low on either Advanced Technology or Breadth of Functionality. Has the potential to mature into a more robust offering over time.

Figure 13: Celent Technical Capability Matrix



Source: Celent

On this basis, the platforms deemed luminaries are international CBS vendors, with platforms that combine strong technology architecture with a breadth of functionality. FIS Modern Banking Platform is deemed a technology standout. However, given FIS’s client base and experience in US banking, with both Systematics and Profile offering deep functionality, Modern Banking Platform could shift into the Luminary bracket as FIS develops its functionality breadth and depth.

The platforms awarded Functionality Standouts (Fiserv, FIS Systematics, and FIS Profile) have a longer history in the North American market. They have established a broader client base in the mid-large banking segment, which has allowed both the creation of, and importantly evidence for, rich functionality for this market. That said, the remaining vendors that met inclusion criteria for this report all have Noteworthy Solutions. Jack Henry’s Silverlake platform also has rich functionality, with a strong base in the Tier 5 segment that it has been extending into the mid-tier banking segment. Oracle FLEXCUBE offers a strong all-around platform, offering functionality, sector client experience, and technology architecture that is benefiting from the technology strength (particularly in cloud/SaaS) of its parent. FIS IBS offers strong functionality for banks looking for a managed/hosted offering. Infosys Finacle offers a strong

platform that has just started to get critical traction in this market, while benefiting from being one of the strongest platforms for the international market.

Considerations

This analysis is based on Celent's own assessment criteria, which considers the wider needs of the North American market as a whole. Platforms included in this report all had strengths and weaknesses, and each platform could be a good fit for an institution depending on its specific requirements and firmographics.

Individual banks should use the profiles in the context of their own specific situation. CBSs positioned lower in Celent's ranking may be an excellent fit for a large number of institutions for various reasons, such as price, business-specific functionality, existing technology environments, geographic footprint and expertise, or customer segment focus. The ABC analysis chart should be used in conjunction with the vendor-specific profiles.

Additional considerations:

- Score differences have been accentuated in the ABC analysis chart, with scales zoomed in to aid differentiation. It should be noted that all solutions scored well, being at least Noteworthy Solutions, and should be considered strong platforms.
- Institutions reading this report should consider the specific needs of their institution and market/customer segments. Clients can utilize our advisory service or consulting services for deeper analysis.
 - Institutions seemingly in the middle or bottom of the pack may be excellent candidates based on a bank's needs.
 - Reweighting certain characteristics (cloud-native, on-premise only, etc.) could move laggards into a higher position.
- The mix of vendors and platforms includes Celent subscribers and nonsubscribers. We make no distinction in how each are presented, nor does it affect our ratings.
- Due to the strict inclusion criteria for this report (particularly client references and full RFI response) the ABC analysis chart does not provide a complete view of the vendor landscape. Excluded platforms may be appropriate for consideration by certain banks, and while Celent was not able to obtain in-depth information for the purposes of this report, clients can still utilize our advisory service for opinions on these vendors/platforms.

About the Profiles

Each profile gives an overview of a vendor and its core banking solution. Celent developed the list of vendors based on our knowledge of the market and from our interactions with banks and other vendors looking at core conversions and other markets. Analysts built each profile in two stages:

Phase 1: This was the information-gathering stage. We asked vendors to fill out a detailed survey document. Then we went through a live demo and asked questions about the submitted material. Finally, we contacted reference clients

to cross-check vendor claims as well as obtain a “boots on the ground” view of the product.

Phase 2: We shared with vendors their draft profiles and asked them to check facts and approve the content. Celent only makes changes to factual errors during transcription. Subjective disputes are not considered.

How Banks Should Use This Report

This report is the result of an exhaustive review of widely available CBS platforms in the market today. The methodology of this report involved making assessments and assigning ratings to many evaluation points across the spectrum of Celent’s ABC methodology.

Contrary to the marketing claims of many CBS platform providers that their system is the “best” in the industry, Celent finds every platform in this report excellent in certain areas. On the one hand, this result is not a surprise, as intensified competition between CBS platform providers—predicated on their interest in cross-selling a new client bank a wide range of ancillary products and solutions—has led to a maturing of CBS platforms.

On the other hand, it would be easy—but wrong—to conclude that since nearly all of the CBS platforms performed well in the review that any of them will perform well at an institution. This would be an incorrect reading of the report and could lead a bank CIO down the road toward selecting and implementing a new CBS platform that ultimately does not justify the high cost and management investment required.

The correct question for a bank to ask is, “What is the best CBS platform for my institution today and for the future?” This broader question (how the strengths and weaknesses of a particular CBS platform measure up to a bank’s preferences and priorities) speaks to the overarching role of solution fit in guiding a bank toward one CBS platform or another.

Our intention for this report is to enlighten bankers to rise above the occasional hype and frequent superior claims of one solution or another and reframe the conversation in terms of how a bank’s strategic needs and operational imperatives match up with the demonstrable qualities of each CBS platform under consideration.

VENDOR PROFILES



This section provides greater detail on the vendors and their platform offerings. While this offers a deeper overview of each platform as well as Celent's opinion, readers should consult Celent's digital platform RFX for even greater granularity.

FIS: IBS



FIS is a public company headquartered in Jacksonville, Florida. It is a leader in technology, solutions, and services, with presence globally across more than 50 countries in North America, Latin America, Europe, and Asia Pacific regions. The company provides a broad array of capabilities across the banking, merchant, and capital markets sectors through an array of mission-critical platforms and processing solutions to meet industry-specific needs of different segments and client types.

Within the banking sector, FIS offers multiple core banking systems, providing a range of platforms for different types and sizes of institution. IBS (Integrated Banking Solution) is a banking platform designed to support institutions looking for a scalable platform operated on a managed basis within the US market. It is particularly suited to institutions in the community and regional banking market with a scalable platform supporting clients up to \$200 billion in assets. Within FIS, there is a large consulting, onboarding, and professional services team with great experience and deep expertise focused on driving client growth, efficiency, and market responsiveness.

Table 1: FIS Snapshot

| Company Info | |
|--|---------------------------------|
| Year Founded | 1968 |
| Number of Employees | 69,000 |
| Revenues (USD) | 14.5 billion |
| Financial Structure | Public company NYSE: FIS |
| Product Info | |
| Product Name | IBS |
| VendorMatch Link | [FIS IBS] |
| Year Originally Released / Deployed | 1980 / 1980 |
| Current Release /Date of Release | IBS.2023.1.0219 / February 2023 |

| | |
|------------------------|---|
| Target Market | IBS is a hosted core processing system easily scalable to meet the needs of banks from \$500M up to \$200B in assets. |
| Installed Base | 164 |
| Notable Clients | Northern Trust, City National Bank, Synovus Bank, Wintrust Financial, East West Bank |
| Vendor Events | The vendor offers an annual user conference or customer event. |

Source: Vendor RFI



IBS delivers a rich set of business capabilities for community, mid-tier, and large regional banks to support, retain, and grow their retail and commercial customer base.

— FIS IBS

Platform Summary

IBS is arguably the CBS platform that created the modern bank IT outsourcing business. The origins of IBS date back to the early 1960s when Milwaukee-based Marshall & Ilsley Corporation set out to leverage its investment in a mainframe-based account processing system to serve the processing needs of its correspondent banks. While IBS has been continually extended and architecturally refined over the years—to the point where it now features more than *40 million* lines of code—it still retains its original character as a COBOL-based system built for a highly scalable outsourcing environment.

Aside from the continual addition of new features and functionality to meet the needs of a wide range of banks, the “secret” to the platform’s historic success is its highly parameterized structure, enabling banks to turn features “on” and “off” while allowing for fine-grained system control of the banking accounts services. This, in turn, allows FIS to run a single instance of IBS to serve the processing needs of its several hundred banks.

Key Features

IBS operates on a single processing platform to manage and maintain deposit, loan, and customer account portfolios. It is parameter-driven with a comprehensive capability for defining product attributes and processing options. The core platform is surrounded by an integrated sales, origination, and servicing suite supported by a rich array of marketing, business analytics, and relationship management capabilities. Furthermore, IBS is deeply integrated with a broad array of FIS solutions spanning capabilities such as digital banking, payments, fraud, image, document management, and many more.

Table 2: Core Component Snapshot

- = Base Core Module (Available out of the box)
- = Additional Core Module
- = Composable module from ecosystem partner
- = Additional Module – different code base, preintegrated
- = Additional Preintegrated Partner Module
- = Additional Module - different code base
- = Additional Partner Module
- = Not available / Not applicable / Additional Module - Non-Partner

| | | |
|-----------------------------|--|------------------------------------|
| Module Name = In Production | | Module Name = Supported but not in |
|-----------------------------|--|------------------------------------|

| Deposits | | |
|--|---|--|
| ● Retail Deposits | ● Commercial Deposits | |
| Retail Lending | | |
| ● Credit Card Originations | ● Consumer Loan Origination | ● Mortgage Loan Origination |
| ● Credit Card Servicing | ● Consumer Loan Servicing | ● Mortgage Loan Servicing |
| ● HELOC Origination | ● HELOC Servicing | |
| Commercial Lending | | |
| ● Small Business Loan Origination | ● Commercial Loan Origination | ● Complex Loan Origination |
| ● Small Business Loan Servicing | ● Commercial Loan Servicing | ● Complex Loan Servicing |
| Other | | |
| ● Treasury Management | ● Merchant Services | ● General Ledger |

Source: Vendor RFI

The IBS product management team works closely with IBS business executives to prioritize new features based on compliance requirements, sustainability requirements, client commitments, and strategic initiatives. The work is prioritized as part of a three-month program increment.

Current development plans include a program to refresh the IBS user interface (UI) to utilize the most current FIS UI presentation framework. This will provide a responsive UI (supporting both traditional desktops/laptops as well as tablet form factors) while also allowing the applications to operate across various web browsers.

In terms of R&D expense over the past two years, FIS typically reinvests around 7–8% of global revenue in R&D of total revenue attributed to this solution. The vendor offers an annual user conference or customer event. IBS also supports a client community through regional user groups and national client advisory boards.

Table 3: Key Features

1



Architecture Overview

The IBS platform is a mainframe-based core account processing platform with integration to many other technologies. Java-based APIs, BaaS, and banker/client interfaces. Oracle and Java systems for complete customer views and ETL for data warehousing capabilities.



2 Support for Cloud

IBS is a hosted platform in the FIS Private Cloud, so it does not provide cloud support in the traditional sense. However, it can achieve some benefits of a cloud environment, such as scalability and cost optimization.



3 APIs and Integration

FIS’s strategy is to API-enable all its products and capabilities, exposed via its FIS Code Connect API Gateway platform and accessible via the Internet or private network. Where applicable, data can also be delivered via real time events, with both Webhooks and Kafka supported. Batch integration is offered for other suitable use cases.



4 System Flexibility

IBS is highly configurable by the client, which makes changing the system a simpler task. For example, new products can be established by the bank without FIS intervention, using configuration tools. If new functionality is needed that is currently not available, the IBS change migration system and support structure surrounding it ensure code changes are made without disruption to clients and their unique configurations.



5 Real Time Capability

IBS is a batch system which leverages intraday memo posting. While not event-driven, it can create events in real time within seconds of the underlying deposit, loan, customer, or card activity occurring.



6 Data Models

The data model is custom to IBS’s core account processing platform. The client cannot change the core data model. The client would request an enhancement and IBS developers would make the changes. FIS does offer their clients the ability to capture extended data in the Customer Management solution as well in the Branch/Sales and Service solutions through an advanced authoring and configuration tool. This is offered as a self-service capability.

Source: Vendor

ABC SUMMARY



Advanced Technology



Breadth of Functionality



Customer Base

CELENT OPINION

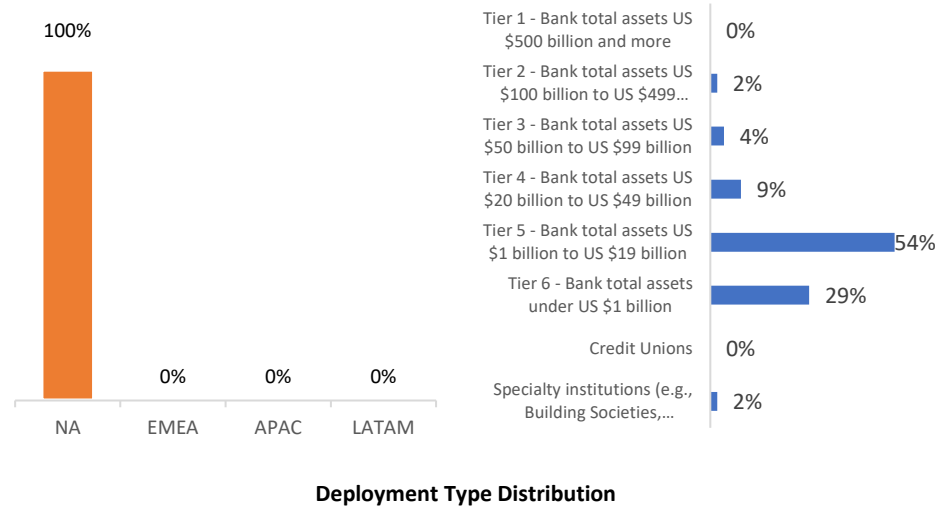
IBS continues its strong position as a hosted universal core banking platform with a long history serving the broad functional needs of community banks to large regionals up to \$200 billion in assets. While the platform itself dates back many years, FIS has continued to modernize it to provide to banks a rich, scalable, and flexible platform. IBS sets itself apart with the ability to scale up and down to the functional needs of a variety of different institution types, as well as the efficiencies achieved through its hosted delivery model in the FIS Private Cloud. It also provides a significant amount of parameterization out of the box to allow institutions, even in a hosted environment, to tailor the platform to their needs.

IBS is surrounded by some of FIS’s enterprise technology assets and integrated through FIS Code Connect APIs, significantly extending and enhancing the value of the platform. Banks looking for public cloud capabilities on more modern programming languages might explore other options, but those looking for a secure, reliable, and parameterized system with significant functional coverage will find IBS more than ready.

Customer Base

FIS has 164 total customers globally.

Figure 1: FIS Client Base by Geography, Institution Type, and Deployment Mode



Source: Vendor RFI

Platform Details

The IBS platform is a mainframe-based core account processing platform with integration to many other technologies. Java-based APIs, BaaS, and banker/client interfaces. Oracle and Java systems for complete customer views and ETL for data warehousing capabilities.

Technology details for IBS are provided in Table 4.

Table 4: Technology Options

Code Base

Core technology: .Net: 1%; C: 1%; Java: 30%; JavaScript: 5%; Other (COBOL is the main language used for the core account processing platform.): 63%

| | |
|-----------------------------|--|
| Databases | DB2, Oracle, Sybase |
| Integration Methods | <p>Web services; XML, not through web services; HTML; HTTP; RESTful HTTP-style services; JSON format; MQSeries, JMS, or similar queue technology; Custom APIs; Flat files</p> <p>Public API integrations: Not applicable</p> <p>FIS provides extensive consulting and professional service offerings to support clients with open API or event-based integrations.</p> |
| Deployment Models | <p>Private cloud</p> <p>IBS is a fully outsourced solution that is run within the FIS Private Cloud. Therefore, IBS clients do not need their own technical architecture or staff to support. It is multi-tenant and highly scalable.</p> <p>FIS also offers clients a managed IT service where they can extend what they run and support in their FIS Private Cloud to include other non-FIS solutions that the client may run on premise/in house today. This helps clients to further alleviate their IT support costs.</p> |
| Public Cloud Options | None |

Source: Vendor RFI

The platform operates on batch basis, although it supports memo post. While not event-driven, IBS can create events in near real time spanning deposits, loans, customer, and card activities.

Table 5: Cloud Support

| | |
|---|----|
| Microservices Architecture | No |
| Stateless (apps can scale independently) | No |
| Container Orchestration (Kubernetes) | No |
| Service Mesh Support (e.g., Istio) | No |

Source: Vendor RFI

Additional Functionality

Table 6 shows IBS's functionality and production status of key features for core banking systems.

Table 6: Ancillary Modules Support

- = Available out of the box
- = Additional Core Module
- = Composable module from ecosystem partner
- = Additional Module – different code base, preintegrated
- = Additional Preintegrated Partner Module
- = Additional Module - different code base
- = Additional Partner Module
- = Not available / Not applicable / Additional Module - Non Partner

Module Name = In Production | Module Name = Supported but not in production

| Channels | | |
|------------------------------------|-------------------------------|--|
| ● Branch/Teller | ● Digital Banking | ● Digital Onboarding |
| ● Call Center | ● ATM | |
| Commercial and Retail Function | | |
| ● Currency Management | ● Imaging/ECM Warehouse | ● Data Layer (data lake, data streams, etc) |
| ● CRM | | ● Data Warehouse |
| Cards & Payments | | |
| ● Bill Pay | ● Payments Engine | ● ACH Origination |
| ● Card issuing | ● P2P | ● International ACH (IAT) |
| X SEPA | ● Stop Payments | |
| Risk and Compliance | | |
| ● Asset Liability Management (ALM) | ● Anti Money Laundering (AML) | ● Compliance: Know Your Customer (KYC), OFAC |
| ● Fraud Detection | ● Risk Analysis and Reporting | |

Source: Vendor RFI

Data and Integration

FIS's data model is proprietary.

Table 7: API Integration Details

| Function | Approach |
|--------------------------------------|---|
| Approach to Integration | FIS's strategy is to API-enable all its products and capabilities, exposed via its FIS Code Connect API Gateway platform and accessible via the Internet or private network. The IBS core is fully API-enabled today. Where applicable, data can also be delivered via real time Events/Webhooks and Kafka is supported. Batch integration is offered for other suitable use cases. |
| % of Platform Exposed as APIs | 100 |
| API Management | Yes |

Source: Vendor RFI

Configuration

IBS and their entire client base are always using the most current version. New product capabilities are introduced regularly—usually every three months and sometimes even monthly. There is one code base that is running for all clients in a multi-tenant environment within the FIS Private Cloud. The change tools and backout procedures ensure code is current and functioning properly.

IBS is highly configurable by the client, which makes changing the system a simpler task. For example, new products can be established by the bank without FIS intervention, using configuration tools. If new functionality is needed that is currently not available, the IBS change migration system and support structure surrounding it ensure code changes are made without disruption to clients and their unique configurations.

Bank Control and Enterprise Org and Product are their product administration mechanisms. Clients use these tools to set up new products and change existing products that align with their specific institution's needs. Those changes are mostly self-service and require little or no involvement from FIS. Most third party integration requires the institution to work with IBS and the third party vendor to implement the necessary integration; however, this has decreased dramatically with the launch of FIS Code Connect and their marketplace of Open APIs in late 2018 and Events in 2020. Clients are now enabled with a developer tool kit that radically simplifies their ability to integrate third party solutions with the IBS core platform.

Table 8: Continuous Integration (CI) and Upgrading

| CI/CD | |
|--|---|
| Support for CI | Yes |
| Support for Continuous Delivery or Productization | Yes |
| CI Tools | FIS has many tools and environments to do continuous development and integration. Developers and teams across the company can develop and test together or apart in many different systems. |

Source: Vendor RFI

Pricing

Table 9: Pricing Models

| | |
|---------------------------------|--------------|
| Pricing Models Available | Not provided |
|---------------------------------|--------------|

Factors Used to Determine Pricing

Usage-based factors: Not provided

Tier-based factors: Not provided

Source: Vendor

PATH FORWARD

Migrating to a core banking system no longer requires full open heart surgery, and banks don't need to take the full banking CBS with the shift to modular approaches. However, banks should select a platform and vendor based on long-term partnership fit.

The architecture development of the modern traditional CBS platforms highlighted in this report to modular, component-based, API-first, and cloud-enabled or cloud-native deployment significantly broaden the migration options available to banks. These offer the ability to start with priority business areas and operate with lower deployment costs, allowing banks to take a phased approach to overall platform implementation and decisions around running old and new CBSs concurrently to allow progressive renovation and migration.

Significantly, the willingness of most vendors to shift toward a more open, ecosystem approach to platforms means that banks are not necessarily tied into a one-platform decision when selecting a CBS provider—and best-of-breed approaches are an option. However, for most banks, selecting a new banking platform provider should be seen as part of an application and vendor consolidation strategy. Banks need to move toward use of a smaller number of strategic business platforms, rather than support the proliferation of applications that exists in most established institutions today. As such, selecting a CBS provider should still be one of most important business and technology decisions a bank makes.

Recommendations

As you consider your path forward, Celent offers the following recommendations:

- While the impact of Moore's law means system speeds for supporting bank workloads is no longer the prevailing constraint it was when older CBS platforms were developed, scalability and operational resilience remain essential hygiene factors. A CBS must be able to support possible exponential demands in transaction processing from digital banking and open banking, and also support data insight demands for the likely shift to data-oriented banking service propositions. Banks need to look for platforms that can scale in real time on demand (i.e., are truly cloud-native) to balance scalability, resilience, and cost. This does not necessarily mean banks need to deploy on public cloud now, but the ability to shift workloads in the future to public cloud will be likely be critical.
- Most "modern traditional" platforms offer the benefit of deep business functionality with modern technology architectures. Richness of functionality—particularly in breadth of ability to service across the bank and

meet local product needs—is valuable in driving shorter deployment times, allowing access to best practice processes and facilitating a platform strategy. However, configurability, flexibility, and the ability to support ongoing product innovation will be more significant in the long term. Platforms that support continuous innovation, allowing both business and IT to drive development by the bank, will have an advantage here.

- Selecting a CBS has been made easier by the shift to cloud, in that it should be relatively straightforward for a vendor to provide a mock, but actual, operational core system for evaluation purposes. Institutions should test configurability, asking vendors to replicate existing capabilities but also ensuring they look to use the platform themselves.
- It should be remembered that a new CBS shouldn't just replicate existing products and services. Core migration should be part of a broader bank digital transformation program, with a focus on product rationalization, process re-engineering and optimization, and a shift toward the digital banking target operating model.

No one knows exactly what the future will bring. Choosing a CBS that gives you the agility to meet future needs will position the bank well in a rapidly changing world.

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Typical projects we support 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.

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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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For more information please contact info@celent.com or:

Craig Focardi
Daniel Mayo

cfocardi@celent.com
dmayo@celent.com

Americas

USA

99 High Street, 32nd Floor
Boston, MA 02110-2320

[+1.617.262.3120](tel:+1.617.262.3120)

USA

1166 Avenue of the Americas
New York, NY 10036

[+1.212.345.3960](tel:+1.212.345.3960)

USA

Four Embarcadero Center
Suite 1100
San Francisco, CA 94111

[+1.415.743.7960](tel:+1.415.743.7960)

Brazil

Av. Dr. Chucri Zaidan, 920
Market Place Tower I - 4^o Andar
Sao Paulo SP 04583-905

[+55 11 5501 1100](tel:+55.11.5501.1100)

EMEA

Switzerland

Tessinerplatz 5
Zurich 8027

[+41.44.5533.333](tel:+41.44.5533.333)

France

1 Rue Euler
Paris 75008

[+33 1 45 02 30 00](tel:+33.1.45.02.30.00)

Italy

Galleria San Babila 4B
Milan 20122

[+39.02.305.771](tel:+39.02.305.771)

United Kingdom

55 Baker Street
London W1U 8EW

[+44.20.7333.8333](tel:+44.20.7333.8333)

Asia-Pacific

Japan

Midtown Tower 16F
9-7-1, Akasaka
Minato-ku, Tokyo 107-6216

[+81.3.3500.4960](tel:+81.3.3500.4960)

Hong Kong

Unit 04, 9th Floor
Central Plaza
18 Harbour Road
Wanchai

[+852 2301 7500](tel:+852.2301.7500)

Singapore

138 Market Street
#07-01 CapitaGreen
Singapore 048946

[+65 6510 9700](tel:+65.6510.9700)