

Aite Matrix: The Leading Providers of U.S. Cash Management Technology, 2020

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IMPACT POINTS

- The U.S. cash management vendor technology landscape is a highly competitive one, composed of established vendors with strong financials, deep knowledge of complex corporate transactions, and high barriers to entry.
- Leveraging the Aite Matrix, a proprietary Aite Group vendor assessment framework, this Impact Report evaluates the overall competitive position of each vendor, focusing on vendor stability, client strength, product features, and client services.
- The following criteria were applied to develop a list of eligible vendor participants: bank awareness of the vendor as a provider of a viable cash management offering, successful implementation of a cash management solution at a minimum of one U.S.-based financial institution (FI), the ability to provide client references, and the ability to offer a full out-of-the-box cash management solution as opposed to just components of one.
- A total of 10 vendors were invited to participate, and nine vendors agreed to be evaluated under the Aite Matrix framework.
- The following vendors participated in this report's Aite Matrix framework: ACI Worldwide, Bottomline Technologies, Finastra, FIS, Fiserv, Infosys Finacle, Intellect Design Arena, Jack Henry, and Q2. Backbase declined participation.
- The number of new U.S. bank cash management contracts signed with the leading technology providers profiled in this report has remained relatively steady the last three years. One hundred and two new contracts were signed with the vendors profiled in this report during 2019.
- The trend to replace cash management solutions is expected to continue in a steady flow over the next few years; however, the banks showing the greatest demand for new platforms will continue to shift.
- Ninety-six percent of the U.S. FIs running one of the solutions profiled in this report are running it in a hosted/on-demand environment.
- As banks seek out forward-looking technology partners, some of their highest priorities include richer analytics with embedded machine learning for greater automation and customer guidance, more open architectures enabling clients to exchange data more easily with external systems, fintech marketplaces, the availability of money management tools and forecasting tools, and greater transparency and functionality across corporate banking.
- Achieving best-in-class status in the Aite Matrix, a highly governed and quantitative vendor evaluation methodology introduced via this report, are Bottomline Technologies, Q2, and ACI Worldwide.

INTRODUCTION

The U.S. cash management industry continues to evolve, as does the technology that supports it. Today's corporate and commercial bank customers require robust real-time capabilities that enable them to efficiently initiate payments, collect money owed, and manage their financial positions and operations as effectively as possible. Doing so also requires automated onboarding for new products, digital guidance and actionable insights and data from their banks, rich reporting, granular entitlements, and seamless integration with both their own systems and those of important fintech partners. Further, it requires easy access to the transactions and data they require, workflows that align with their business, and customized experiences and views not only within cash management but also across corporate banking.

This Impact Report explores some of the key trends within the U.S. cash management market and discusses the ways in which technology is evolving to address new market needs and challenges. The Impact Report also compares and contrasts the leading vendors' offerings and strategies, and it highlights their primary strengths and challenges. Finally, to help FIs make more informed decisions as they select new technology partners, this report recognizes specific vendors for their strengths in critical areas. Now more than ever, during the COVID-19 pandemic, banks are seeing firsthand the importance of a solid and feature-rich digital banking platform offered by the right partner.

METHODOLOGY

Leveraging the Aite Matrix, a proprietary Aite Group vendor assessment framework, this Impact Report evaluates the overall competitive position of each vendor, focusing on vendor stability, client strength, product features, and client services.

The following criteria were applied to develop a list of vendors for participation:

- Bank awareness of the vendor as a provider of a viable cash management offering
- Successful implementation of a cash management solution at a minimum of one U.S.-based FI and an ability to provide client references
- Ability to offer a full out-of-the-box cash management solution as opposed to just components of one

Participating vendors were required to complete a detailed product request for information (RFI) comprising both qualitative and quantitative questions, conduct a product demo and briefing, and provide active client references.

The following vendors participated in this report's Aite Matrix framework: ACI Worldwide, Bottomline Technologies, Finastra, FIS, Fiserv, Infosys Finacle, Intellect Design Arena, Jack Henry, and Q2. Backbase was also invited but declined participation in this study.

THE MARKET

This section provides information and analysis around the following issues:

- Market trends
- Drivers for adoption and challenges
- Purchasing factors
- Functionality

MARKET TRENDS

The cash management industry continues to evolve. The following market trends are shaping the present and future of this market (Table A).

Table A: The Market

Market trends	Market implications
Continued focus on intelligent engagement	Analytics and machine learning capabilities must be embedded within cash management platforms to deliver the type of experience today's customers expect.
Need for 360-degree customer journeys	Customer journeys within bank applications should not be limited to any one silo.
Desire for consolidated view of data	Data presented to customers in reports and screen views should consolidate information across channels and products.
Interest in owning the user interface (UI)	The UI user experience (UX) within cash management platforms should be decoupled from business logic for those banks desiring greater control and ownership of it.
Demand for faster implementations	Vendors have had to build accelerators and implement new strategies for faster implementations so banks will have a faster return on their investments.
The rise of fintech marketplaces	Banks can no longer go at it alone and must partner with fintech companies to better meet customer needs. Technology vendors are helping banks find the right partners by creating fintech marketplaces.
Continued focus on small-business banking	New tools, simplified client workflows, and greater guidance are needed to win the business of the critical small-business customer segment.

Source: Aite Group

TREND 1: CONTINUED FOCUS ON INTELLIGENT ENGAGEMENT

Leading vendors are laser-focused on creating more intelligent, persona-based customer experiences. Solutions are being enhanced with embedded analytics, machine learning, and automation to drive cash flow forecasting and intelligent cash management techniques, such as next-best-action digital advisory services. Simply providing transactional capabilities is no longer sufficient to maintain cash management customers. Data intelligence will better position banks to demonstrate value and create opportunities for differentiation.

TREND 2: NEED FOR 360-DEGREE CUSTOMER JOURNEYS

As vendors focus on intelligent engagement, they also recognize that customer engagement and data cannot be limited solely to cash management products and services. Thus, several vendors have initiatives in place to further improve onboarding and platform extensibility. Platforms are being extended to better integrate with customer relationship management (CRM) and lending systems to offer greater visibility, functionality, and engagement across the bank. Digital engagement is ubiquitous in the market; digital acquisition and 360-degree customer journeys and life cycles are the next areas of bank and technology transformation.

TREND 3: DESIRE FOR CONSOLIDATED VIEWS OF DATA

As customer journeys within cash management platforms continue to broaden, the desire and need for consolidated views of data must also be available. Corporate customers expect access channels that include online web, secure file transmission, mobile, and direct API access. Regardless of the access channel used, consumers want to be able to see all of their data in a simple, consistent manner.

TREND 4: INTEREST IN OWNING THE UI

While most corporate customers see few differences across the banks from a functionality standpoint, UX presents opportunities for the differentiation banks seek. As such, it is not surprising that a growing number of large banks are approaching technology providers regarding the ability to customize their UX, including potential ownership and control of the UI. Vendors are enabling such ownership by decoupling their UI from their business logic—an option not available to banks until recently.

TREND 5: DEMAND FOR FASTER IMPLEMENTATIONS

Bank requirements to show a faster return on investment for their digital transformation efforts are on the rise. Many want to go live with new capabilities in as little as six months so they can begin offering them to customers, deepening relationships, and generating revenue. An overall market shift away from customization and toward greater configuration capabilities that don't touch code has made this easier, but banks are still putting pressure on vendors to further speed up their implementation processes. Several vendors are responding with implementation accelerators as well as blueprints with common requirements for faster rollouts.

TREND 6: THE RISE OF FINTECH MARKETPLACES

As the needs of business and corporate customers grow and the definition of banking expands, banks realize that the fintech companies they once viewed as competitors are now much-

needed agile and innovative partners. Similarly, fintech companies value the large distribution channels banks offer coupled with the customer trust and stability they promise. As such, the market is ripe for fintech marketplaces/ecosystems that bring these synergistic needs together for the benefit of both parties, as well as the business end users. Many cash management vendors have marketplaces underway in which they are either integrating their offerings via APIs with those of fintech companies or simply providing links to trusted partner sites. Most banks do not have the resources to do the necessary due diligence to evaluate potential fintech partnerships and appreciate the guidance and recommendations from their technology partners. The point solution providers are likely to have their own initiatives, while the core vendors are more likely to have larger enterprise strategies being developed within their organizations for this purpose.

TREND 7: CONTINUED FOCUS ON SMALL-BUSINESS BANKING

The once-ignored small-business customer segment has become a growing area of focus for most FIs, regardless of size. As banks increasingly migrate these customers onto commercial platforms, it is critical that the experiences delivered align with customer expectations. In addition to simplified language and workflows, vendors are also working on small-business-specific initiatives, such as tighter integration with QuickBooks and other common accounting systems, the inclusion of payment hubs for selection guidance, and the incorporation of money management tools such as basic cash positions and forecasting tools. Many of the fintech marketplaces being developed are also initially targeted at small-business customers.

TOP TECHNOLOGY TRENDS

Technology has an increasingly important impact on banks' cash management strategies. In addition to the digital transformation initiatives just described to help banks better serve business and corporate customers, technical architectures are evolving. Four technologies, in particular, are having the greatest impact on this industry:

- **Open banking/APIs:** While the U.S banking industry doesn't have the same open banking mandates found in other countries, which dictate actions, it increasingly recognizes their importance. APIs are already being leveraged as fintech marketplaces are built out and to better integrate systems both within and outside FIs. APIs will also be a critical tool for better serving corporate customers going forward, especially those desiring the ability to perform banking transactions outside the bank portal.
- **Cloud computing:** The cloud is increasingly being embraced by even the largest banks around the globe. Cloud technology enables faster speed to market, reduced capital expenditures, and the ability to take advantage of the latest solution enhancements in a secure and easily accessible environment.
- **Artificial intelligence (AI):** Banks and vendors are just scratching the surface to unleashing the full potential AI technology offers as a way to automate processes, create better product bundles and client journeys based on learning capabilities, and predict most likely next actions and needs. Leveraging AI to enrich the value of data

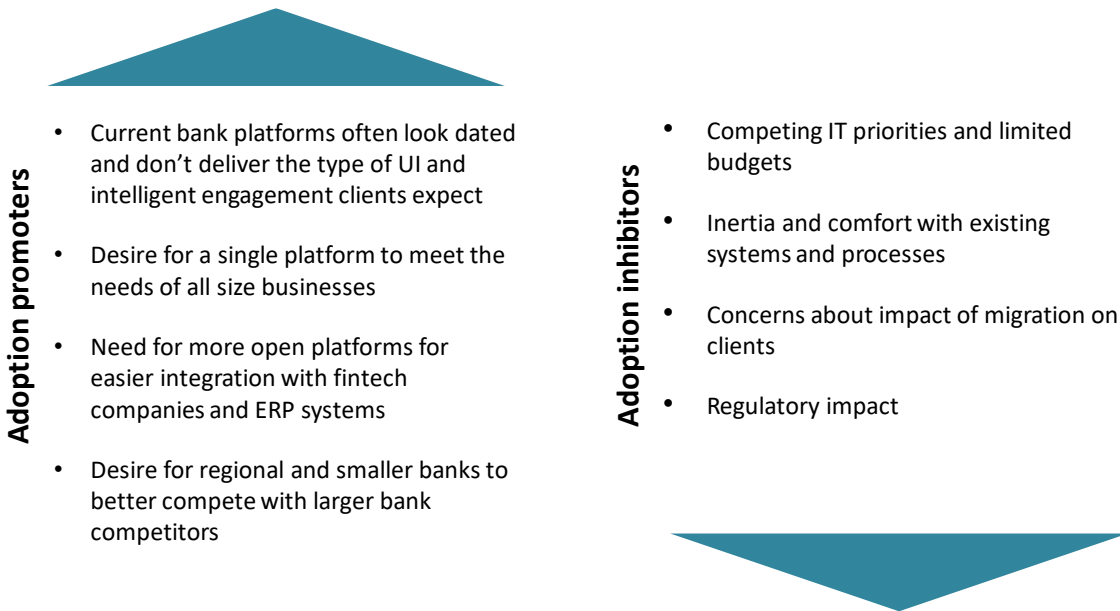
on hand and available through third parties represents the future of this industry and banking in general.

- **Microservices:** While the push for microservices is strongest by the vendors as opposed to demand from banks, its impact is likely to increase over the next few years. Microservices enable banks to take advantage of small components of vendor solutions without disrupting other technology already in place.

DRIVERS FOR AND AGAINST ADOPTION

The following factors are contributing to FIs' overall adoption of new cash management platforms, as well as posing challenges for vendors to penetrate additional prospects (Figure 1).

Figure 1: Factors For and Against Adoption



Source: Aite Group

Drivers for replacement are as follows:

- **Outdated platforms at most banks that don't deliver the UX and intelligent engagement customers expect:** Digital experiences in our personal lives are impacting expectations in our businesses, thereby placing pressure on banks to modernize dated corporate offerings. Additionally, embedded analytics and machine learning capabilities within platforms offer opportunities for banks to differentiate themselves through more intelligent client engagement and to arm bankers with greater insights in most likely next actions for better servicing. Outdated platforms are beginning to negatively impact a bank's ability to attract new customers and retain existing ones.

- **Desire for a single platform to meet the needs of small businesses and large corporations:** Single platform strategies not only are more cost efficient to run but also better position banks to grow with their customers as their needs become more sophisticated. New products and capabilities can easily be added without having to migrate customers to a new platform or expose them to a different UX or platform look and feel. However, implementing this plan requires a cash management platform that is flexible enough to meet the user-friendly demands of small-business users as well as the often-more-complex demands of larger corporate customers.
- **Need for more open platforms:** Banks can no longer effectively meet all the needs of their customers. Thus, it is not uncommon for them to use third-party applications. Therefore, bank platforms must be open to easily integrate with third parties such as the fintech community, as well as the various accounting and enterprise resource planning (ERP) systems used by customers for easier exchange of data. As the definition of cash management continues to expand, the need is growing for banks to be able to partner with other third parties to meet new market needs more quickly and effectively.
- **Desire for regional and smaller banks to better compete with larger players:** As smaller banks look to move further upmarket and attract the business of larger corporate customers, they need platforms capable of competing head to head with those offered by some of the largest banks.

Challenges slowing down replacement for some banks follow:

- **Competing IT priorities and limited budgets:** Most banks have limited IT budgets, forcing them to prioritize and often table initiatives they would like to move forward with.
- **Inertia and comfort with existing systems and processes:** Change is never easy and requires strong communication from the top down to get all affected parties on board. Some banks embrace such communication, while others do not.
- **Concerns about impact of migration on clients:** As banks struggle with internal inertia, they also face it with their clients. Even an improved platform with enhanced capabilities may result in some pushback from clients. While modern platforms should require little to no training, banks will still need to have staff on hand for those clients requiring assistance.
- **Regulatory impact:** While banks have adjusted to the new normal and learned to operate among the slew of new regulations that have been implemented over the last decade, regulatory compliance continues to eat away at a large share of their IT budgets.

PURCHASING FACTORS

While there are many different reasons to purchase a new cash management solution, the following factors represent buyers' key considerations when evaluating solutions:

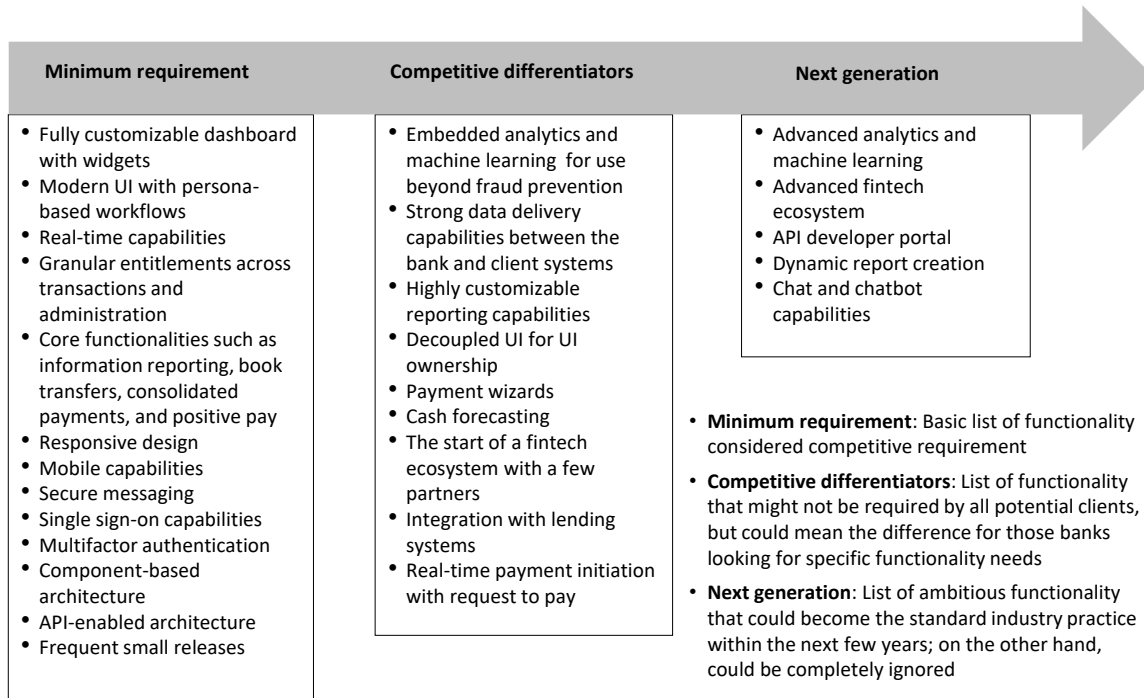
- They want a modern UX that is both intuitive and aligned with the customer, not bank workflows and portal usage.
- They seek a well-thought-out and forward-thinking product roadmap that addresses expected market needs and aligns with the bank's strategy. Banks want to partner with technology providers not only able to meet the needs of today's customers but also able to stay a step ahead of needs. Some forward-looking strategies banks are likely to ask about include AI, analytics, APIs, fintech marketplaces, and availability of money management tools.
 - They need a solution to help them navigate the fintech marketplace. Most banks don't have the resources to perform fintech vendor due diligence and are increasingly looking for their technology providers to offer guidance and recommendations. Vendors are doing this as part of their fintech marketplace initiatives.
 - They look for componentization, not customization. Banks continue to look to create a unique customer experience with high levels of personalization for customers without touching code. Banks have learned the hard way some of the implications of touching code in past practices and then not being able to take advantage of new solution upgrades.
- They seek speed of implementation. Banks are looking for faster implementations in an effort to see a return on their investments more quickly. They also want smaller, more regular updates to eliminate larger-scale ones that are higher risk and more disruptive.
- They want a vendor culture that aligns with that of the bank. Vendor choices are not solely about the technology but also about the people who provide it.

FUNCTIONALITY

When it comes to key functionality, a set of minimum requirements must be met in order to sustain the basic needs of the clients. These minimum requirements are typically the same across the different regions and are found in nearly all vendor solutions in the market.

In order to increase overall adoption and capture additional market share, vendors are focused on developing functionality that presents competitive differentiators. Competitive differentiators might not be attractive to all potential clients but are driving key client adoption and often could mean the difference for those banks looking for specific functionality needs. Features noted as next generation could become the standard industry practice within a decade; on the other hand, they could be completely ignored. Given the limited resources within each vendor, it is imperative that appropriate investments are made across the needs of past, current, and future clients (Figure 2).

Figure 2: Key Functionality Trends



Source: Aite Group

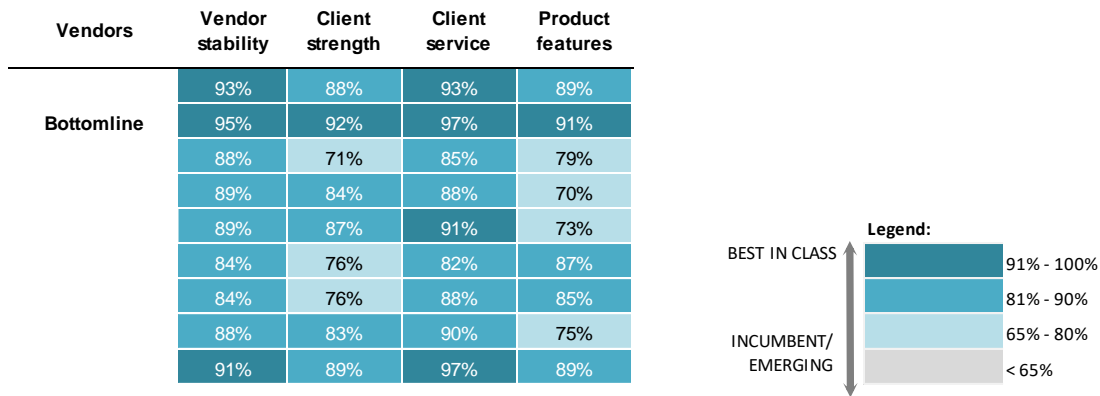
AITE MATRIX EVALUATION

This section will break down the individual Aite Matrix components, drawing out the vendors that are strong in each area and how they are differentiated in the market.

THE AITE MATRIX COMPONENTS ANALYSIS

Figure 3 overviews how each vendor scored in the various areas of importance. Each vendor is rated, in part, based on its own data provided when responding to the RFI distributed by Aite Group as well as on product demos and follow-up discussions as part of the Aite Matrix process. Ratings are also driven by the reference customers of the examined vendors to support a multidimensional rating.

Figure 3: Aite Matrix Components Analysis by Heat Map



Source: Vendors, Aite Group

VENDOR STABILITY

The cash management vendor landscape is a stable one composed of established players with strong financials, growth rates, and reinvestment in research and development. The smallest player generated greater than US\$200 million in revenue during its last fiscal year, with most of the vendors generating more than US\$1 billion in revenue. Not surprisingly, all vendors profiled in this report scored well in this area. The components within this category driving the greatest differences across vendor scores are perceived knowledge and vision of the U.S. market and customer feedback on the quality of the management team category. Bottomline, ACI, and Q2 received the highest scores in this category.

CLIENT STRENGTH

Being able to successfully attract and retain new customers is critical to success in the cash management technology industry. Doing so has been challenging over the last few years, as customers have become more demanding with higher expectations for a faster return on investment and the desire for flexible solutions enabling them to offer a differentiated client

experience. This category evaluates vendor strength based on important factors such as a vendor's total number of U.S.-based clients, the diversity of those clients across customer segments, a proven track record with large banks, average number of new contracts signed over the last three years, client retention and feedback from customers regarding their likelihood to replace their solution, and vendor reputation. Bottomline Technologies was the only vendor to score above 90% in this category, due in part to its consistent pipeline of new business, diverse client base, and strong brand as a leader in the industry.

CLIENT SERVICE

The scoring of this category largely depends on vendor-provided information on service-level agreements and support provided as well as on client feedback about each vendor's ability to deliver on promises and provide high levels of service and a positive cost value. This is the area in which vendors have shown the greatest improvement over the last couple of years as they have shown greater focus on clearly communicating and delivering roadmap items, resolving issues in a timely fashion, and making their clients feel as though their suggestions are being heard. Bank clients appreciate access to senior-level management. Those scoring highest in this category also have strong customer advisory boards and localized support. Bottomline and Q2 scored highest in this category. Bottomline's management team is described by clients as approachable, clear in their strategies and communication, and dedicated to their mission, while Q2 clients appreciate their vendor's willingness to listen and solicit feedback rather than pushing its own agenda.

PRODUCT FEATURES

Innovation is on the rise within the cash management industry as more tech-savvy clients place pressure on their banks and ultimately the technology providers to enhance their capabilities from both a usability and functionality standpoint. While this category considers feedback from clients regarding the robustness and breadth of the functionality within each vendor's cash management offerings, it also measures important factors such as overall solution usability and intuitiveness (based on both client feedback and Aite Group analyst observations), ease of implementation/integration, deployment options, and the vendor's ability to stay ahead of the curve with forward-looking capabilities and initiatives, such as progress with the buildout of fintech marketplaces, embedded analytics and machine learning, API strategies, real-time payment capabilities, and cashflow forecasting. Bottomline, Q2, and ACI lead this category, with Infosys and Intellect close behind. Embedded analytics and intelligence are at the heart of all of their offerings, with each successfully finding niche areas to stand out from the pack.

THE AITE MATRIX RECOGNITION

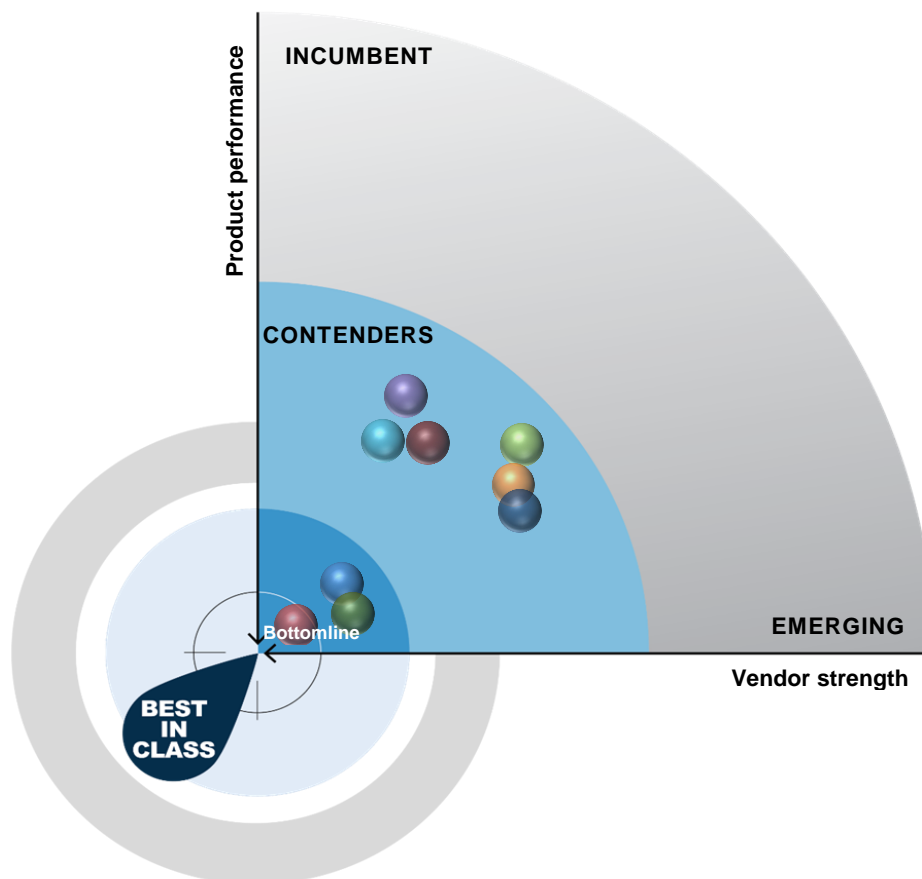
To recap, the final results of the Aite Matrix recognition are driven by three major factors:

- Vendor-provided information based on Aite Group's detailed Aite Matrix RFI document
- Participating vendors' client reference feedback or feedback sourced independently by Aite Group

- Analysis based on market knowledge and product demos provided by participating vendors

Figure 4 represents the final Aite Matrix evaluation, highlighting the leading vendors in the market.

Figure 4: Cash Management Aite Matrix



Source: Vendors, Aite Group

BEST-IN-CLASS VENDORS: BOTTOMLINE

Bottomline Technologies finished ahead of the competition in this year's Aite Matrix report, finishing squarely in the middle and demonstrating a strong balance of both vendor strength and product performance. As noted previously, the vendor has been able to successfully grow its brand over the last few years and is now a contender in most bank's vendor evaluation processes, regardless of bank size. Its Digital Banking IQ platform is both feature-rich and UX strong, with embedded analytics and a forward-looking vision that enables it to stand out from its peers.

VENDOR PROFILE

BOTTOMLINE TECHNOLOGIES

Portsmouth, New Hampshire-based Bottomline Technologies (Nasdaq: EPAY) was founded in 1989 and focuses on making complex business payments simple, smart, and secure. It offers FIs and corporations a full range of cloud-based offerings for domestic and international payments, efficient cash management, automated workflows for payment processing and bill review, and state-of-the-art fraud detection, behavioral analytics, and regulatory compliance. Its solutions are sold around the globe, and in addition to its Portsmouth headquarters, it has other offices in the United States, Europe, and the Asia-Pacific. The vendor generated approximately US\$295.6 million in subscription and transaction revenue during its fiscal year ending June 30, 2019, up about 13% from the prior year. Total company revenue for the fiscal year was approximately US\$422 million.

Bottomline acquired BankSight Inc. in 2019. This acquisition has provided the company, and its Digital Banking IQ platform in particular, with a built-in insights and intelligence engine that leverages applied AI and machine learning technologies. This acquisition is well-aligned with the company's strategy to enable banks to provide more intelligent engagement and has placed its solution one step ahead of most in the industry. Bottomline is also in the final stages of signing partnership and licensing agreements with commercial banking content and insights providers. These partnerships further the insights and intelligence provided to commercial bankers and FI executives by the Digital Banking IQ platform.

Digital Banking IQ is Bottomline's primary cash management platform.

AITE GROUP'S TAKE

A few years ago, Bottomline made a bold move to emphasize UX in the development of features and functionality for the vast majority of its enhancements and initiatives. In doing so, it also made core payments and cash management its primary points of focus and innovated around them. This strategy has received a great deal of market validation, as the vendor's brand, reputation, and value perception across banks of all sizes has increased dramatically in recent years. The vendor is now viewed by many as the leading cash management technology provider that U.S.-based banks and vendor competitors are most often chasing.

Innovation is a critical focus for Bottomline, as evidenced by the US\$30 million it invests annually in its Digital Banking IQ platform. The vendor is extremely focused on incorporating greater analytics and data insights into its platform—a strategy that catapulted with its acquisition of BankSight. By integrating the BankSight solution (now called Insights) within Digital Banking IQ, Bottomline is able to offer both bank clients and their business end users a powerful engine for next-best actions and insights into their business at a level currently unmatched by most other cash management providers. The vendor positions these insights as a way to empower banks to deliver on their promise of relationship banking within the digital domain. While some of the insights driven by machine learning and predictive capabilities are embedded within the core payments and cash management Digital Banking IQ platform (such as to deepen the level of

personalization within the UI), most are available through a bank-facing add-on module available and affordable to all sized FIs.

Beyond analytics, Digital Banking IQ is also fully integrated with the vendor's robust set of offerings, including account opening and onboarding, banking relationship management, and cyber fraud and risk management. Integration with its Paymode-X offering for accounts payable automation, invoice automation, and integrated payables is another selling feature for the vendor, especially among larger banks. Bottomline's only pure retail offerings are its online account opening solution (now called Engage), and the Insights solution, which supports retail and commercial CRM. Its payments and cash management solution is focused on commercial banking—supporting micro through large multinational businesses—and does not offer a consumer banking offering like some of its competitors, but it has not seen lost business as a result. It is seeing opportunities across all size banks, including commercially focused community banks. The Digital Banking IQ platform is feature-rich, UI-strong, and component-based, thereby enabling banks of all sizes to deliver persona-based experiences without requiring them to fall victim to troubling past practices of altering code.

BASIC FIRM AND PRODUCT INFORMATION

- **Headquarters:** Portsmouth, New Hampshire
- Founded in: 1989
- Number of employees: 2,006
- **Ownership and annual revenue:** Approximately US\$422 million during fiscal year ending June 30, 2019
- Name of primary cash management solution: Bottomline Digital Banking IQ
- **Target customer base:** Community, regional, and super-regional banks that have a strategic focus on commercial banking
- **Number of U.S.-based clients:** 125—over 95% of Bottomline's FI customers are utilizing release versions that were made generally available within the past year.
 - Top four banks: Three
 - Super-regional banks (greater than US\$100 billion in assets): 13
 - Regional banks (US\$10 billion to US\$100 billion in assets): 16
 - Small banks (US\$5 billion to US\$9 billion in assets): 11
 - Community banks (less than US\$5 billion in assets): 69
 - Credit unions: 13

- Number of new cash management clients signing contracts:
 - 2017: Seven
 - 2018: Two
 - 2019: Four
- Percentage of total U.S.-based cash management clients that have deployed its full cash management suite (not just one or two modules such as ACH or wires): 92%
- **Global footprint:** Four (three Canadian banks and one European)
- **Implementation options:** On-site (nine), hosted (120), and cloud (two)

KEY FEATURES AND FUNCTIONALITY BASED ON PRODUCT DEMO

- **Executive dashboards:** Bottomline noticed a gap in most cash management offerings whereby there wasn't an easy way for bank executives such as heads of treasury product and sales to get a big-picture view of important factors such as portfolio breakdowns, at-risk clients, and opportunities. By creating data lakes composed of data from within Digital Banking IQ, CRM, and other internal and external systems used across the bank, and working with some of its most strategic clients, the vendor was able to create dashboards to provide richer insights and transparency. Its dashboards show both high-level pictures and drilldown capabilities into company-specific information. These dashboard capabilities focus primarily on three key components:
 - **Primary bank status:** This feature shows not only the percentage of customers considering the bank to be their primary bank but also the key influencers to reaching that status (such as the products most often used and the profile of customers almost there). Bank users can easily leverage this data to drill down on specific clients to review the types of products being used and what the bank needs to do to achieve primary status with them. Metrics are created by the system with the ability for banks to provide input and personalization specific to their customers and product base. The platform provides not only business intelligence most banks have not previously had access to but also recommendations for how to influence course of action. It goes beyond simply recommending the next product needed and instead helps banks determine the right combination of actions, at what price, and at what time, to solidify the highest lifetime value.
 - **Next-best product:** This capability identifies the products recommended most often and looks at the number of accounts.
 - **Churn:** This capability helps executives understand which products are performing well. It analyzes new account openings while also helping executives understand which clients are most likely to churn and be highest risk.

- **Cashflow forecasting tool:** This tool leverages AI capabilities to enable users to determine the impact of transactions on their cashflow. It also compares actual numbers against forecasted numbers to either help the end user improve future forecasts or “learn” from recent activities that may need to be factored into future forecasts.
- **Real-time payments and request to pay:** Digital Banking IQ offers both real-time payments and the ability to send and receive a request for payment. These features are extremely intuitive and enable payers and payees to also exchange fully integrated messages in a chat-like format that is both helpful and easy to use. These messages are extremely helpful in supporting the reconciliation and cash application progress. For example, notes can be added regarding why an amount invoiced is different from what was paid or to simply provide a courtesy message letting the recipient know the payment was received.

TOP THREE AREAS OF FOCUS FOR ENHANCEMENTS OVER THE LAST SIX MONTHS

- **Conversational real-time payments:** Both the ability to send and receive real-time payments and the ability to send and receive a request for payment provided in a unique UI highlighting the conversational capabilities afforded by these new payment types
- **Digital Banking IQ:** Expanded ability to provide Digital Banking IQ down-market by enhancing its multitenant offering with an updated customer engagement UI and modern microservices architecture
- **Embedded data-driven insights and analytics:** Integration of new capabilities and insights to help banks engage intelligently throughout the customer life cycle

ENHANCEMENTS TO ONLINE UX

Bottomline's recent enhancements to the online UX have been focused on three primary themes:

- **Mass personalization:** It is continuing to expand personalization options within the Digital Banking IQ platform to provide end users with the ability to create a “right for me” experience.
- **UI modernization:** It is investing in the UI technology and infrastructure (from Backbone Marionette to React) and the styling, look and feel, and interaction methods for the payments and cash management capabilities.
- **Intelligent engagement:** Bottomline's largest investments have been in this area—creating the technology and data infrastructure to have the system understand and anticipate end-user needs and actions, and from there, make recommendations and, once system trust is gained by the end user, automate tasks on their behalf.

EMBEDDED MACHINE LEARNING AND PREDICTIVE ANALYTICS CAPABILITIES

Machine learning and predictive analytics capabilities are embedded within the Digital Banking IQ platform to enable banks and their clients to enjoy more intelligent engagement and executive dashboards, and to better protect them from fraud. Later in the year, cashflow forecasting capabilities will be released that incorporate additional data sources, such as accounting package detailed payables and receivables information.

API STRATEGY

- Bottomline's Digital Banking IQ has, from its start, been an open platform, supporting internal APIs that banks use to expand their own internally built solutions either as widgets within the Digital Banking IQ platform or as mobile applications. Bottomline's API/open banking strategy is now focused on expanding its API set to provide externally focused APIs in support of the following primary functionality:
 - **Account balances:** Access to checking, savings, general ledger, domestic, international, and multicurrency accounts
 - **Payments:** Permissioned payment initiation for transfers, loans, ACH, wire with approval, and information retrieval
 - **Transaction detail:** Search transactions for wires, ACH, checks, deposits, lockbox, sweeps, capital dividend accounts (CDAs), and zero balance accounts (ZBAs)
 - **Account statements:** Capability to search and retrieve eligible historical online account statements
 - **Image retrieval:** Access to paid checks, third-party drafts, deposited checks (desktop deposit, electronic deposit, and lockbox), returned checks, and deposit slips

FINTECH MARKETPLACE CREATION

Bottomline is building out what it refers to as its Digital Banking IQ Connect open API ecosystem. Several key steps have already been completed, including defining of MVP open API customer journeys, identification of the Digital Banking IQ Open API groups and target ecosystem application integrations needed to support those journeys, communication of the roadmap to a subset of strategic FI clients for early adoption, and creation of the ecosystem integration enabling the infrastructure to be live and in production.

REAL-TIME PAYMENTS

Bottomline works closely with The Clearing House and most of its owner FIs for real-time payment capabilities. It has spent considerable time with its clients and the market to ensure the full value proposition of real-time payments is understood and recognized. In support of RTP, it has built a gateway-agnostic solution but has prebuilt integrations to the following real-time gateway service providers: Fiserv Dovetail, IBM FTM, and FIS Clear2Pay.

KEY NEW FEATURES/FUNCTIONALITIES TO BE ADDED TO THE SOLUTION OVER THE NEXT SIX TO 12 MONTHS

- Additional actionable insights and analytics for bankers, FI executives, and end users to provide proactive intelligence toward deepening client relationships and growing businesses
- Launch of the Intelligent Cash Flow Forecasting module
- Expansion of foreign exchange capabilities, such as the ability to include forward contracts in the creation of cross-currency payments
- Open banking/external API access integration module

CLIENT FEEDBACK

Bottomline clients are positive in their descriptions of the Digital Banking IQ solution and especially the vendor's management team. They describe management as approachable, clear in their strategies and communication, and dedicated to their mission.

Bottomline's strategy around intelligent engagement has received strong support from its customers for moving in that direction. In terms of actual execution, while still in the early stages, banks believe it will be an additional value to help their clients make better decisions and to understand cash flow at a granular level. It demonstrates Bottomline's efforts to take steps to make a commoditized solution and evolve it for greater value. Other strengths that commonly come up during client reference calls are the platform's ease of use and modern UI, the openness of the architecture, ease of integration with other third-party solutions, ability to deliver beyond just cash management capabilities, and vendor openness to client suggestions and requests.

While the vendor was described as still wrestling with some growing pains given its quick rise in status over the last couple of years, clients feel good about the vendor's strategy for better release management and bringing new capabilities to market in a way that limits time and investment by the bank for rapid deployment. Its recent release is viewed as providing a significant improvement to the UI for easier navigation that lets clients better compete against the largest banks. Its responsive design is also viewed as a major improvement and helps those banks not yet live with mobile meet client needs.

From a functionality standpoint, its customers feel it is strongest in the market but feel the vendor needs to do a better job marketing and touting its global capabilities.

They value the fact that it doesn't customize the Digital Banking IQ solution and instead addresses requirements by incorporating solutions into the core product code base and providing configurable options. One bank that recently went live with the solution notes that while issues come up in every implementation, this was a complex one, and Bottomline was extremely responsive and quick to address issues.

Clients also value the strength of the vendor’s Strategic Advisory Board, a group of senior executives from a cross-section of bank customers with whom it meets annually and communicates with quarterly to seek strategic guidance on its business and otherwise provide a forum for information sharing with and among this group.

One area mentioned as having room for improvement is the API stack. Having RESTful APIs and simple object access protocol (SOAP) in some areas has created some issues for some bank clients. The vendor has this set up to support varying needs and requests and, in many cases, supports both methods on the same service. Additionally, as it continues to grow, clients feel it will need to add staffing, because resources are already spread thin, and due to recent acquisitions, there is now more product to maintain. Identifying ways to continually improve communication should also be a focus for this vendor as well as others in the industry.

Overall, the vendor receives positive feedback from its customers regarding its functionality, its vision, its ability to take feedback in stride, and its willingness to accept and give some “tough love,” as one banker put it, in the spirit of a true partnership.

Table B displays the vendor’s strengths and challenges.

Table B: Key Strengths and Challenges—Bottomline Technologies

Strengths	Challenges
Viewed as a market leader by many banks and vendors, and has enjoyed strong brand awareness and reputational growth in the last few years	Experiencing some growing pains due to fast growth
Focus on intelligent engagement supported by embedded machine learning and predictive analytics capabilities	While customers praise its management team, continuing to improve communication should be a focus.
Robust functionality and a strong UI	

Source: Aite Group

CONCLUSION

Banks:

- Now more than ever, FIs need to replace legacy cash management platforms that are not effectively addressing client needs, expectations, and new market challenges.
- Leveraging the right cash management platform for your digital transformation initiative will arm your FI with the tools needed to better leverage data and insights to more effectively engage with clients, deliver an improved UX that better aligns with digital experiences in their personal lives, and offer opportunities for differentiation in a competitive market.
- As the definition of banking continues to expand, look to broaden your capabilities beyond those traditionally offered through partnerships with fintech companies. If your bank doesn't have the resources to navigate the fintech market on its own, speak with your cash management technology partner about its fintech marketplace initiatives.
- Look for technology partners with active client advisory groups and that regularly solicit client feedback to ensure your bank's needs are being met and your priorities are heard. This is a point of differentiation across the vendor landscape.

Vendors:

- The pipeline for new cash management platform contracts will remain strong over the next few years; however, the market will see fewer replacements by the 50 largest banks that already moved forward with digital transformation strategies in the last few years. Sales strategies should instead shift toward the next tier of banks, as well as smaller, more commercially focused FIs looking to identify niches and enjoy greater success among small-business and middle-market customers.
- As customers grow more demanding and expectations for new platforms broaden, banks are seeking out technology partners with forward-looking strategies. Some of their highest priorities include richer analytics with embedded machine learning for greater automation and customer guidance, more open architectures enabling clients to exchange data more easily with external systems, fintech marketplaces, the availability of money management tools and forecasting tools, and greater transparency and functionality across corporate banking. Such capabilities and initiatives should at least be on your product roadmap.
- Identify ways to continue to lessen the time required for implementation, as banks are focused on speed to market and a faster return on investment.
- Continue to incorporate agile development methodologies and greater inclusion of customer voice into all development plans and prioritization of roadmap items. Banks seek true partnerships with technology vendors and value strong communication and the ability to provide regular input.

ABOUT AITE GROUP

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