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AITE MATRIX: U.S. CASH MANAGEMENT TECHNOLOGY PROVIDERS

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IMPACT REPORT

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INTRODUCTION

The cash management industry and the technologies supporting it have become a central focus for many banks. Corporate treasurers are more demanding than ever before and forcing the hand of their primary FIs to open their platforms, integrate more tightly with third-party systems, and offer more tools to help them effectively and efficiently manage their finances. Platform extensibility is critical.

These factors, coupled with a challenging economic environment, a regional bank crisis, and the growing presence of fintech companies, are driving significant change within this industry. This change requires increased focus and investment in digital capabilities and experiences, evolving strategies, and new skillsets.

This Impact Report explores some of the key trends within the U.S. cash management market. It discusses how technology is evolving to address new market needs and challenges. The Impact Report also compares the leading vendors' offerings and strategies and highlights their primary strengths and challenges. Finally, the report recognizes specific vendors for their strengths in critical areas to help FIs make more informed decisions as they select new technology partners.

METHODOLOGY

Leveraging the Aite Matrix, a proprietary Aite-Novarica 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) composed of qualitative and quantitative questions, conduct a minimum 60-minute product demo, and provide active client references.

THE PLAYERS

This section presents comparative data and profiles for the individual vendors that participated in the Aite Matrix evaluation. This list is by no means exhaustive. Firms looking to undergo a vendor selection process should conduct initial due diligence before assembling a list of vendors appropriate for their unique needs. Table A presents basic vendor information for the participating solutions.

TABLE A: EVALUATED VENDORS

COMPANY	HEADQUARTERS	FOUNDED	TARGET MARKET	SAMPLE CLIENTS
Bottomline	Portsmouth, New Hampshire	1989	FIs with over US\$5 billion in assets or those with a strategic focus on commercial banking	Citizens Bank, Regions Bank, CIBC, Fulton Financial Corporation, Frost Bank
Dragonfly	New York	2022	Banks with US\$2 billion to US\$500 billion in assets for its full platform and banks with greater than US\$500 billion assets for individual modules	Wells Fargo, TD Bank, Associated Bank, Santander, East West Bank
FIS	Jacksonville, Florida	1968	Community, regional, and super-regional U.S. banks	Southern First Bank, Popular Bank, Plains Capital Bank
Fiserv	Brookfield, Wisconsin	1984	Banks and credit unions with assets of US\$5 billion and above	Northwest Bank, West Teas National Bank, Tri Counties Bank, Sunflower Bank, Woodforest Bank

COMPANY	HEADQUARTERS	FOUNDED	TARGET MARKET	SAMPLE CLIENTS
Infosys Finacle	Bengaluru, India	1981	Large and super-regional banks (over US\$50 billion assets) and regional banks (US\$10 billion to US\$50 billion assets)	Marcus by Goldman Sachs, Bank of the West, Santander UK, ABN Amro, Axis Bank
Intellect	Chennai, Tamil Nadu, India	2014	Tier-1, Tier-2, and large Tier-3 banks, globally	CIBC, Canadian Western Bank, BNY Mellon, HSBC
Jack Henry	Monett, Missouri	1976	Community and regional banks	Undisclosed
NCR	Atlanta	1884	Community banks and credit unions	Penn Community Bank
Q2	Austin, Texas	2004	U.S. banks and credit unions with over US\$750 million in assets	First Citizens, Synovus, Texas Capital, Valley Bank, Texas Security Bank

Source: Vendors

THE MARKET

The following market trends are shaping those priorities and driving the future of the U.S. cash management market (Table B).

TABLE B: THE MARKET

MARKET TRENDS	MARKET IMPLICATIONS
Focus on digitizing the bank rather than digital platforms	Banks are focused on cash management platform excellence as well as broader digital transformation strategies and creating a larger digital ecosystem.
Shift toward hyper-personalization	Segmentation and client journeys are getting more granular and personalized.
Growing presence of fintech companies	Partnering with fintech companies has become table stakes for succeeding in the cash management space for cash management technology providers and their bank partners.
Realization that faster payments is not a strategy in and of itself	Faster payments should not be viewed as a new payment type but as part of a broader integrated payments offering.
Enhanced data transparency, connectivity, and exchange	Corporate customers need easier access to consolidated data. Information reporting modules must be enhanced, and integration with enterprise resource planning (ERP) and other external systems must be strengthened for easier data exchange.
Greater expectations for data analytics and advice	Data and analytics must be embedded throughout bank platforms to better anticipate customer needs, identify cross-sell opportunities, and deliver data-rich insights and actionable recommendations.

Source: Aite-Novarica Group

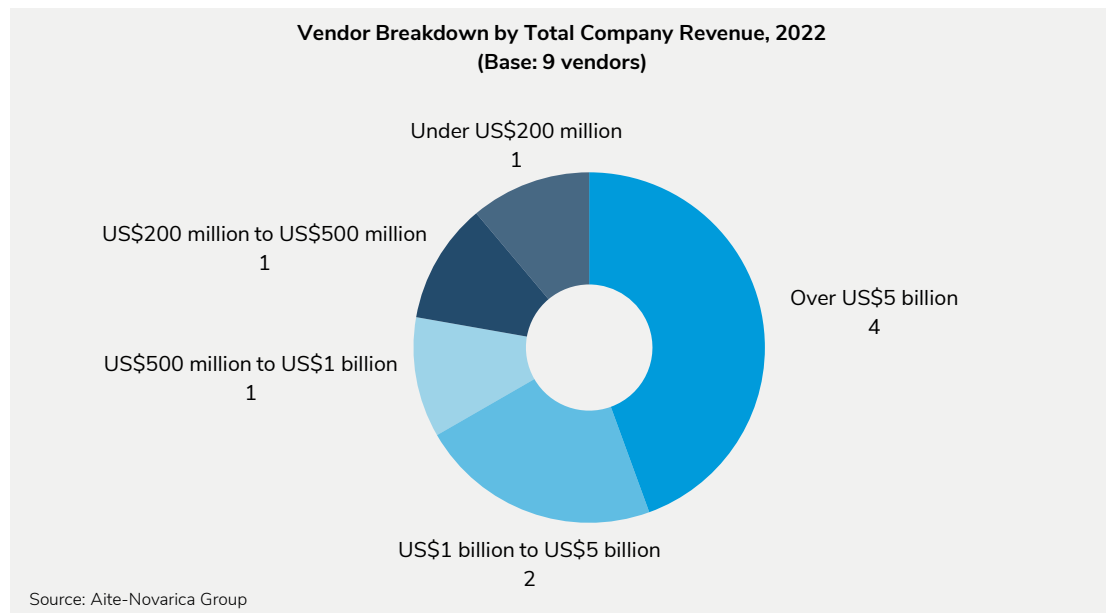
KEY STATISTICS

This section provides information and analysis on key market statistics and the forecasted number of new contracts signed over the next three years.

ANNUAL REVENUE ESTIMATES ANALYSIS

The U.S. cash management vendor landscape comprises established players with strong revenue streams and financial viability. Even newer entrants to the space are not startup companies but established vendors successful in other areas expanding their capabilities or divestitures of existing companies. Some non-U.S. players are looking to penetrate this market, but it is uncommon to see emerging fintech companies entering it as anything more than a complement to existing offerings. It is an industry with high barriers to entry, given banks' focus on vendor experience and a proven track record (Figure 1).

FIGURE 1: ANNUAL REVENUE ESTIMATES BREAKDOWN



NUMBER OF NEW CONTRACTS SIGNED

The number of banks looking to replace their cash management platform continues to rise as competition increases and legacy platforms place FIs at a disadvantage. The market saw a slight slowdown in 2020 due to the pandemic. Momentum has improved since; the market saw approximately 101 replacements in 2022 (Figure 2).

FIGURE 2: NEW CONTRACTS SIGNED

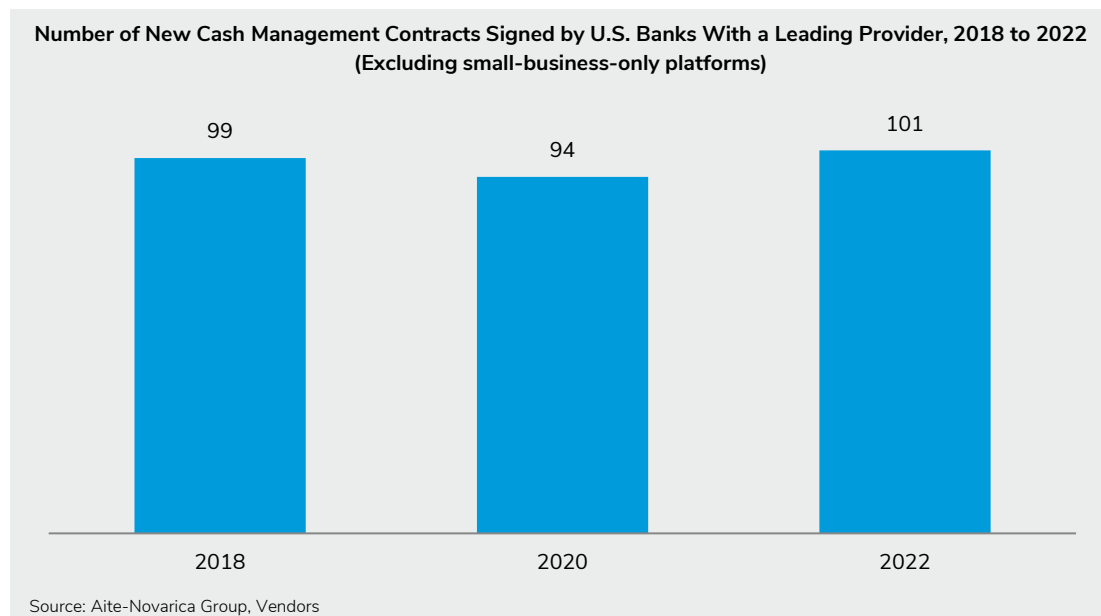
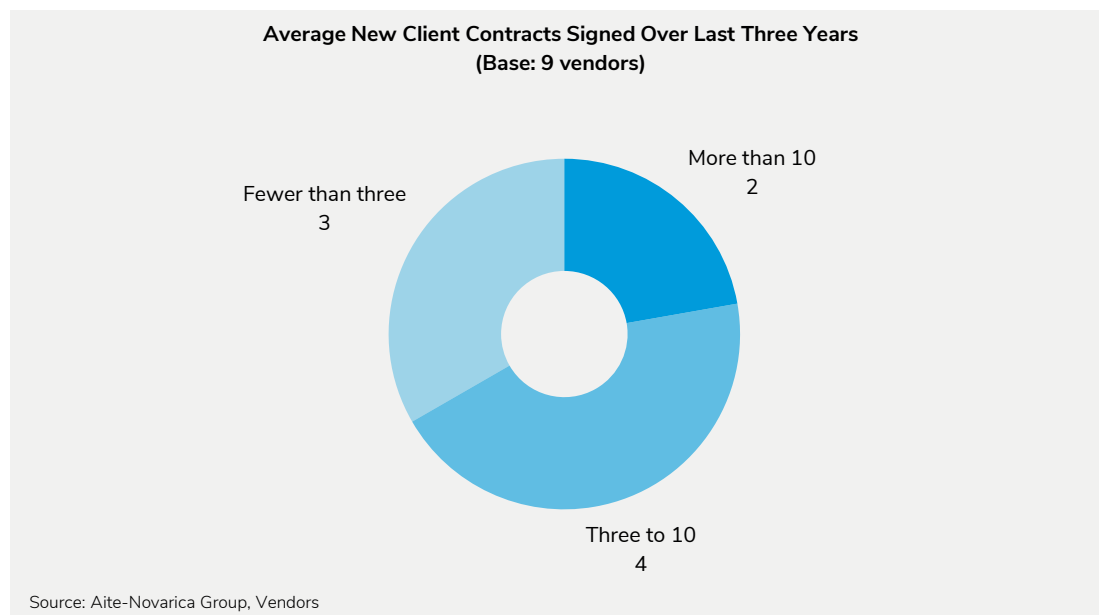


Figure 3 shows responses from the vendors when asked for the average number of new U.S. cash management contracts signed over the last three years. The numbers only include contracts for new deployments, not the addition of new modules. These numbers also only count deployments of the middle-market and large corporate cash management solutions profiled in this report and not the small-business-specific offerings of any of the vendors.

Most of the vendors (seven) averaged fewer than 10 new cash management client wins each year over the last three years. However, some of the vendors targeting smaller FIs were able to surpass that, given their larger target markets. The average 2022 contract length has held steady at five years.

FIGURE 3: NUMBER OF NEW CONTRACTS SIGNED

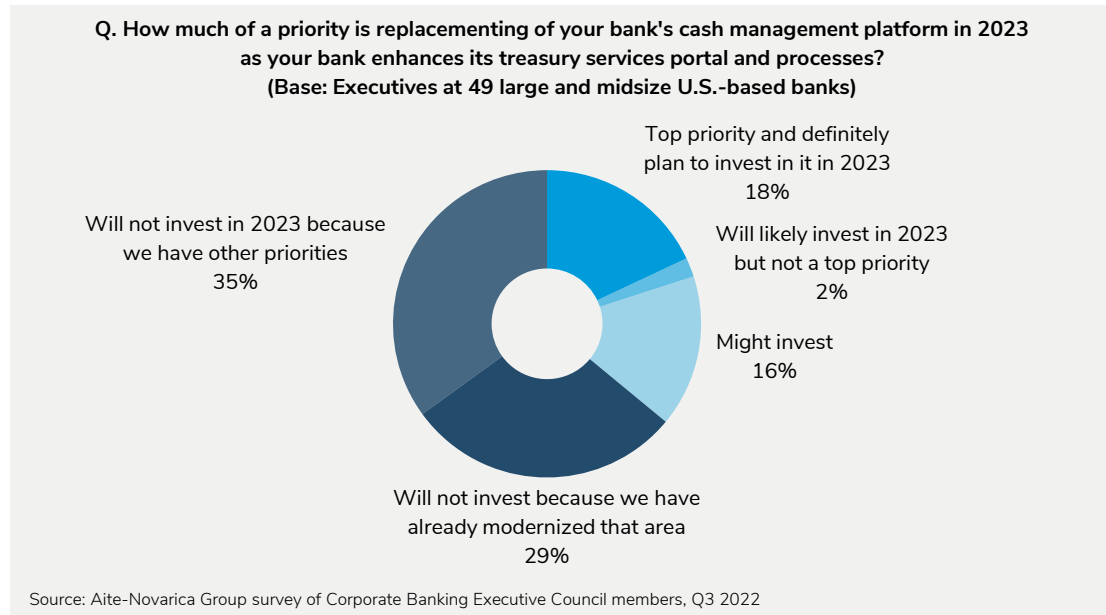


FORECAST MOMENTUM

Technology providers are noticing increased activity in the market. Aite-Novarica Group expects the increase in the number of cash management platform replacements in 2022 to continue, especially as pent-up demand from the pandemic persists. Customer demands are further driving the need for replacements. Many of the largest banks have already replaced their platforms, and super-regional and several regional banks plan to do so.

A Q3 2022 Aite-Novarica Group survey of 49 large and midsize U.S.-based banks found that 20% of survey participants will likely or definitely invest in a new cash management platform this year, and an additional 16% might (Figure 4).

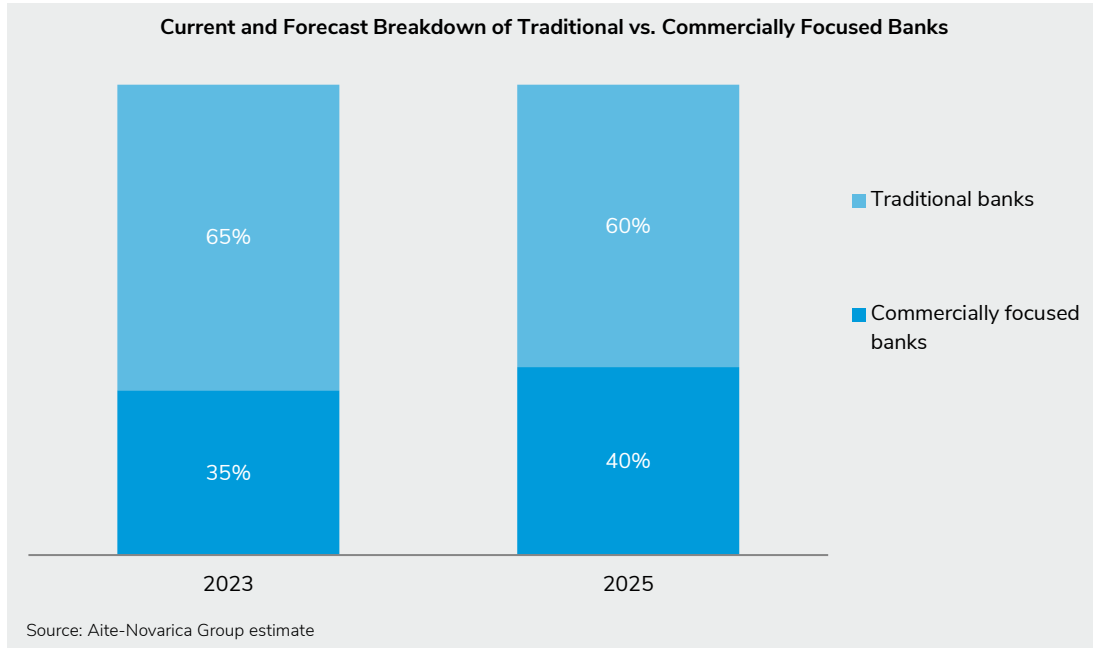
FIGURE 4: BANK PLANS FOR PLATFORM REPLACEMENT



In addition to pent-up demand and new customer expectations, many banks are also becoming more commercially focused because of potential fee-based revenue opportunities that come along with it. This, too, is driving a growing number of cash management replacements, especially by smaller institutions.

Platforms that are “good enough” are no longer sufficient for banks that want to enjoy greater success with commercial clients. The trend toward more commercially focused banks will likely continue over the next few years (Figure 5). This, too, is driving a growing number of cash management replacements, especially by smaller institutions. Platforms that are “good enough” are no longer sufficient for banks that want to enjoy greater success with commercial clients. The trend toward more commercially focused banks will likely continue over the next few years.

FIGURE 5: GROWTH OF COMMERCIALY FOCUSED BANKS



Aite-Novarica Group expects the number of platform replacement contracts signed to increase by about 3% this year and about 5% thereafter, given the growing demand and urgency for digital transformation to be competitive (Figure 6).

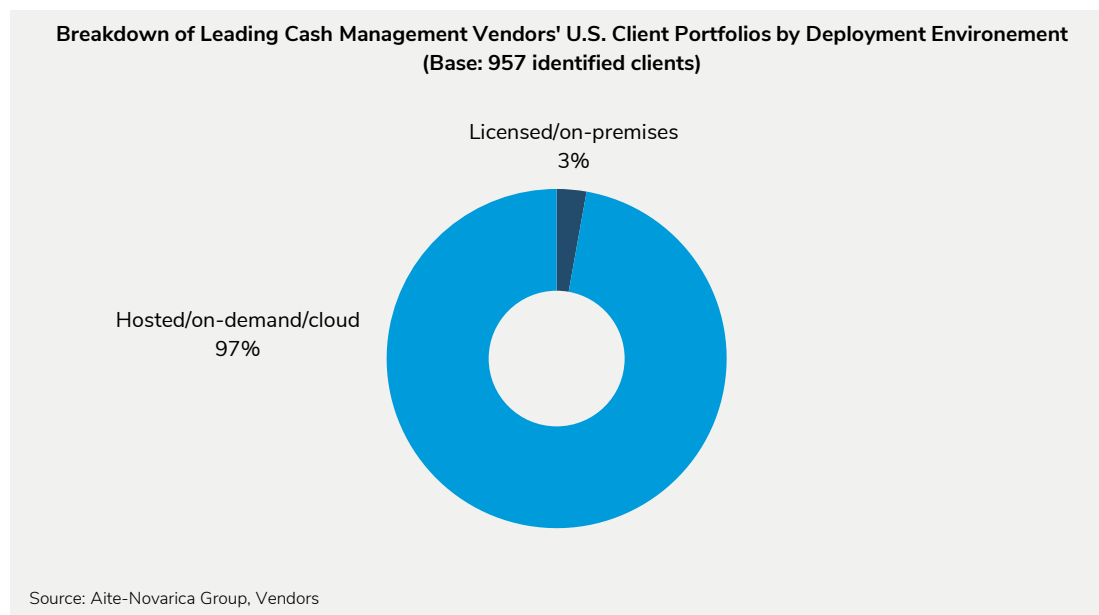
FIGURE 6: FORECAST NUMBER OF CASH MANAGEMENT CONTRACTS SIGNED



DEPLOYMENT ANALYSIS

Some of the largest banks prefer a licensed deployment environment, but the number continues to decline. In fact, several of those with licensed deployments are beginning to invest in the cloud and see it as the industry's future. All new cash management deployments during 2022 have been hosted in a vendor data center or cloud environment. Of the 957 clients of the vendors profiled in this report, 97% of the deployments across their cash management client base are currently in a hosted/on-demand or cloud environment (Figure 7).

FIGURE 7: BREAKDOWN BY DEPLOYMENT ENVIRONMENT



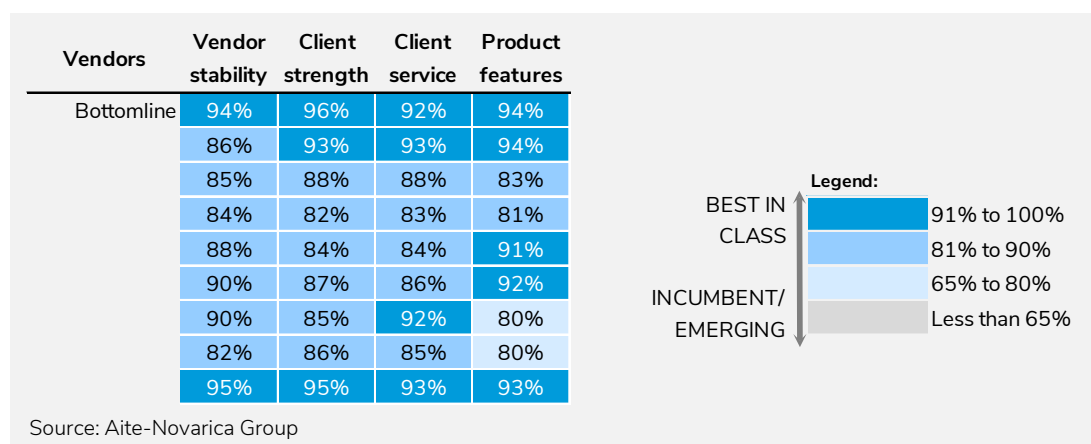
AITE MATRIX EVALUATION

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

THE AITE MATRIX COMPONENTS ANALYSIS

Figure 8 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-Novarica Group and 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 8: AITE MATRIX COMPONENTS ANALYSIS HEAT MAP



Vendor Stability

The U.S. cash management vendor landscape is a solid one with established players. There are high barriers to entry, so all providers are stable. However, Bottomline is among the vendors that lead this category as best in class, given its strength from a revenue standpoint and high scores for quality of management team, ability to retain talent, and customer satisfaction with investment in research and development. Retaining talent is especially challenging in the current environment but critical to maintaining a satisfied customer base. Bottomline's management team is viewed as approachable, knowledgeable, and engaged.

Client Strength

Technology providers scoring well in this category have a solid cash management client base in the U.S. with high retention rates. They also offer platforms capable of scaling to a broad range of bank sizes and a proven track record. Finally, their bank clients show a strong likelihood to remain on the platform, be satisfied with the relevancy of the product roadmap to their needs, and often state they would choose the vendor again if given the opportunity.

Bottomline scored best in class in this category and has especially strong product roadmaps appealing to a wide range of institutions. For that reason, it is often considered for replacement.

Client Service

Banks desire technology partners that are easy to work with and deliver high levels of service and support. They recognize that issues may arise occasionally but value those partners that offer clear communication and look to quickly resolve problems. They take the blame when needed and don't point fingers. Thus, scoring well in this category requires hyper-focusing on customer experience, communication, and delivering on promises. It also requires strong channels for communication with the vendor and among clients for idea sharing. Technology providers excelling in this area have strong advisory groups and dedicated account/customer success managers.

Product Features

Corporate and business customers are becoming more demanding and placing greater pressure on banks to ramp up their capabilities and how they deliver services and information. They rely on technology providers to bridge the gap between market demands and existing offerings. High scores in this category are based on the robustness and scalability of product offerings and client feedback regarding UI, ease of upgrades, and support or customization. It also considers the vendor's roadmap and vision and differentiating capabilities such as embedded machine learning and analytics, the strength of its payment capabilities, and the build out of its fintech ecosystem.

This category had the highest vendor ratings and the greatest variance across the vendors. Bottomline is one of the vendors that came out on top.

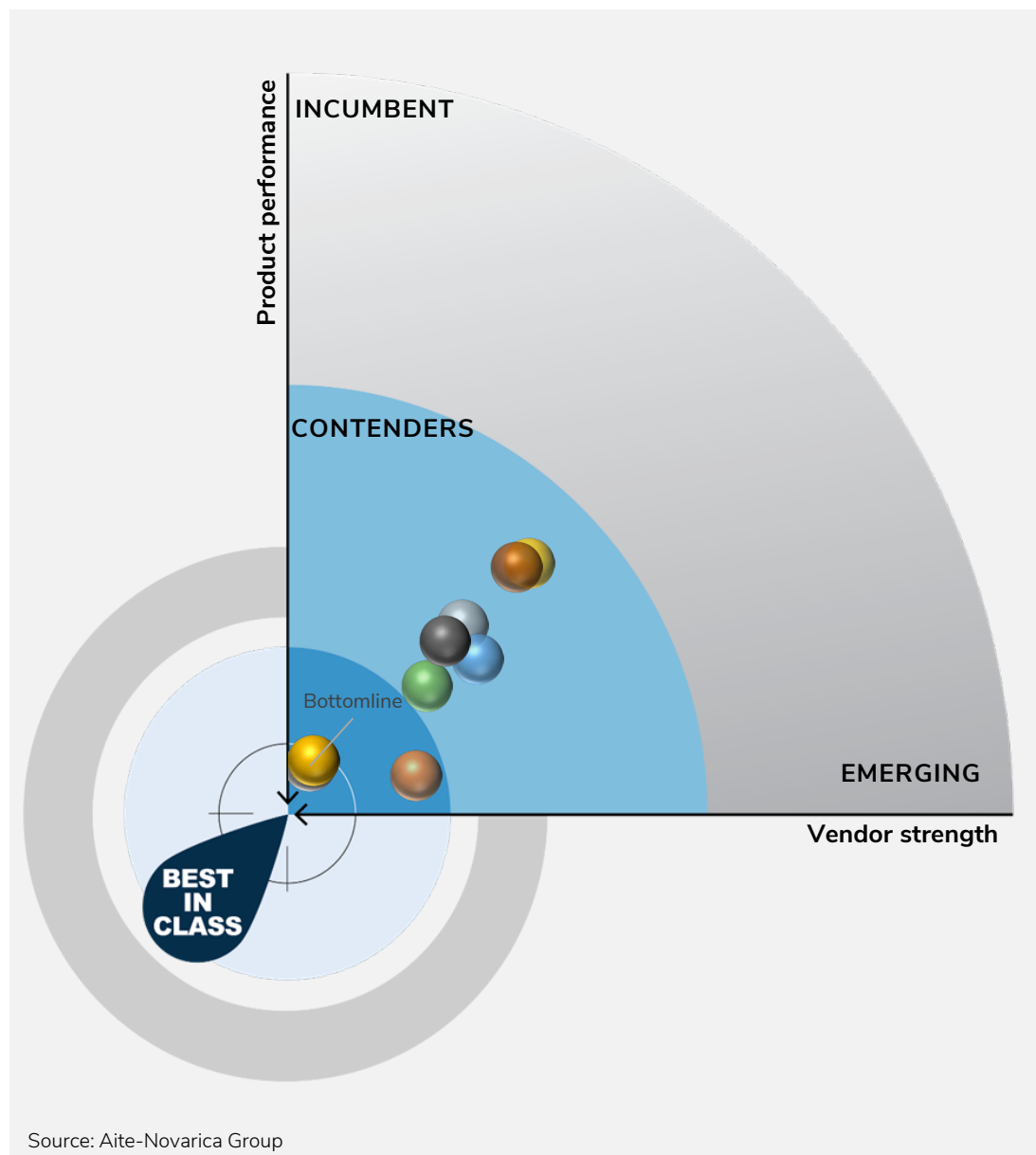
THE AITE MATRIX RECOGNITION

The final results of the Aite Matrix recognition are driven by three major factors:

- Vendor-provided information based on Aite-Novarica Group's detailed Aite Matrix RFI document
- Participating vendors' client reference feedback or feedback sourced independently by Aite-Novarica Group
- Analysis based on market knowledge and product demos provided by participating vendors

Figure 9 represents the final Aite Matrix evaluation, highlighting the leading vendors in the market.

FIGURE 9: 2023 CASH MANAGEMENT AITE MATRIX



Source: Aite-Novarica Group

Best-in-Class Vendors: Bottomline

This year's overall best-in-class vendors include Bottomline. This vendor offers solid solutions and received consolidated scores of 94%. It is commonly considered when banks of all sizes consider a platform replacement.

Bottomline has successfully deployed its solution to more large U.S. banks than any other vendor profiled in this report. It has a highly engaged management team and a forward-looking vision for its product roadmap. It is broadening its already strong value proposition to end users as it integrates its Digital Banking IQ platform with its other products, such as Paymode-X and TreasuryXpress.

BEST IN CLASS: BOTTOMLINE TECHNOLOGIES INC.

Portsmouth, New Hampshire-based Bottomline Technologies describes itself as transforming business payments and processes for companies and FIs worldwide. Over 1,200 banks and FIs leverage Bottomline's products, as do thousands of companies in 92 countries across the globe. Its Bottomline Digital Banking IQ platform is a feature-rich and scalable offering in place at some of the largest banks in the U.S., often making it a strong contender in most bank RFI processes.

Thoma Bravo acquired Bottomline on May 13, 2022, providing funds for additional investment in its products and giving the company a new perspective on some of its key strengths and value proposition. One of the most noticeable changes to its value proposition has been a stronger focus on integrating its products and an even greater emphasis on the critical payments business. Specifically, it is more tightly integrating Bottomline Digital Banking IQ with Paymode-X and TreasuryXpress (acquired in February 2021). It is further extending its capabilities through partnerships such as the one with Autobooks.

Aite-Novarica Group's Take

By integrating some of its offerings more tightly, Bottomline is creating a deeper payment ecosystem that supports the full business payments and cash life cycle of an FI's business customers. Addressing the expanded business requirements of business customers and presenting these capabilities through functional UIs extends the FI into their customers' back offices. While certain connection points between the major offerings still hold some integration gaps and remain a work in progress, the suite is compelling for any bank seeking to provide a broad, future-enabled solution set. The value-added presence of an Autobooks integration provides FIs the ability to offer additional value (and sticky functionality) to even its smallest business clients.

Beyond the larger ecosystem in which it sits, the Bottomline Digital Banking IQ platform is a robust one with a diverse client base. In recent years it has been a top choice for many of the largest banks replacing their cash management platforms while also successfully enabling smaller regional banks to be more competitive and win the business of larger corporations. It has been strengthened with data analytics and machine learning capabilities.

Basic Firm and Product Information

- **Headquarters:** Portsmouth, New Hampshire
- **Founded in:** 1989
- **Number of employees:** 2,500
- **Name of primary cash management solution:** Bottomline Digital Banking IQ
- **Key financial information:** Bottomline is a profitable company that generated over US\$500 million in revenue during 2022, representing a 15% increase over the prior year. The company reinvests 16% to 25% of revenue back into R&D.
- **Target customer base:** The Bottomline Digital Banking IQ solution targets FIs with more than US\$5 billion in assets or those with a strategic focus on commercial banking.
- **Number of U.S.-based cash management clients:** 94, 90% of which are running the latest release of its offering. Average cash management client tenure is greater than 10 years, and annual client retention in the last three years is more than 90%.
- **Number of new cash management contracts signed per year:**
 - **2022:** One U.S. bank and zero credit unions
 - **2021:** Two U.S. banks and zero credit unions
- **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):** 93.62%
- **Global footprint:** Six banks or credit unions outside the U.S. are running Bottomline's cash management platform.
- **Implementation options:** Digital Banking IQ can be deployed in a licensed, vendor-hosted data center, public cloud, or private cloud environment.

Differentiating Features and Recent Enhancements

- A key differentiating feature for Bottomline is its Paymode-X and TreasuryXpress offerings. Paymode-X supports accounts payable automation and offers corporates a network of more than 525,000 suppliers to help banks expand their business payments offering through one vendor. The unique integration between Digital Banking IQ and Paymode-X will create new revenue streams for banks to better monetize payments. TreasuryXpress provides treasury and finance teams with a platform to automate their daily treasury and liquidity management activities by providing real-time visibility into cash positions, forecasting, cash optimization tools, and capital optimization. The integration between Digital Banking IQ and TreasuryXpress will enable banks to better serve their larger commercial and corporate customers with multiple bank relationships positioning the bank to win the primary client relationship. These tools are increasingly important to middle-market and larger businesses in today's challenging environment. The value proposition will be even stronger once these offerings are fully integrated with Bottomline's Digital Banking IQ platform.
- The payment center offers a centralized location for all things payments. It has recently been enhanced with a patented RTP-driven transaction payment request and remittance communication UX. Requests are easy to set up and include all the information the recipient needs, including amount and timing. Conversational components enable the payee and payor to exchange messages, such as a thank you once the payment is received.
- Engagement optimizer offers FIs a valuable tool to identify trends and transaction patterns across their client base. For example, it can help a bank identify at-risk clients before they attrite or understand who their best prospects are when planning new product launches. It also provides granular details, such as logins, transactions by type, and migration tracking, to understand customer behavior and preferences.

Embedded Machine Learning and Predictive Analytics Capabilities

Bottomline recently maximized the utilization of machine learning and predictive analytics capabilities within its Digital Banking IQ Engagement Optimizer tool. This technology is being leveraged for cash flow forecasting, playing an integral role in its

cyber fraud and risk management solutions for detecting behavioral and transactional fraud.

Key Roadmap Items

- Integration across Bottomline's key offerings will be an ongoing initiative throughout 2023.
- Bottomline's Digital Banking IQ platform supports a patented UI experience for creating and displaying received RTP and associated ancillary messages. The vendor will extend these capabilities to support FedNow Instant Payments and to any banks choosing to join The Clearing House RTP and FedNow simultaneously.
- Deeper ERP integration is forthcoming, such as certifying Bottomline Digital Banking IQ with QuickBooks Online. While the interface has been supported for several years, certification will allow Bottomline to ensure it will not experience any disruption as new releases are delivered.
- Currently, Bottomline supports approximately 1,700 APIs in its cash management API library. The vendor is developing a set of aggregated services to be specifically used to support customer-facing use cases. Simultaneously, Bottomline is developing an API gateway program allowing banks to utilize this service without their own program.

Client Feedback

Bottomline clients seem very pleased with the vendor and the direction the platform is moving in. They feel the vendor takes its promise to “delight” customers very seriously and has several measures to ensure clients remain satisfied and feel their voices are heard. One client even mentioned the vendor put its new sales on hold during a period of strong growth when it felt it was at risk of falling behind with implementations and timelines. It was cited as an example of Bottomline's client-first attitude. Additionally, the vendor is described as having vision and hiring innovative people.

The vendor has a strong client roster providing a good mix of input from some of the largest U.S. banks and a good range of regional ones. While some clients feel the broad range of users makes it difficult to build a roadmap that addresses all their needs, most are pleased with the product and the plans for it. Clients appreciate the many

opportunities to impact and provide feedback for future roadmap items through an active advisory board.

Clients feel the solution is moving in the right direction and support the vendor's strategy for tighter integration across the portfolio. One client is already leveraging both Bottomline's Digital Banking IQ Platform and Paymode-X and feels the combination enables it to deliver greater value and relevance to end users. The acquisition of TreasuryXpress is viewed favorably, given the product's strength and the ability to offer additional forecasting capabilities without forming a partnership with another vendor.

Clients speak highly of the overall configurability of the platform, the robustness of the functionality, and the strong service. One client that went live with Bottomline's digital banking platform during the pandemic stated its fully virtual rollout exceeded expectations and met every deadline. The Bottomline relationship is one of true partnership. While bank clients strongly influence the product roadmap, they also consider Bottomline a thought leader and advisor who challenges them to deliver the best outcome. They view the platform as best in class and an important component of their overall digital strategy. They appreciate that the vendor primarily focuses on key areas within cash management and payments rather than trying to be everything to everyone.

No vendor is perfect, but Bottomline clients appreciate that the vendor "stays away from the blame game" and instead focuses on resolving issues. Issues are quickly addressed, and the leadership team is approachable and engaged. Requests are responded to quickly.

Not surprisingly, there is some concern about the impact of the Thoma Bravo acquisition. Still, thus far, clients have not noticed any negative ramifications of the new owner. Some mentioned disappointment with the departure of some valued senior leadership team members but are pleased and optimistic about the company's future, given that most of their key contacts within the organization have remained.

Table C displays the vendor's strengths and challenges.

TABLE C: KEY STRENGTHS AND CHALLENGES, BOTTOMLINE TECHNOLOGIES

STRENGTHS	CHALLENGES
Robust functionality, scalability, and proven track record at large banks	A diverse client base makes it difficult to create a roadmap that addresses all client priorities
Focus on “delighting” customers with high levels of service and engagement	Some client uncertainty regarding impact of Thoma Bravo acquisition
Forward-looking roadmap with strong focus on building a more comprehensive payments ecosystem	

Source: Aite-Novarica Group

CONCLUSION

Banks:

- Maintaining the status quo and failing to invest in digital transformation will likely lead to your bank falling behind the competition.
- Banks with older legacy solutions should consider replacing their cash management platforms. When evaluating vendor solutions, ensure they have the right functionality to service your client base and any areas you look to for growth. Beyond functionality, ensure the UX is modern and flexible with embedded analytics for greater personalization. Finally, look at platform extensibility, an open architecture, a forward-looking roadmap, and a vendor culture that aligns with your organization.
- There is always more work to be done, even among banks that recently replaced their cash management platforms. These banks should work with their technology partners to enhance their integrated payables capabilities, establish tighter integration with ERPs, build out corporate-facing APIs, and establish more fintech company partnerships.

ABOUT AITE-NOVARICA GROUP

Aite-Novarica Group is an advisory firm providing mission-critical insights on technology, regulations, strategy, and operations to hundreds of banks, insurers, payments providers, and investment firms—as well as the technology and service providers that support them. Comprising former senior technology, strategy, and operations executives as well as experienced researchers and consultants, our experts provide actionable advice to our client base, leveraging deep insights developed via our extensive network of clients and other industry contacts.

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