Payments Modernization in Retail Banking

DECEMBER 2020

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IMPACT POINTS

- The profitability of the traditional payments business stands at a crossroads. The combined forces of fierce competition, regulatory interventions, and necessary investments in infrastructure and compliance put operating margins under pressure. At the same time, the pandemic has boosted the adoption of digital payments, creating new opportunities for banks and other payment companies. This Aite Group report describes market trends for retail payments and assesses the urgency around modernization of the payment infrastructure. It is based on interviews with leading retail banks around the world.
- Banks emphasize the importance of investment in the modernization of their payments platforms to meet the increasing competition in the payments value chain. New entrants have disrupted the status quo in retail payments and forced banks to redefine their strategies to meet new challenges and stay competitive.
- Banks foresee a significant impact on revenue if they do not adapt and invest in payments modernization. Based on the survey, Aite Group estimates revenue at risk for retail banks of 10% to 15% of retail bank payments revenue, or US$100 billion to US$150 billion globally.
- Banks indicate that price compression is their greatest revenue threat. Many retail payment services are becoming commodities, with price as the main distinguishing factor. As a result, nearly two out of three banks said that they are looking to shift their pricing model from a focus on transactional services to a focus on value-added services (VAS).
- Banks see clear benefits of payments modernization projects, with greater flexibility in future product offerings cited as the most prominent benefit. But payments modernization also supports quicker time to market for new products, improved infrastructure for managing compliance and operational needs, and the ability to offer more VAS.
- Monetizing payment data is mentioned as a potential large opportunity for banks, but most are still reluctant to use customer data for commercial services. Compliance with data protection legislation and fear of reputational damage make it difficult for banks to monetize the opportunity, in particular in Europe.

INTRODUCTION

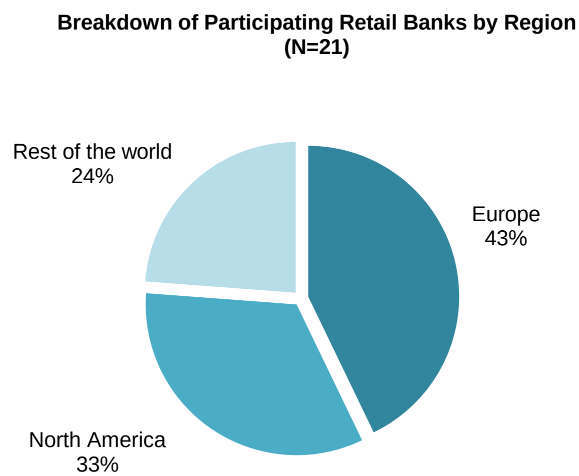
The retail payments business is in a state of transformation. As financial institutions are faced with diminishing profitability of their payments businesses and increasing competition from new entrants, it has become necessary to reevaluate current infrastructure and payments capabilities. Banks are investing in their payments infrastructure to maintain their current clients and compete for new business, while reducing costs and maintaining compliance obligations. The questions are: What are the priorities for payments modernization, and how are banks managing the changes within an already challenging environment?

This Aite Group report describes market trends for retail payments and assesses the urgency around modernization of the payment infrastructure. It is based on interviews with leading retail banks around the world.

METHODOLOGY

Aite Group conducted an interview-based study of 21 Tier-1 retail banks in North America, Europe (European Economic Area), and other regions around the world. Figure 1 provides a breakdown of the interviews by region.

Figure 1: Banks Interviewed by Region



Source: Aite Group interviews with 21 retail banks, August to October 2020

Interviewees were executives responsible for payments in strategic, business, or operational roles. Nine banks were listed in the top 20, and 17 banks were listed in the top 100 of the largest banks in the world in terms of assets.

Aite Group also leveraged its existing research as well as reliable public sources. Given the size and structure of the research sample, the data reported here are considered to be a directional indication of conditions in the market.

MARKET TRENDS IN RETAIL PAYMENTS

The payments space is changing rapidly as a result of four market trends (Table A).

Table A: The Market

Market trend	Market implications
Digital payments growth	The payments mix is permanently shifted toward digital channels. Bank revenue is being threatened by a shift from cards to alternative payments. Merchant acceptance costs are increasing.
Commoditization of payment services	Increasing competition, from peers and from new entrants, has led to strong margin pressure, with many services becoming commodities—with price as the main distinguishing factor. Banks are looking for new markets and customer segments to sustain growth and profitability. Major players are buying scale and market share, as evidenced by intense merger and acquisition (M&A) activity in recent years.
Regulation creating challenges and opportunities for banks	Open banking and APIs are enabling increased cooperation between banks and fintech companies. Regulation is driving increased costs and decreased revenue.
Consumers demand control	Merchants are offering more payment options and personalization of the shopping experience. Rewards are often a critical component in consumer decisions about which payment method to use.

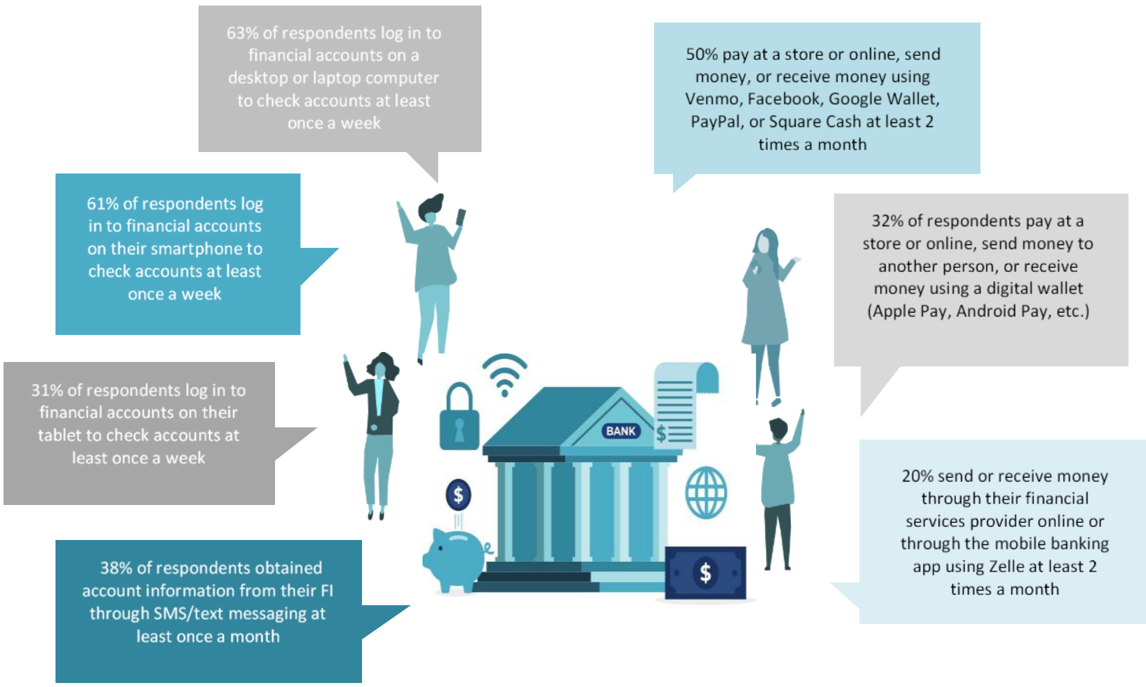
Source: Aite Group interviews with 21 retail banks, August to October 2020

DIGITAL PAYMENTS GROWTH

Payments have been in a period of significant change for a number of years, on a journey from cash and checks to electronic payments, with online and in-app purchases representing an ever-greater share of consumer spend. In recent years, industry players have introduced new payment rails and new experiences, real-time payments have become increasingly available in markets worldwide, and consumers have continued to demand greater control, convenience, and security for their payment transactions.

An Aite Group survey in early 2020 showed that a significant percentage of U.S. consumers were transacting digitally on a regular basis (Figure 2). Thirty-two percent of respondents use a digital wallet (e.g., Apple Pay, Android Pay) for payments or transfers, 50% use an electronic payment provider (e.g., Venmo, Square Cash) at least twice a month for in-store or online purchases, and 20% send or receive money via Zelle each month.[1]

Figure 2: Digital Consumer Interactions



Source: Aite Group's survey of 2,413 U.S. consumers, Q1 2020

There are several strong drivers of digital payments volume growth: the conversion of cash into digital payments, the digitalization of commerce, and the opening of new acceptance points.

CONVERSION OF CASH INTO DIGITAL PAYMENTS

Personal consumption expenditures made in cash globally represented turnover of US$16.8 trillion in 2016, providing an enormous opportunity for growth. According to McKinsey, cash transactions are expected to decrease from 69% of total transactions in 2019 to 64% to 65% in 2020, decreasing nearly five times faster than in previous years, largely due to the impact of the COVID-19 pandemic.[2] In mature card markets around the world, contactless cards have reached widespread acceptance, providing a fast and convenient alternative to cash for smaller-ticket payments. Mobile wallets continue to increase in popularity, with Alipay and WeChat Pay leading the way, with over 1 billion users each.

1. See Aite Group's report *Attracting and Retaining the Digital-First Customer*, June 2020.

2. "The 2020 McKinsey Global Payments Report," McKinsey & Company, October 2020, accessed October 29, 2020, https://www.mckinsey.com/industries/financial-services/our-insights/accelerating-winds-of-change-in-global-payments.

DIGITIZATION OF COMMERCE

Digital commerce is an increasingly important component of retail commerce, with penetration in developed markets ranging from 9% in Japan to 22% in the U.K. to 35% in China.[3] A large share of this growth is driven by the mobile channel, requiring convenient and secure payment solutions for consumers to pay anytime and anywhere. Banks need to compete with the digital transaction expectations set by providers like Uber and Amazon, that offer integrated, holistic experiences for which the payment "just happens."

NEW ACCEPTANCE POINTS

The digital revolution has created new channels for payment card acceptance. Mobile point-of-sale solutions from players such as Square have enabled small retailers and micromerchants to accept card payments on their mobile devices, providing an avenue to increased sales volume in a world where cash usage is decreasing. Instant person-to-person payments are becoming mainstream, and both Visa (with Visa Direct) and Mastercard (with Mastercard Send) have introduced near real-time card-based solutions to compete with account-based alternatives. The "internet of everything" is opening new channels that require frictionless payment solutions, such as connected cars and smart sensors.

ACCELERATION BY THE PANDEMIC

The COVID-19 pandemic in 2020 has accelerated the shift to digital, both because consumers are buying more supplies online from isolation at home and because of merchants' and consumers' desire to use touchless or remote payment options for in-person purchases to minimize the risk of exposure to the virus. The pandemic lockdowns and safety measures resulted in both reduced numbers of in-store shoppers as well as reduced currency production at the U.S. Mint, to the point that merchants in the U.S. have experienced shortages of currency.[4] Merchants have encouraged ordering ahead (and paying by phone before pickup), buying online and picking up in store, and using delivery services. Approximately 20% of merchants in the U.S. and 60% of merchants in the U.K. have even effectively stopped accepting cash altogether during the pandemic.[5]

What the COVID-19 pandemic has done is push those consumers who might have still been more comfortable using cash or preferred in-person interactions to try digital payments and/or e-commerce options. Contactless payments have seen a big boost, as have subscription services, online grocery delivery services, and mobile wallet payments. Once the pandemic is over (in the

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3. "Payments, Processors, & Fintech Report," Credit Suisse, January 2020, accessed October 29, 2020, https://research-doc.credit-suisse.com/docView?language=ENG&format=PDF&sourceid=csplusresearchcp&document_id=1082106811&serialid=9ItaQaLeKMYkTfzB0rHonfefWNL6W5uABHoXHk5EVRA%3D.

4. Alina Selyuk, "Exact Change Please: Walmart, Kroger, CVS Are Feeling the Coin Shortage," NPR, July 2020, accessed October 28, 2020, https://www.npr.org/sections/coronavirus-live-updates/2020/07/16/892060801/exact-change-please-walmart-kroger-cvs-are-feeling-the-coin-shortage.

5. Linda Poon, "Coronavirus Hastens the Rise of the Cashless Economy," Bloomberg, July 2020, accessed October 28, 2020, https://www.bloomberg.com/news/articles/2020-07-14/the-costs-of-an-increasingly-cashless-economy.

hopefully not-too-distant future), a percentage of these forced converts will most likely continue using digital payments, having been sold on the benefits of digital over cash or check.

MARKET IMPLICATIONS

The payments mix is permanently shifted toward digital payments, with consumers demanding even more streamlined purchase experiences. Payments providers need to deliver the tools merchants need to meet consumer expectations, including providing alternative payment capabilities, purchase financing options, and security of payments and personal data.

Bank revenue is being negatively impacted by the shift away from cards, with account-based alternative payments options such as Alipay or Venmo often coming in at a lower cost to the merchant and thus reduced income to the bank. Banks must explore VAS that provide new revenue opportunities while supporting consumers' desires to use alternative payments.

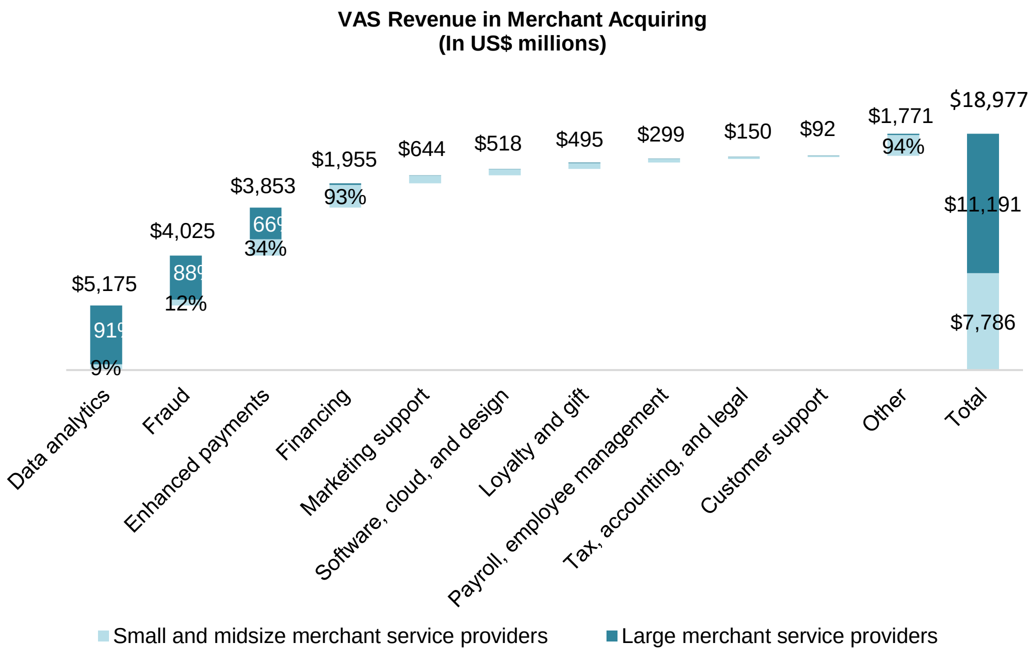
COMMODITIZATION OF PAYMENT SERVICES

Increasing competition, from peers and from new entrants, has led to strong margin pressure, with many services becoming commodities—with price as the main distinguishing factor. As payments is a capital-intensive business with a high ratio of fixed costs to variable costs, payment firms have focused on buying scale and market share, as evidenced by major M&A activity in recent years.

One example is merchant acquiring, where players have been focused on scale, buying volume and market share. After the megamergers of 2019 (FIS/Worldpay, Fiserv/First Data, Global Payments/TSYS), there is continued consolidation (e.g., Worldline buying Ingenico and the merger of SIA and Nexi in Italy.) By building massive scale, processors are aiming to be better positioned to serve clients across different markets and out-price their competitors.

However, agile fintech competitors, such as Adyen, Stripe, and Braintree, have shown that (online) merchants are willing to pay a premium price for merchant services that create value and optimize revenue rather than cost. The success of these companies has forced traditional acquirers (mainly banks) to change their strategy and focus more on VAS (Figure 3).

Figure 3: VAS Revenue in Merchant Acquiring



Source: McKinsey

According to McKinsey, payment-related VAS comprising data analytics, fraud prevention, and enhanced payments services account for about 70% of all VAS provided by merchant services providers, or about US$13 billion.

MARKET IMPLICATIONS

The commoditization of payments makes banks and other payment firms look for new markets and merchant segments to increase scale and sustain growth and profitability. The business model will shift from a primarily transactional model to a focus on VAS, creating more value for customers rather than shaving off the last cent in transaction pricing.

REGULATION CREATING CHALLENGES AND OPPORTUNITIES FOR BANKS

Regulation and compliance are ongoing challenges for banks and payment providers—the pace of which has increased since the 2008 financial crisis. While governments have the responsibility to protect their citizens by providing rules and guidance for the financial system, those rules are constantly evolving, and financial services providers dedicate a significant amount of money and manpower to both stay current on the rules as well as to provide proof of compliance.

Regulatory and compliance costs make up a significant percentage of a bank's expense line, with estimates ranging from 5% to 10% of operating costs depending on bank size. That cost is separate from the US$321 billion that banks globally paid in fines from 2008 to 2018.[6] The burden of regulatory compliance is significant—not just in terms of penalties and operating costs but also in terms of reduced budgets for product development and infrastructure projects. Most bankers are intimately familiar with the approach to the annual technology budgeting process, whereby regulatory and compliance projects get priority and all other technology initiatives jockey to get a share of whatever funds remain.

While the cost of staying compliant is already a burden, regulation also has a large impact on bank revenue. For instance, in Europe, Australia, and other markets around the world, regulators have capped interchange fees with a large detrimental effect on retail bank revenue. In India, the central bank has capped the fees on debit card transactions at the point of sale in order to promote digital transactions.

Antitrust concerns are also omnipresent as regulators try to ensure there is ample space for competition in payments. The U.S. Department of Justice scrutinizes all merger deals and frequently raises concerns or applies constraints to such deals, as in the case of its current investigation of Visa's planned acquisition of Plaid, which the department is concerned could stifle competition in the payments industry.[7] European regulators are bringing antitrust charges against Amazon, charging that the company is unfairly using third-party merchant data to boost the sales of Amazon's own products.[8]

MARKET IMPLICATIONS

The ever-increasing regulatory oversight placed on banks globally is driving increased operating and penalty costs for financial institutions. Regulations may also directly lead to decreased revenue as fees are reduced or eliminated, as well as indirectly as product-enhancing technology projects are deferred in favor of compliance projects.

Regulatory-driven open banking requirements are enabling increased cooperation between banks and fintech companies, providing consumers greater control over their financial lives, supporting consumer choice of financial institutions, and enabling a wider range of payment options.

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6. "Banks Trimming Compliance Staff as $321 Billion in Fines Abate," Bloomberg, March 2017, accessed October 28, 2020, https://www.bloomberg.com/news/articles/2017-03-23/banks-trimming-compliance-staff-as-321-billion-in-fines-abate.

7. "Visa's Planned Purchase of Plaid Faces Antitrust Scrutiny at the Justice Department," October 27, 2020, accessed October 28, 2020, https://www.wsj.com/articles/visas-planned-purchase-of-plaid-faces-antitrust-scrutiny-at-the-justice-department-11603819000.

8. "Amazon Set to Face Antitrust Charges in European Union," June 11, 2020, accessed October 28, 2020, https://www.nytimes.com/2020/06/11/technology/amazon-antitrust-european-union.html.

CONSUMERS DEMAND CONTROL

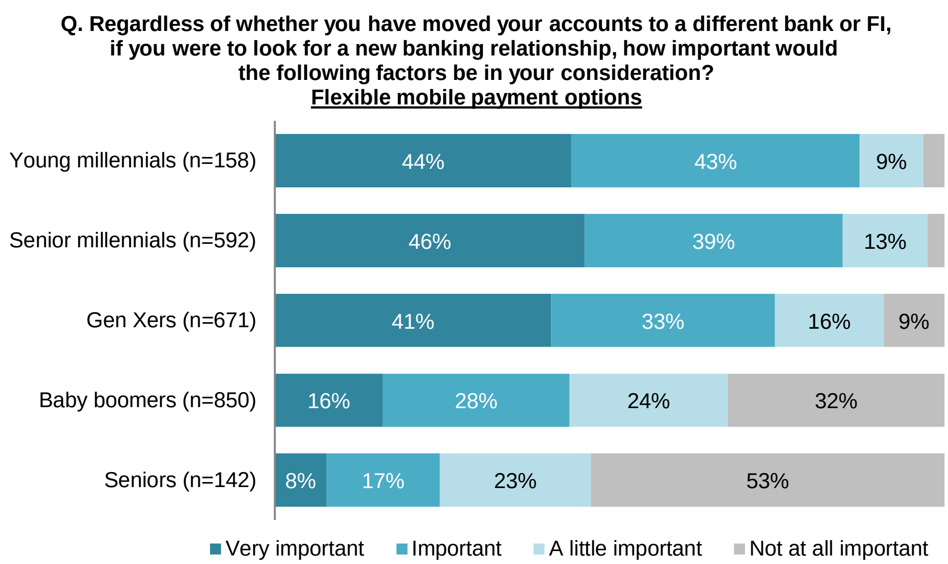
With new payment options becoming available all the time, consumers are becoming more sophisticated about their purchase transactions and demanding more control over their payments experiences, both in terms of how they pay as well as when they pay.

CONTROL OF PAYMENT METHOD

Consumers want the ability to choose which payment option they use at the time of interaction, based on the consumer's own mix of factors. Payment choice is increasingly driven by the experience: A consumer might choose to pay a swim instructor via Venmo, the plumber via check, Starbucks via the Starbucks prepaid card, and an online merchant via a travel rewards credit card. And the number of payment options is only increasing: cash and check, bank transfers, debit and credit cards, gift cards, Venmo, PayPal, mobile wallets (funded usually by card), WeChat Pay and Alipay, buy-now-pay-later options such as Klarna and Afterpay, and many more.

Flexibility of mobile payment options is important or very important to the vast majority of young millennials, senior millennials, and Gen Xers (87%, 85%, and 74%, respectively) and registers as important for a large number of baby boomers as well (Figure 4).[9] Mobile payments and the freedom to pick and choose are clearly key drivers of banking decisions for most consumers regardless of generation.

Figure 4: Importance of Flexible Mobile Payment Options



Source: Aite Group's survey of 2,413 U.S. consumers, Q1 2020

Rewards can be a driver of payments choice as well; consumers may choose their travel rewards card for large-ticket purchases to earn airline points, their Amazon Visa card to earn cash back on

9. See Aite Group's report *Attracting and Retaining the Digital-First Customer*, June 2020.

Amazon purchases, and their Starbucks card to earn stars on their coffee purchases. It is important to note that rewards preferences may change as well; during the current pandemic, travel has become much more difficult and money is tighter for many consumers, indicating that cardholders may switch away from travel cards toward those offering cash back rewards.

CONTROL OF PAYMENT TIMING

Consumers have the option to pay via a growing variety of payment methods and increasingly have control over when they pay. Banks have long offered customers the ability to schedule bill payments for a later date, but many now offer real-time bill payments as well. Zelle payments are (often) delivered in real time, but bank customers can still choose bill pay or even check if they require different timing. Many point-of-sale purchases can now be conveniently financed via buy-now-pay-later providers, such as Klarna or Afterpay, allowing consumers to make needed purchases when they may not have adequate cash at hand. Even some credit card issuers are offering creative financing options, such as Plan It by American Express, in which cardholders can choose to pay off large purchases over a three- to 24-month period at a rate typically much lower than the normal annual percentage rate on consumer loans.

MARKET IMPLICATIONS

Merchants are responding to consumer demand by offering more payment options at checkout, which at times leads to the challenge of clutter at the buy button. However, merchants are increasingly willing to add new payment methods if it achieves the objective of increased sales and satisfied customers.

Rewards are often a critical component in the consumer decision about which payment method to use for a purchase. Payment providers need to constantly reevaluate their rewards programs to ensure that the offers and loyalty drivers are aligned with ever-evolving consumer preferences.

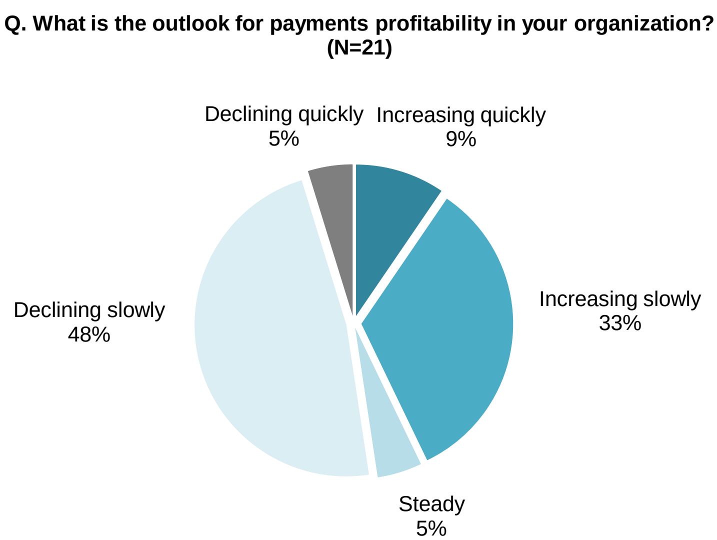
PROFITABILITY DRIVERS FOR RETAIL PAYMENTS

The profitability of the traditional payments business stands at a crossroads. The combined forces of fierce competition, regulatory interventions, and necessary investments in infrastructure and compliance put operating margins under pressure. For instance, the credit cards business has suffered in some markets as a result of the health crisis, as customers reduce their credit card spending to save money for difficult times ahead. In Australia, for example, credit card spending (including charge cards) declined more than 14% in August 2020 compared to the previous year.[10]

At the same time, the pandemic has boosted the adoption of digital payments at the expense of cash, and payment volume has shifted from point-of-sale to higher-margin online commerce. This development creates a large opportunity for banks and payment companies that have invested in modern technology and are focused on providing VAS to their customers.

Overall, banks have differing views on the profitability of the payments business (Figure 5).

Figure 5: Retail Payment Profitability Outlook



Source: Aite Group interviews with 21 retail banks, August to October 2020

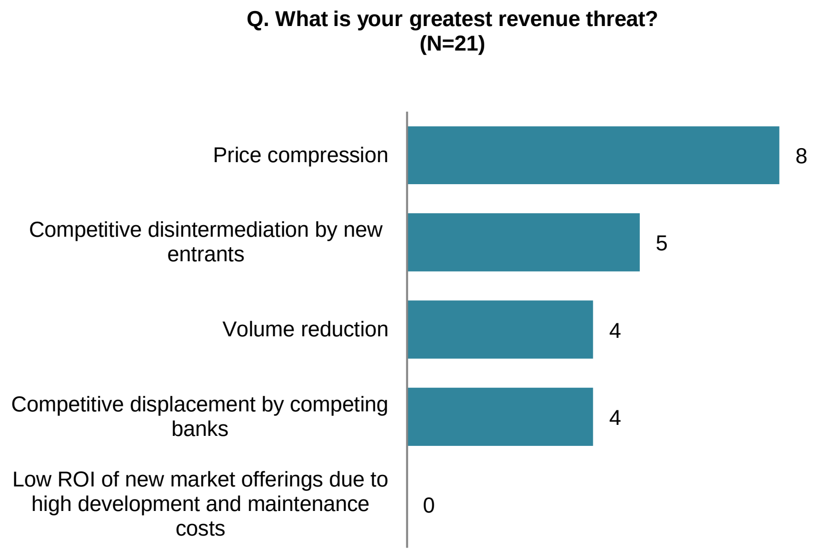
The distribution between banks that see their profitability increasing and those that see profitability declining is about even. Responses will, of course, depend on the market position of the bank and which revenue and cost components are included in the analysis. But banks agree that continuing on a "business as usual" approach is not an option in today's dynamic and challenging environment. So, what are the opportunities and threats to payment revenue and profitability for banks?

10. "Retail Payments August 2020," Reserve Bank of Australia, October 2020, accessed October 26, 2020, https://www.rba.gov.au/statistics/frequency/retail-payments/2020/retail-payments-0820.html.

OPPORTUNITIES AND THREATS TO PAYMENT REVENUE

Banks indicate that price compression is their greatest revenue threat, followed by competitive disintermediation or displacement, and then volume reduction (Figure 6).

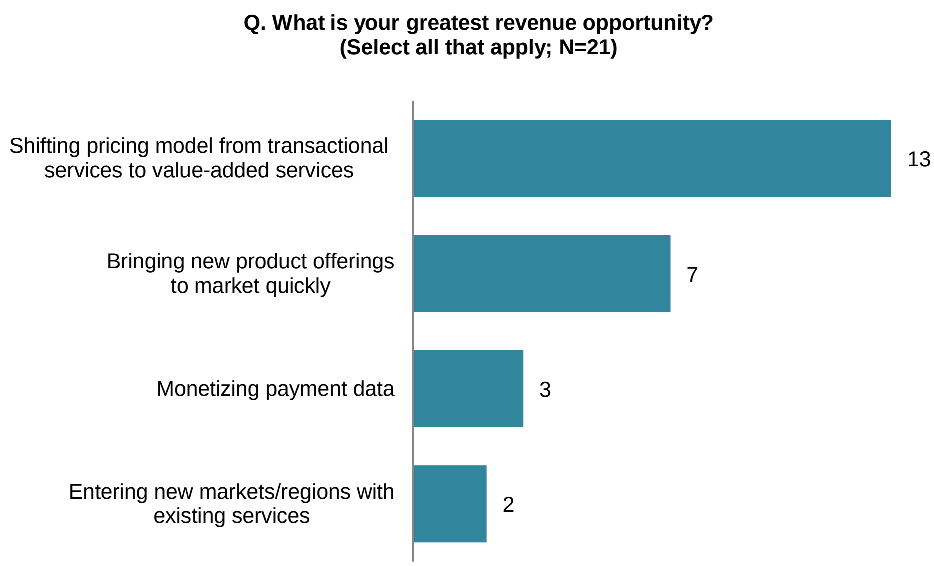
Figure 6: Greatest Revenue Threats to Retail Payments



Source: Aite Group interviews with 21 retail banks, August to October 2020

This result fits the view expressed by banks that many retail payment services are becoming commodities, with price as the main distinguishing factor. Banks say that they increasingly focus on VAS rather than sheer transaction volume (Figure 7).

Figure 7: Revenue Opportunities in Retail Payments



Source: Aite Group interviews with 21 retail banks, August to October 2020

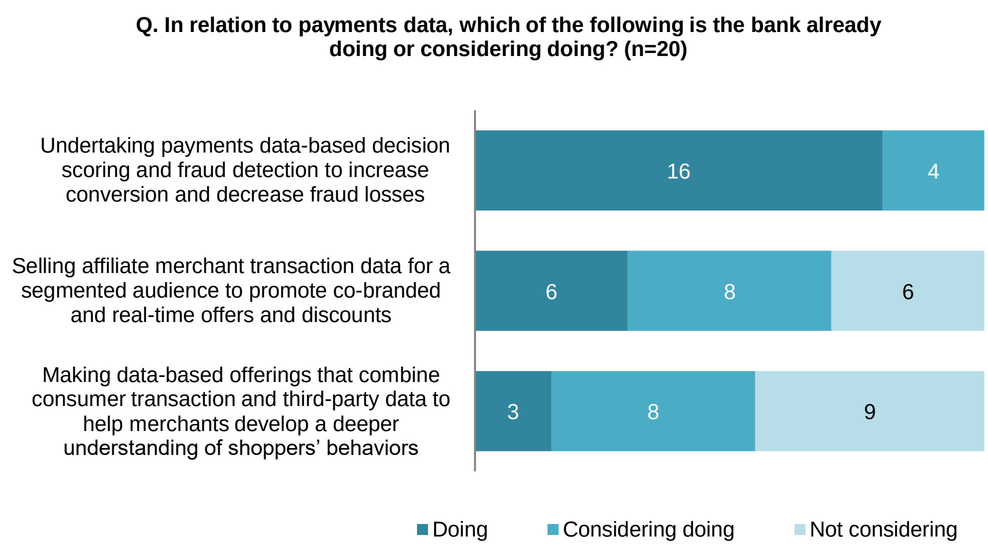
Nearly two out of three banks said they are looking to shift their pricing model from a focus on transactional services to a focus on VAS.

Banks also find it important to bring new product offerings to market quickly, and speed to market is generally considered an important criterion for investing in payment modernization. However, as one respondent pointed out, being a fast follower for new innovations can be enough as long as the core product offering is at par with the competition.

Monetizing payment data is mentioned as a potential big opportunity for banks, but most are still reluctant to use customer data for commercial services. Compliance with data protection legislation and fear of reputational damage make it difficult for banks to monetize the opportunity, particularly in Europe.

Payments data are being heavily leveraged for undertaking data-based decision scoring and fraud detection (Figure 8). All banks interviewed are either already leveraging payments data or considering doing it in the near future. However, as mentioned above, banks are more cautious in their approach to selling customer transaction data.

Figure 8: Leveraging Payments Data



Source: Aite Group interviews with 21 retail banks, August to October 2020

When payments data are monetized, banks focus on behavioral or aggregated data rather than data that are linked to an individual customer.

IMPACT OF COMPETITION ON THE PAYMENT BUSINESS

Banks emphasize the importance of investment in the modernization of their payments platforms to meet the increasing competition in the payments value chain. Gone are the days when retail banks only had to watch their peers in a largely domestic and often oligopolistic environment. New entrants have disrupted the status quo in retail payments and have forced banks to redefine their strategies to meet new challenges and stay competitive. Table B illustrates the challenges that new entrants bring to retail banks' payments business, as well as the factors that mitigate or diminish the risk for each category of player. The table also provides a qualitative assessment of the potential impact (high, medium, or low) on payment revenue based on the feedback received from banks.

Table B: Impact of Various Competitors on Retail Banking Revenue

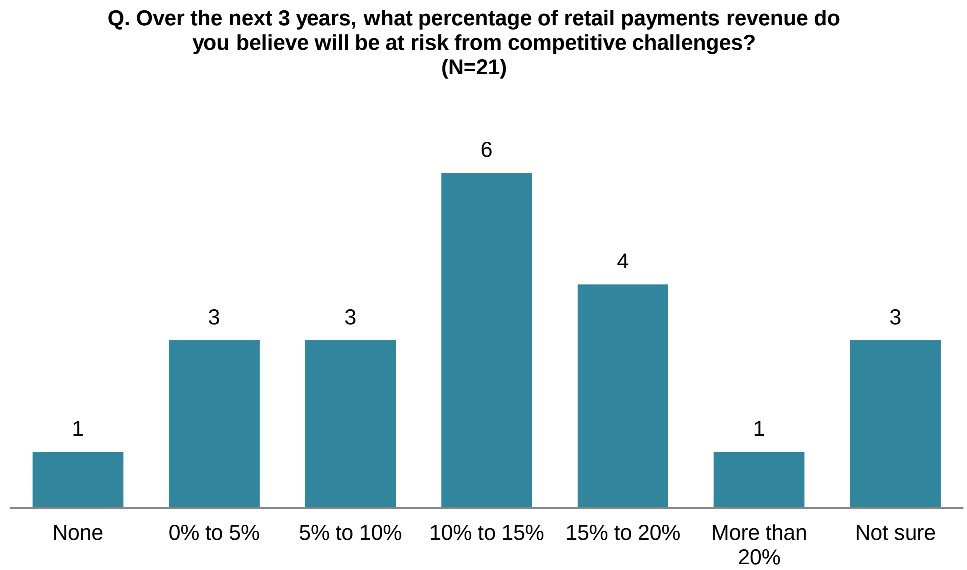
Category	Description	Challenges to retail banks	Mitigating factors	Potential impact
Neobanks	Digital "challenger" banks (e.g., N26, Revolut, Chime)	Neobanks are offering free checking and payments, triggering a "race to the bottom" on pricing. They are attracting young customers as well as customers in profitable niche segments.	Neobanks' business model is not sustainable in the long run. They are beginning to charge for services and develop into regular banks.	Medium
Big tech firms	Global technology firms that expand into payments (e.g., Google, Apple, Facebook, Amazon, Alipay)	Tech firms are integrating payments as an enabler into consumer apps, leveraging their large customer base and deep pockets. Tech firms are focusing on monetization of data rather than direct payments revenue. Alipay and WeChat Pay already dominate payments in China and are expanding to other markets. Payments are account-based, leading to a reduction of interchange fee income for card issuers.	Google, Apple, Facebook, and Amazon have not yet entered squarely into payments, focusing more on peripheral products (e.g., Apple Pay, Google Pay). However, the threat of further penetration into payments is real; see Apple's credit card and its acquisition of Mobeewave.	High

Category	Description	Challenges to retail banks	Mitigating factors	Potential impact
Nonbank payment companies	Specialized payment players (e.g., PayPal, Adyen, Stripe, Square)	Payment service providers (PSPs) are focusing strongly on revenue optimization rather than cost, winning market share in merchant acquiring. These competitors are agile and can develop quickly using their modern technology stack. PSPs are extending in the value chain (e.g., with credit products, full-service acquiring).	Traditional banks/acquirers can offer a wider range of services to merchants (e.g., cash management, treasury).	High
Fintech firms	Nonbank technology firms that focus on the customer experience and develop payments apps, but don't process payments	Fintech firms are focusing on value creation for the customer and monetization of data. Banks may be relegated to commoditized services, such as payment processing.	Fintech firms are seen as niche players. They are natural partners for banks to enable new customer experiences for bank customers, and to tap into new customer relationships. Banks keep the account relationship.	Low

Source: Aite Group interviews with 21 retail banks, August to October 2020

Banks have differing views as to how much revenue might be at risk from competitive challenges in the coming three years, but most respondents foresee a significant impact on revenue if their banks do not adapt and invest in payments (Figure 9).

Figure 9: Impact of Competitive Pressures on Retail Payments Revenue



Source: Aite Group interviews with 21 retail banks, August to October 2020

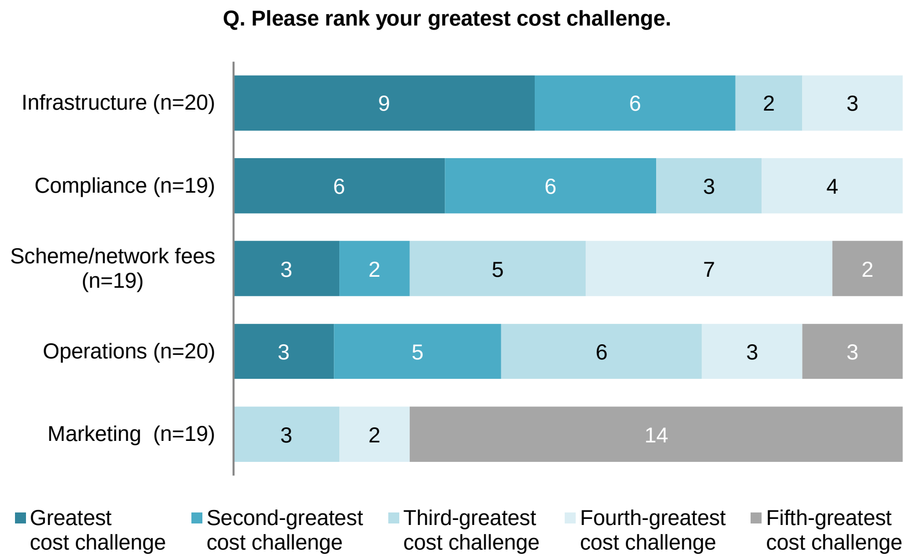
The median for this sample is a revenue at risk of 10% to 15% of retail bank payments revenue, or US$100 billion to US$150 billion globally.[11]

COST CHALLENGES

On the cost side, banks see investments in infrastructure and the cost of compliance as the main challenges (Figure 10).

11. Based on 2019 global payments revenue figures from McKinsey, see "The 2020 McKinsey Global Payments Report," October 2020, accessed October 25, 2020, https://www.mckinsey.com/industries/financial-services/our-insights/accelerating-winds-of-change-in-global-payments.

Figure 10: Cost Challenges in Retail Payments



Source: Aite Group interviews with 21 retail banks, August to October 2020

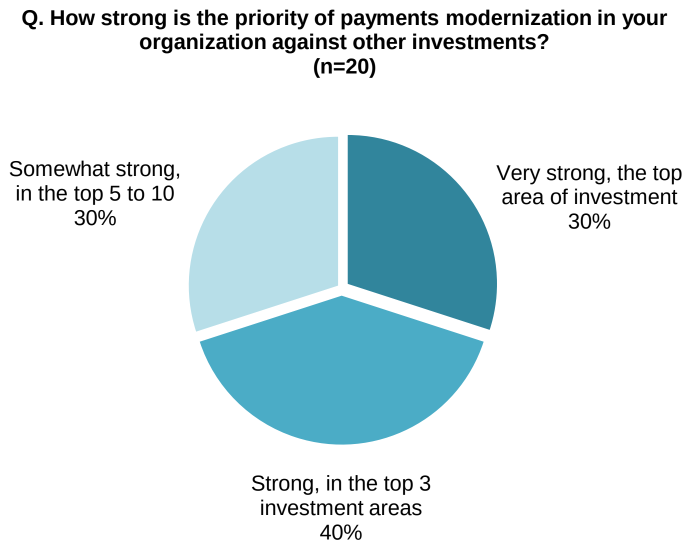
Compliance is always top of mind for banks, for which they need to both protect their reputation and avoid the large fines that regulators have imposed in recent years. As a result, many banks have adopted a “zero risk” policy in terms of compliance.

Infrastructure investment is the number one cost challenge for banks. The challenge is how to modernize the infrastructure in a fast-changing environment while managing legacy systems and processes at the same time. The next section outlines the priorities for payments modernization by banks.

MODERNIZING PAYMENTS TO CREATE NEW VALUE

Given the opportunities and challenges to the bottom line outlined in the previous section, banks are strongly motivated to invest in payments modernization (Figure 11).

Figure 11: Importance of Payments Modernization

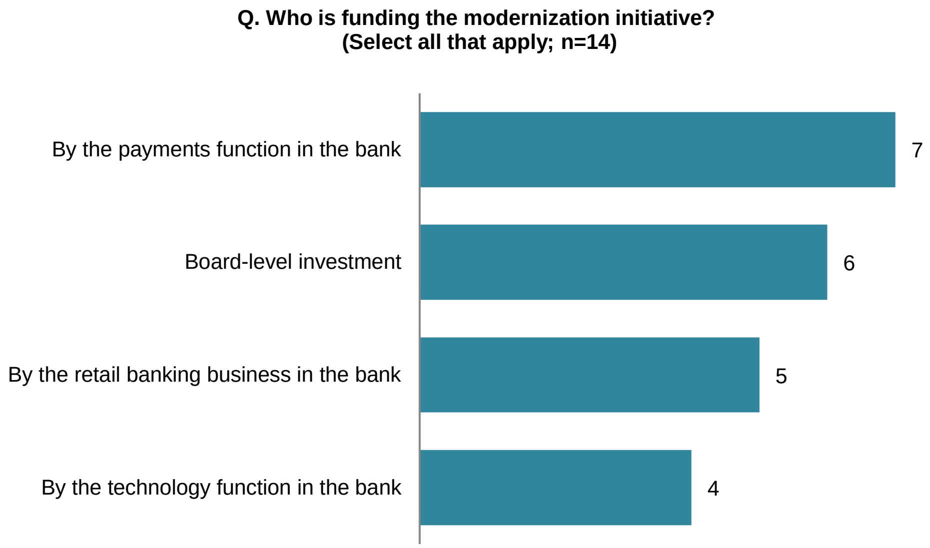


Source: Aite Group interviews with 21 retail banks, August to October 2020

Payments modernization appears at least in the top five to 10 priorities for all retail banks interviewed. For five banks, it is the top area of investment, and another eight see it as one of the top three investment areas.

When asked how the funding is organized, banks appear to have different investment governance structures for payments (Figure 12).

Figure 12: Investment Governance



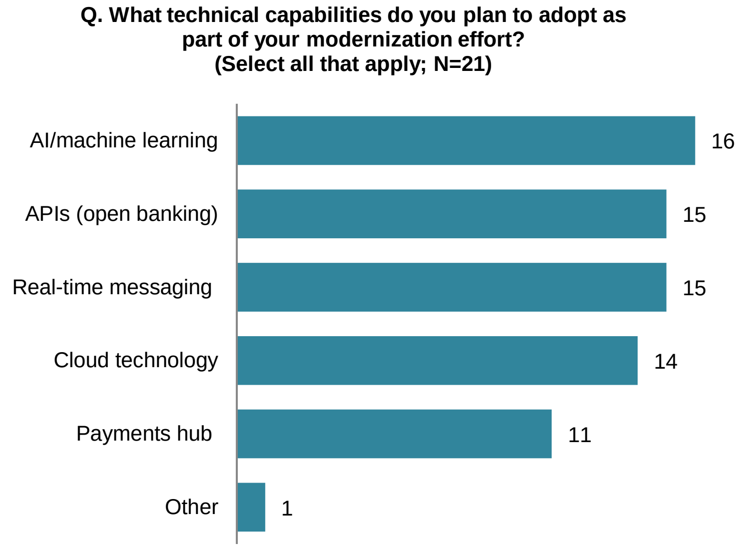
Source: Aite Group interviews with 21 retail banks, August to October 2020

It is interesting to note that half of the banks that responded to this part of the survey had a payments function (crossing traditional retail banking and wholesale banking silos) that funded payments modernization initiatives.

KEY AREAS FOR PAYMENTS MODERNIZATION

Banks are modernizing their payments infrastructure across several dimensions to upgrade legacy systems and develop new technical capabilities (Figure 13).

Figure 13: Capabilities Prioritized in the Payments Modernization Effort



Source: Aite Group interviews with 21 retail banks, August to October 2020

Banks are planning to invest in all capabilities that were presented in the survey, with no clear priority among the different categories.

ARTIFICIAL INTELLIGENCE/MACHINE LEARNING

Among the vast range of artificial intelligence (AI) applications in finance, payments looks like one of the best targets to generate return on AI investments. Payment processing is about manipulating large sets of data with highly predictable outcomes, an area in which AI beats human intelligence hands down. AI is set to replace traditional rules-based engines (which use fixed rules based on human experience with past events) by dynamic rules based on real-time analysis of actual data.

Applications of AI in digital commerce payments will include the following:

- **Optimization of the customer experience:** AI can analyze customer behavior during checkout and identify events that may lead to shopping cart abandonment. This information can then be used to adapt the customer journey, either as a next release of the merchant’s payment page, or in real time based on individual customer behavior. AI can also be used to personalize checkout pages to closely suit customer preferences and reduce friction in the checkout process as much as possible. Using natural language processing, AI can help to provide a richer, more personalized service for online consumers.

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- **Fraud detection and prevention:** The field of fraud detection ranks among the prime use cases of AI and machine learning in payments. Large data sets are available to train machines in recognizing fraudulent transactions with high accuracy. According to Visa, AI helped financial institutions prevent an estimated US$25 billion in annual fraud.[12]

- **Improvement of payment acceptance:** AI can be trained to find the most efficient payment routing and messaging paths to increase the probability of payment acceptance by issuers. Rules-based payment routing is replaced by smart routing, finding the most promising payment route (with the highest probability of acceptance) based on transaction type, location, time of day, and other criteria. AI can also dynamically tailor payment formats based on specific issuer system preferences. Stripe, for instance, uses machine learning to determine the most optimal values to provide in each field of a payment message.

- **Automation of back-office operations:** AI can support operations staff in automating time-consuming tasks. For instance, it can sort through documents and images to provide evidence to successfully contest chargeback requests.

- **Reporting and analytics:** Merchants and their PSPs own massive amounts of customer data, including payment data, but the challenge has always been to use that data effectively to improve business performance. With AI, the tools are becoming available to sift through terabytes of data and create actionable marketing insights.

The conclusion is that AI and machine learning will bring countless opportunities to payments and commerce. But the implementation will not be without challenges. For instance, AI needs large sets of reliable data that are not always readily available due to organizational silos or lack of proper data management. Some AI applications may also be restricted by regulation to avoid machine decisions that go against ethical standards. For payments intelligence to go artificial, human expert guidance will be required, and organizations need to invest in training staff to understand AI and work effectively with this new technology.

APIS (OPEN BANKING)

The arrival of the API economy—the commercial exchange of business functions and capabilities using APIs—has greatly facilitated collaboration among different organizations. APIs enable banks and other financial services providers to share data and access third-party applications using common standards. Technology companies have developed API platforms to support banks in their digital transformation. APIs are an integral part of the global open banking revolution that is expected to transform any business area of the financial services space, with payments being impacted the most. Open banking will shift control over data to bank customers, increase competition, and change established bank business models.

12. "Visa Prevents Approximately $25 Billion in Fraud Using Artificial Intelligence," Business Wire, June 2019, accessed October 20, 2020, https://www.businesswire.com/news/home/20190617005366/en/.

Open API banking enables a bank to more flexibly distribute its products through third-party channels provided by fintech partners, facilitating innovation and reducing time to market. The bank can also connect to open APIs of other financial services providers and integrate their products into its own offering. This makes the API technology a strong driver for open banking.

When bank account data became accessible to third-party providers, new products that work across multiple banks could be developed. Examples include the following:

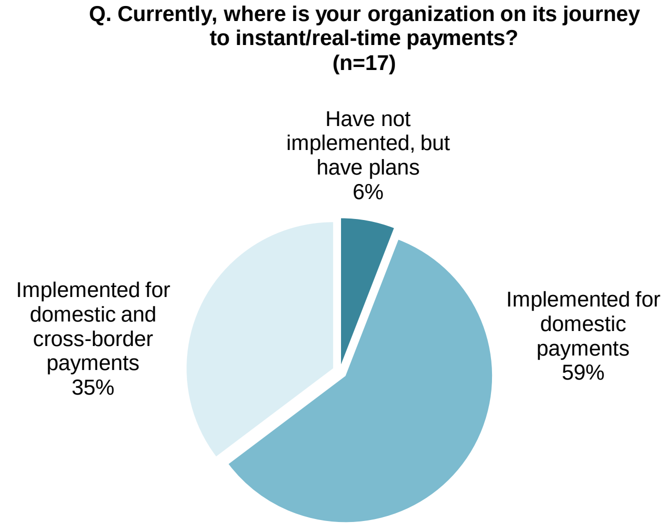
- Products for personal financial management, bank product comparison, and online accounting
- Payment apps to initiate payments directly from a bank account for person-to-person payments, commerce payments, bill payments, and other applications
- Consumer lending products that are based on a credit score built from a consumer's account history
- Authentication services to identify customers using their bank credentials

APIs make banking programmable, opening opportunities for new entrants to innovate and compete with incumbent banks. At the same time, banks can create new value for customers and monetize the API economy.

REAL-TIME MESSAGING

Real time is becoming the norm in banking, not only for payments, but for any interaction with the customer. But payments is very much at the center of real-time payments innovation. With the global rollout of instant (near real-time) payment rails, new use cases become available for payments innovation. Instant payments have a number of advantages over card and ACH rails, as instant payments are immediate, are irrevocable, and allow for the exchange of rich data (important for business-to-business applications). Companies will benefit from new payment methods that leverage instant payment rails to provide faster liquidity, reduce risk, and lower payment cost. Nearly all banks that responded to the survey had already implemented real-time payments, with a minority already supporting cross-border instant payments as well (Figure 14).

Figure 14: Status of Instant/Real-Time Payments Implementation



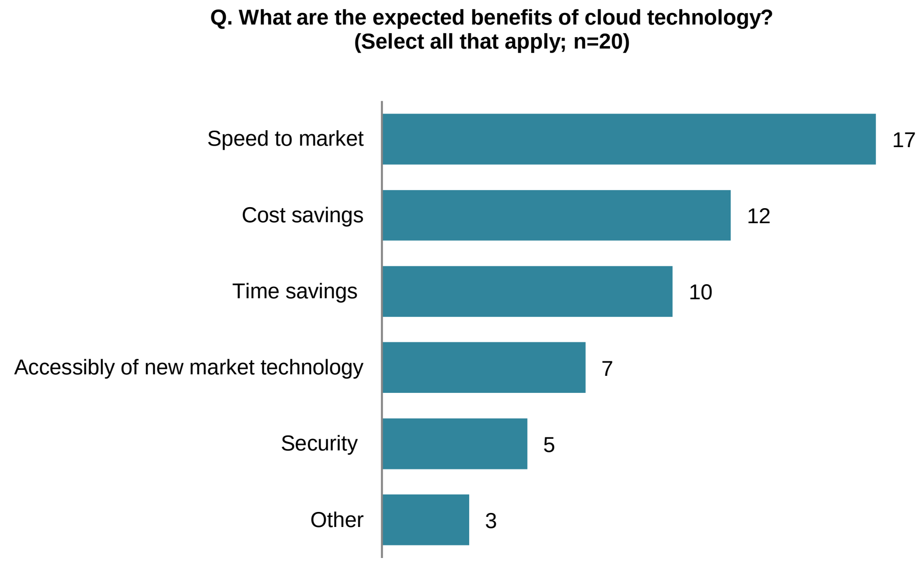
Source: Aite Group interviews with 21 retail banks, August to October 2020

Clearly, instant payments will be at the core of payment innovation for both online and in-store applications, and banks are investing heavily in real-time messaging capabilities. Banks reported investment in real-time messaging and ISO 20022 architecture as one of the most important motivations for payments modernization.

CLOUD TECHNOLOGY

Cloud technology enables banks to run a more cost-efficient operating model while providing the agility and modernity that legacy on-premises models lack. Speed to market and cost savings are mentioned most often as advantages that cloud banking can bring to an organization (Figure 15).

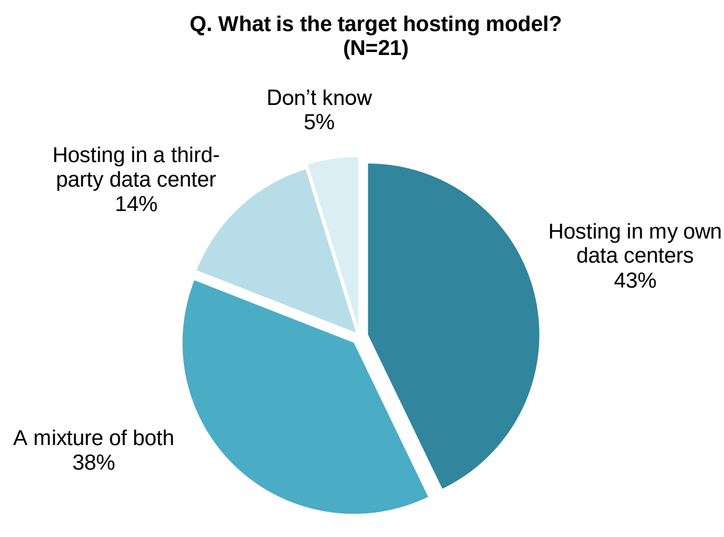
Figure 15: Business Benefits of Moving to the Cloud



Source: Aite Group interviews with 21 retail banks, August to October 2020

Security ranks lowest on the expected benefits, and some banks even said that they have some concerns about the security of cloud applications. However, with cloud providers and vendors offering a choice of deployments—public, private, and hybrid cloud—there are now many new options for banking infrastructure (Figure 16).

Figure 16: Target Hosting Model for Retail Payments in the Cloud



Source: Aite Group interviews with 21 retail banks, August to October 2020

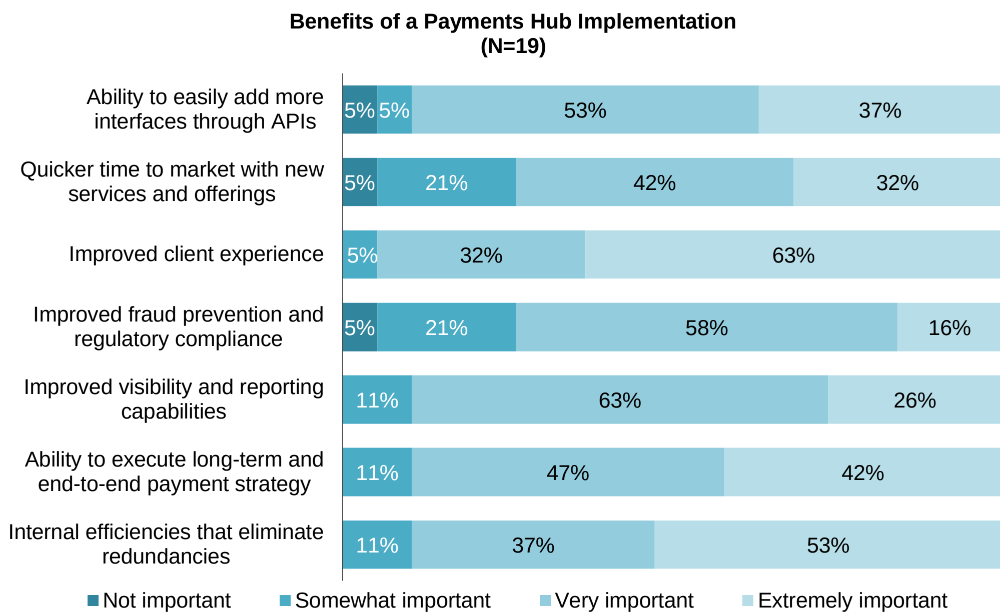
Large banks prefer to host cloud applications in their own data centers rather than hosting in a third-party data center, although mixed models are common as well.

PAYMENTS HUB

Payments hubs are intended to reduce or eliminate redundant systems, such as operations, fraud prevention, and regulatory compliance, that are built into each separate payment system.[13] Payment systems include legacy platforms for processing individual payment types, including checks, ACH, wires, and card, and also new and emerging payment types, such as real-time payments and payments from nonbanks such as PayPal. Payments hubs also provide VAS, such as payments tracking as well as data and analytics about payers and their recipients.

Implementing a payments hub benefits both the bank internally and the bank's clients. Aite Group research among top U.S. banks shows that of the top two benefits reported by banks, one focuses on the bank and one focuses on the end user (Figure 17). While it's not uncommon for a project's ancillary impacts to touch both internal and external bank clients, it is significant that a payments hub truly focuses on both as primary benefactors. Ninety-five percent of banks report that an improved client experience is either very or extremely important when considering the benefits of a payments hub. This client experience includes the ability to have a single login and a view into all payments activity, with the ability to utilize the rich data in new ways. Creating operational efficiencies and removing redundancies is also a top benefit, with 90% of banks reporting this as very or extremely important. A payments hub has the potential to reduce significant expenses within the bank by eliminating duplicate workstreams and operational needs.

Figure 17: Key Benefits of a Payments Hub Implementation



Source: Aite Group survey of 19 of the top 60 U.S.-based financial institutions, December 2017 and January 2018

13. See Aite Group's report, *Payments Hubs: What Are They and Why?*, March 2018.

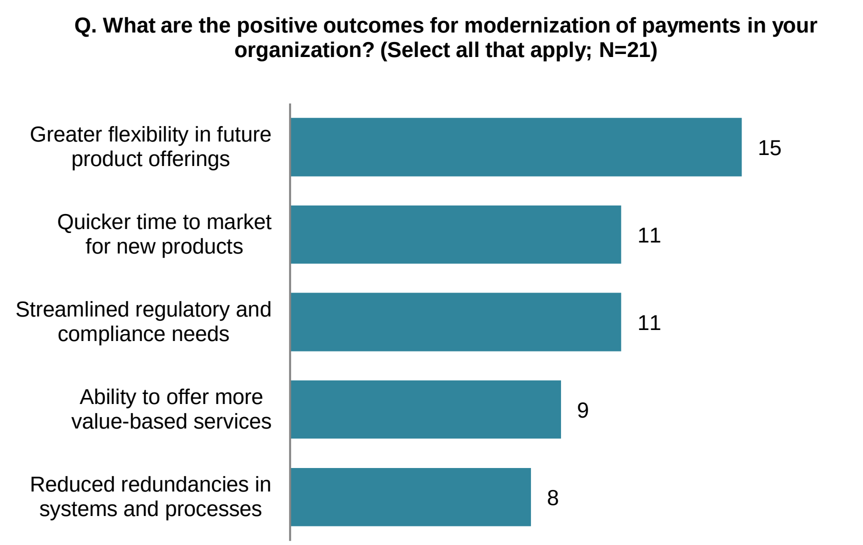
Banks also report that their ability to execute a long-term end-to-end payment strategy depends on the implementation of a payments hub. With a payments landscape that is going through an accelerated revolution, effective strategy execution through a payments hub can become a competitive advantage for banks that can react and adapt to the market quickly. Other benefits include the following:

- Quicker time to market with new services and offerings by having the infrastructure to introduce new functionality quickly, including via APIs
- Improved fraud prevention and regulatory compliance by implementing requirements once—not multiple times across each payment stream
- Improved visibility and reporting capabilities through centralized and normalized data for both the bank and end users, which can assist in investment, risk, and forecasting decisions

RESULTS OF PAYMENTS MODERNIZATION

Banks see clear benefits of payments modernization projects. Most banks have already engaged in payments modernization projects for at least a year, and they see clear benefits from these projects (Figure 18).

Figure 18: Benefits of Payments Modernization



Source: Aite Group interviews with 21 retail banks, August to October 2020

Banks see greater flexibility in future product offerings as the most prominent benefit. But payments modernization also supports quicker time to market for new products, improved infrastructure for managing compliance and operational needs, and the ability to offer more VAS.

MAKE OR BUY?

Banks generally prefer to buy software solutions (in particular, cloud-based solutions), rather than developing solutions in house. Only systems that are mission critical are developed or maintained in house. However, the overarching principle for any make or buy decision is that the bank remains in control of the customer experience.

When buying software, banks prefer to speak about partnerships rather than pure vendor relationships. Buying criteria include the following:

- Time to market
- Scalability across different markets
- Openness to third parties to enrich offers
- Quick releases of new functionality

Technology vendors in the payments space should provide flexible, cloud-based solutions to banks to support them on their modernization journey. Banks value partnerships over “make or buy” decisions, which creates an opportunity for vendors to establish a longer-term relationship with their bank clients.

CONCLUSION

Banks:

- Banks should invest in payments modernization to protect their market share against new competitors and develop new business. Continuing with a business-as-usual scenario is not a viable option and will expose banks to a significant risk (10% to 15%) of revenue loss.
- Banks should consider moving from a transactional pricing model to a model that is focused on VAS. That way, banks can mitigate the risk of price compression for commoditized payment services and focus on value creation for their clients rather than on minimizing costs.
- There are several strong drivers of digital payments volume growth: the conversion of cash into digital payments, the digitalization of commerce, and the opening of new acceptance points. This strong growth of digital payments provides a large opportunity for banks to monetize.
- Cloud technology enables banks to run a more cost-efficient operating model while providing the agility and modernity that legacy on-premises models lack. Speed to market and cost savings are mentioned most often as advantages that cloud banking can bring to an organization.

Vendors:

- Technology vendors in the payments space should provide flexible, cloud-based solutions to banks to support them on their modernization journey.
- Banks value partnerships over "make or buy" decisions, which creates an opportunity for vendors to establish a longer-term relationship with their bank clients.

RELATED AITE GROUP RESEARCH

AI-Enabled Anti-Money Laundering: From Theory to Reality, July 2020.

Attracting and Retaining the Digital-First Customer, June 2020.

Payments Hubs: What Are They and Why?, March 2018.

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