

Research Brief

Navigating the Digital Frontier in Banking: Challenges and Opportunities for Mission-Driven Financial Institutions



ABOUT

The National Bankers Association

The premiere trade organization focused on advocating for the nation's 150 Minority Depository Institutions (MDIs), and that champions the vital role of mission-driven banks in closing the racial wealth gap.

The National Bankers Association Foundation

The mission of the 501(c)(3) is to promote asset accumulation, sustainability, and economic equality among marginalized communities. Through our collaborative efforts, we aim to create sustainable solutions that address the root causes of inequality and improve financial services for those in need. We are grateful for the generous support of our funders, which enables us to provide innovative financial programs, capacity-building services, and research insights to traditionally underserved and excluded households, small businesses, and nonprofits.

The National Bankers Association Foundation's Strategic Pillars

Financial Wellness

Financial Wellness requires providing innovative financial programs, training, and services to households, small businesses, and nonprofits traditionally excluded and underserved. Our goal is to promote asset accumulation and sustainability among these groups.

Research & Impact

As a thought leader and partner in these discussions, we provide valuable insights that inform the development of responsive products, services, policies, and solutions to tackle the identified racial wealth and economic disparity issues. Our research-driven approach ensures that we address the root causes of inequality, creating sustainable solutions that will benefit marginalized communities.

Entrepreneurship & Small Business

Our Entrepreneurship & Small Business work provides capacity-building services and access to capital programs specifically designed for minority-owned and women-owned businesses. Our aim is to encourage entrepreneurship and small business ownership as an asset-building tool for these groups.

Collaboration & Capacity

Collaboration and Capacity Building are essential for MDIs to remain competitive and sustainable in an ever-changing financial landscape. By working together and sharing resources, MDIs can improve operational efficiencies and access larger pools of capital to fund high-impact projects. These collaborations promote knowledge sharing and skill development, strengthening the MDI sector and improving financial services for underserved communities.

The National Bankers Association Foundation's Strategic Initiative

MDI ConnectTech

Digital Transformation Program for Minority Banks

Digital transformation is no longer a choice for financial institutions but a necessity to thrive in today's technology-driven world. The National Bankers Association Foundation understands the importance of digital transformation for minority-owned and -operated banks and has collaborated with the Alliance for Innovative Regulation (AIR) and Citi Foundation's Community Finance Innovation Fund to create the MDI ConnectTech digitization program for Minority Depository Institutions (MDIs).



Citi Foundation



CONTENTS

EXECUTIVE SUMMARY: 2

INTRODUCTION:..... 4

Section 1: Defining Digitalization and the Current Environment 5

Section 2: The Threat: Changing Economies of Scale and Increased Competition 9

Section 3: Digitalization: A Fleeting Opportunity with Great Potential..... 11

Section 4: Identifying Barriers to Digitalization for MDIs 14

Section 5: Case Study and Pathways to Digitalization..... 17

CONCLUSION:..... 22

EXECUTIVE SUMMARY:

The onset of the COVID-19 pandemic triggered a variety of shifts in consumer and business behavior as nations around the world have sought to mitigate risk by shifting from in-person interactions to digital-based interactions. This trend can be clearly seen in the banking sector.

As early as April 2020, survey data from J.D.Power and consumer data from FIS found large upticks in customers using mobile and online banking services relative to 2019.¹ Similarly, a 2021 Morning Consult survey found that the pandemic has increased the use of mobile and online banking even as visits to branches and ATMs have decreased substantially.²

The pandemic also proved to be an accelerating force for the growth of fintech as the sector benefited on the demand side from an increase in online transactions and on the supply side from an investment-friendly environment. Beyond fintech, the rise in cryptocurrency as well as growing trends in embedded finance and data-driven personalization suggest that the future of banking is increasing digital. In addition to innovation, these trends are being driven on the supply side by new market competitors such as fintechs and major retailers, and on the demand side by the increased purchasing power of Millennial and Gen Z consumers. These next generation consumers are digitally native and represent strong market demand for online and mobile banking, as well as for increasingly personalized banking services and products.

Discussion of digitalization in the banking sector often includes specific capabilities such as: creating integration with third-party web applications to link bank accounts with Venmo or other mobile payment services; automating back-end processes that rely on routine tasks such as automated projections for lending activity based on machine learning analysis of multi-year lending data; and leveraging analytics to identify opportunities for cross-selling that can include automated and tailored product placement in a mobile banking app.³ But as digitalization deepens opportunity for personalization, digitalization will go beyond these features to include significant customization of products and services for users based on unique needs or desires.

Given the various trends in banking outlined above, the most pressing question for Minority Depository Institutions (MDIs), Community Development Financial Institutions (CDFIs), and all other community banks is the following: will they be able to integrate technology with their mission and relational knowledge to better serve customers who are underserved by major banks, or will they instead be made obsolete by major banks and fintech firms who can leverage greater economies of scale?

This paper is structured as follows: the Introduction provides insight on digital banking amid the pandemic. Section 1 provides an overview of digitalization, beginning with key definitions and analysis of the contemporary environment. Section 2 provides a detailed consideration of economies of scale issues within community banking and the MDI sector. Section 3 explores the benefits of digitalization for MDIs and other mission-driven banks. Section 4 considers barriers and explores pathways for digitalization. Section 5 provides a set of best practices and recommendations that are built from the preceding analysis and a case study. Finally, the conclusion pulls the themes of the paper together and issues a call to action for financial institutions, and the broader ecosystem of stakeholders including government, corporate, and philanthropy.

INTRODUCTION:

Disruption: Digital Banking, The Pandemic, and The Rise of Fintech

The era of digital banking began in 1980 when United American – a community bank in Knoxville, Tennessee – partnered with RadioShack to produce a home banking subscription service that allowed customers to check their balance, pay their bills, and apply for loans.⁴ In the decades that followed, online banking has become increasingly ubiquitous, particularly as the invention of the smartphone in 1994 has allowed for even greater convenience in digitally accessing banking services.⁵

Recently, the onset of the COVID-19 pandemic triggered a variety of shifts in consumer and business behavior as nations around the world have sought to mitigate risk by shifting from in-person interactions to digital-based interactions. This trend can be clearly seen in the banking sector. As early as April 2020, survey data from J.D. Power and consumer data from FIS found large upticks in customers using mobile and online banking services relative to 2019.⁶ Similarly, a 2021 Morning Consult survey found that the pandemic has increased the use of mobile and online banking while visits to branches and ATMs have decreased substantially.⁷

Banks that had already adopted the underlying technology necessary to compete digitally were advantaged relative to other banks when the pandemic began. For example, a recent Federal Deposit Insurance Corporation (FDIC) working paper found that “a one standard deviation increase in our financial technology measure, which describes a bank’s coverage of products installed at nonbank fintech firms, is associated with an 8.7 percentage point increase in Paycheck Protection Program (PPP) loan volume in 2020Q2.” These same technology-intensive banks are now well positioned to benefit from the substantial rise in bank deposits in the last two years.⁸ And these banks are also well positioned to form long lasting banking relationships with Millennial and Gen Z customers, the former of whom already represent the most populous living generation and largest source of new loan originations.⁹

But for banks that are lagging on the technological adoption curve, the quickly changing business environment is instead filled with existential risk. Indeed, in November 2020, Boston Consulting Group (BCG) published an article warning that the rise of fintech firms and services will quickly put traditional banking out of business. BCG warns that today’s banks “face a scenario, and a time frame, not unlike that of horse-drawn carriage makers in the 1910s,” noting that “within a decade, those that hadn’t switched to automobile manufacturing were doomed.”¹⁰

Consider this indication of existential risk: in the last decade, the fintech sector has grown tremendously. In contrast, the banking sector has consolidated, and the number of new bank charters has remained surprisingly low. In terms of sheer number of competitors, we have already

reached the point where there are more fintech companies than FDIC-insured commercial banks in the United States.¹¹

The pandemic proved to be an accelerating force for the growth of fintech firms as the sector benefited on the demand side from an increase in online transactions and on the supply side from an investment-friendly environment. In 2021, \$1 in every \$5 of global venture capital funding flowed to a fintech start-up, according to an analysis by market intelligence firm CB Insights.¹² Toward the end of 2021, the U.S. has more than 80 fintech firms that were unicorns - firms with market valuations above \$1 billion.

Nevertheless, the acceleration of fintech hit an unexpected wall in 2022 as a “new normal” quickly altered the speed of growth. The effects of this slowdown are vividly illustrated by fintech firm Stripe’s November 3rd company-wide memo announcing that the company would need to lay off 14% of its current workforce. The memo explained that the company’s leaders had been “too optimistic” about the speed of growth in the short-term and noted that “the world is now shifting again,” with challenges including “stubborn inflation, energy shocks, higher interest rates, reduced investment budgets, and sparser startup funding.”¹³

As the nation continues to experience these economic headwinds, it is not yet clear what 2023 and beyond will hold. But one thing that seems abundantly clear from the data is that while economic shocks in 2022 have *slowed the pace* of growth and expansion in the fintech sector, it has likely not fundamentally altered the *trajectory* that this sector has set for the future of banking. And regardless of the future of specific fintech firms, underlying capacity for leveraging financial technology will continue to provide strong absolute and comparative advantage to banks and other financial institutions.

Given these trends, the most pressing question for MDIs, CDFIs, and all other community banks is this: will they be able to integrate technology with their mission and relational knowledge to better serve customers who are underserved by major banks, or will they instead be made obsolete by major banks and fintech firms?

Section 1: Defining Digitalization and the Current Environment

To succeed in today’s landscape, MDIs and other mission-driven banks will need to leverage digitization and digitalization to meet and exceed customer expectations. While digitization and digitalization are often treated as synonymous terms, it can be helpful to separate them conceptually.¹⁴ *Digitization* refers to the process of converting information from analog to digital, such as turning paper records of loan originations into digital records that can be stored, analyzed, or transmitted via computers and the Internet. *Digitalization* involves leveraging that digital data to streamline business practices, enhance decision-making, improve customer experience, and provide personalization in product offerings.

In explaining the relationship between these two concepts, SAP notes that “the upfront effort required to *digitize* objects and assets positions businesses and industries to carry out *digitalization*. Data from throughout the organization and its assets is [then] processed through advanced digital technologies, which leads to fundamental changes in business processes that can result in new business models and social change” (emphasis added).¹⁵

Examples of digitalization in the banking sector include integrating third-party web applications to link bank accounts with mobile payment services like Venmo, automating back-end processes using machine learning analysis for lending activity projections, and utilizing analytics for cross-selling opportunities with tailored product placement in mobile banking apps.¹⁶

In terms of front-facing dimensions of digitalization, the most significant aspects are the ability of consumers to meet their banking needs online and through mobile apps on their smartphones. This dimension of digitalization includes everything from creating a new savings account online to remote deposit of checks, online wire transfers, and scheduled bill-paying. This area of digitalization also includes the ability to apply for and be approved for loans (particularly auto or consumer loans) via a near-instant online process. While relationship banking means that automating (and making instantaneous) such loan processes is not always aligned with the mission-driven banking model, ease of access can certainly be a value-add for the customer experience. Finally, this area of digitalization can include creating, accessing, and managing additional financial products beyond checking and savings accounts via online or app like CDs, IRAs, money market accounts, trusts, and even insurance.

The more advanced stage of digitalization is *personalization* – fully customizing the experience of each banking customer based on a detailed understanding of their needs and desires. A recent Forbes article explains that “data-driven personalization analyzes customer transaction data in real-time, applies machine learning and AI algorithms to determine what's important, and delivers personalized insights and advice to customers.”¹⁷ This insight in turn, allows customers to optimize their spending and savings habits. And at the most innovative, this personalization can even be joined to opt-in automated processes for saving, investing, or debt payment that aligns with goals chosen by the customer.

Of course, personalization through digital channels will not replace human interaction as a key feature of banking – particularly for large loans such as mortgages or commercial real estate loans. But the key, as Boston Consulting Group frames it, is “delivering the right individual experience through the right channel at the right time.”¹⁸

While personalization, as described above, describes the furthest dimensions of the banking sector as it is currently constituted, it is likely

that future trends in digitalization will transform banking even more significantly. Current headlines are saturated with stories about cryptocurrency, NFTs, and other digital assets, and a growing number of community banks plan to offer crypto services or products.¹⁹ Currently, most cryptocurrency is speculative in nature, with a pronounced risk of value diminishing to zero – a point recently emphasized by Federal Reserve Governor Wallace.²⁰ But if the crypto ecosystem can provide greater stability through market discipline or force of regulation, it is likely that consumer demand will force financial institutions to incorporate crypto into their offerings.

Beyond crypto, another substantial trend is the rise of “embedded finance” – which refers to incorporating banking as a service (BaaS) into other industries such as e-commerce or ride share platforms via APIs. The current power of embedded finance is perhaps illustrated by China’s WeChat social media app. In addition to posting status updates or messaging friends, WeChat allows users to pay for purchases, send money to contacts, manage their bank accounts, and even purchase insurance products all within the same user interface.²¹ Over the next decade, it is inevitable that both domestic and global markets will discover new value in integrating banking services into various aspects of social life. This will involve creating new product lines and services that reshape the user experience of banking, moving it from a standalone activity to a more integrated one.

In addition to market innovations, the future of digitalization may also be driven by policymakers and regulators, as illustrated by the substantive debates around the merits or demerits of a central bank digital currency (CBDC).²² Such currency could provide an alternative to cryptocurrency - at least as it pertains to storing value or functioning as a medium of exchange in commerce - or perhaps serve as a means of better anchoring or stabilizing the value of crypto assets such as stablecoins in investment.²³ Also noteworthy are recent comments by the Consumer Financial Protection Bureau (CFPB) regarding proposed rulemaking to empower consumers to better access their data, a step that the agency acknowledges is in the direction of open banking.²⁴ Open banking has the potential to fundamentally transform the financial sector, as emerging technologies associated with distributed ledgers, which can validate transactions through decentralized networks, have already been demonstrated in cryptocurrency exchanges. These technologies could fully disrupt the role of traditional banking institutions. In particular, decentralized networks may displace the role of banks in storing deposits, facilitating payments, and extending credit - thus forcing financial institutions to completely reimagine core dimensions of their mission and underlying business models.²⁵

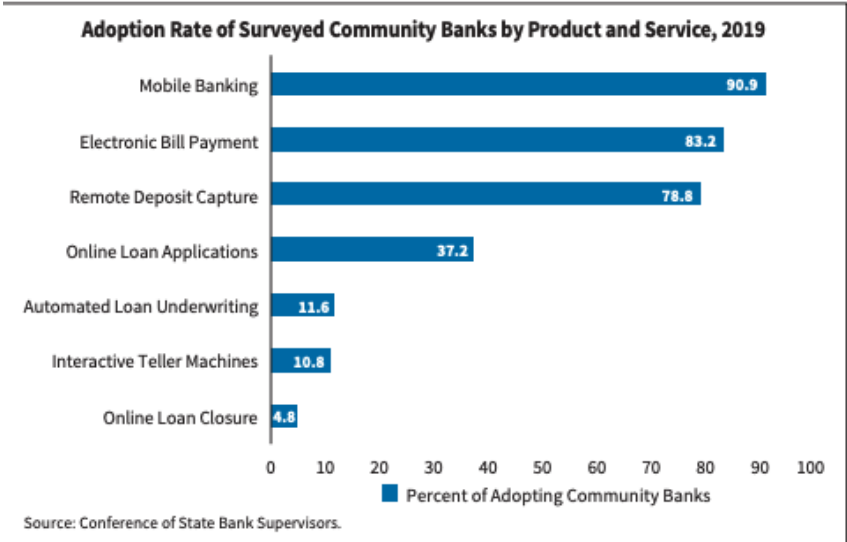
As with developments in cryptocurrency, the speed and extent to which decentralized finance emerges as a competitive force within the United

States will ultimately be determined both by market forces and by what policies are set by lawmakers and regulators. Regardless of the exact features of the competitive environment, it is abundantly clear that digital capacity will become an increasingly important determinant of success for individual banks seeking to retain or grow their market share.

The Current Digitalization Landscape for Mission-Driven Banks

Unfortunately, given decades of undercapitalization, ongoing capacity constraints, and staffing challenges, many mission-driven banks have struggled to keep up with the evolving spectrum of digitalization, from digitization to personalization. In a survey of MDIs by the National Bankers Association in partnership with the Alliance for Innovative Regulation, representative institutions indicated that they are making progress on basic offerings such as remote deposit and mobile banking but are still falling behind on other features such as online line application or wire transfers.

Moreover, the community banking sector is lagging in digitalization relative to larger banks. As shown in the graph below, prior to the pandemic, a strong majority of community banks were providing mobile banking services but only about a third were processing online loan operations, with far fewer approving and dispersing online loans according to research compiled by the FDIC.²⁶ As might be expected, technological adoption was higher for larger community banks compared to smaller banks as measured by asset size, revenue, and loan volume. Thus, given that the *median* asset size of MDIs is only \$400 million, the cost barrier to adoption is significantly more burdensome for many MDIs even relative to community banks let alone to the nation’s largest banks.



Nevertheless, a significant share of community bank leaders are recognizing the increasing necessity for digitization and digital

transformation. A 2021 poll of community bankers which included MDIs in its sample found that “a quarter (24.9%) believe keeping up with technology needs or advancements will be a top challenge for their institution this year, while more than a third (35%) view investing in digitalization as their top business opportunity.”²⁷ Similarly, the MDI institutions that participated in our survey with AIR indicate a growing desire to provide better online onboarding, web and mobile-based wealth management services, and other digitalization features.

The next section details how the adoption lag for mission-driven banks may lead to disaster for these institutions as they face changing market dynamics and growing competition.

Section 2: The Threat: Changing Economies of Scale and Increased Competition

Prior to the 1990s, banks were legally constrained to operate within the state in which they received their charter. Consequently, overall bank size and geography served was not set exclusively through market forces of competition, efficiency, and scale. This state of play changed, however when President Bill Clinton signed the Riegle-Neal Interstate Banking and Branching Efficiency Act of 1994 into law, allowing interstate banking.

At the time of the signing, a prescient bank executive observed that **“many observers think this legislation is about mergers and acquisitions in the banking industry. Wrong! Instead, the executive explained: It’s about allowing banks to serve our customers wherever they are, wherever they want to be, and doing it faster, better, and at a lower cost. No matter where they live, work, move or travel, consumers will be able to bank there, too.”**²⁸

Three decades later, there is strong evidence that the banking sector has achieved greater economies of scale, relative to the 1990s, the early 2000s, and the post-2010 era.²⁹ These returns to scale have stemmed from organic growth and mergers and acquisitions, as well as the ability to optimize the number and placement of branches and ATMs, and the ability to leverage technology to provide financial services in localities where a bank is not physically located. Indeed, recent technological innovation has lowered financial intermediation costs that had remained relatively constant until now.³⁰ Greater efficiency from scale and cost savings through technology, in turn, translates to a greater ability to compete, for example, by extending credit to a wider range of customers at a lower marginal cost for each added customer or offering higher interest rates for savings accounts, without diminishing profit margins.

According to an FDIC study on community banks, the benefits of increased returns from scale are particularly important for smaller banks. This is because the “efficiency gains accrue early as a bank grows from

\$10 million in loans to \$3.3 billion, with 90% of the potential efficiency gains occurring by \$300 million.” For MDIs and CDFIs, this should be encouraging news inasmuch as it means achieving greater returns from scale is more attainable than may have been previously thought. This research also underscores the fact that MDIs and CDFIs do not need to be the size of the largest banks in order to grow their revenue and profit margins, year over year.

Nevertheless, better economies of scale have also heightened competition in ways that could undermine core strategies of mission-driven banks. For example, MDIs and other mission-driven banks have historically held a comparative advantage relative to large banks in “relational lending” - a catch-all term for a variety of advantages, including access to customers on the periphery of the market, access to enhanced customer trust and loyalty, and greater ability to assess risk and to customize lending based on a detailed knowledge of the borrower. For large banks, technology can lower the cost and inconvenience of increasing financial inclusion, allow them to tailor products to increase customer loyalty and satisfaction in ways that diminish the value of “relationship lending”, and calculate increasingly accurate risk profiles based on size of datasets and ease of automated analysis – all of which can increase their competitiveness relative to community banks including MDIs and CDFIs.³¹

In addition to competition from large banks and fintechs, mission-driven banks will also experience growing competition from major retailers such as Walmart as well as big tech firms and major social media platforms like Facebook and Twitter.³² The threat of social media giants is particularly pronounced as it pertains to digitalization given that social media firms have tremendous reach in terms of the size of the user base and substantial depth in terms of the sheer amount of data available sourced from user behavior – both of which features will add significant comparative advantage for these firms relative to financial institutions.³³

Another substantial source of vulnerable comparative advantage for MDIs and CDFIs is their publicly recognized identity as mission-driven rather than profit-driven. This advantage is also being eroded by innovative fintech partnerships that explicitly target social justice-oriented Millennials who want to connect their banking to a good cause.³⁴ In addition to boutique firms, mission-driven banks risk losing ground to more mainstream banks that are newly eager to address racial disparities and increase financial inclusion amidst a nationwide racial reckoning as well as increased government scrutiny. MDIs will need to be able to clearly demonstrate their social impact through robust analytics and to present that impact as a targeted marketing strategy – both of which require substantial technological integration and staffing capacity.

Finally, in keeping with earlier comments on decentralized ledgers and other emerging technologies, in the more distant future it is likely that *all* financial institutions – whether large or small, mission-driven or profit

driven – will increasingly face competition from decentralized financial networks. These networks will be able to securely and reliably store deposits, process payments, and extend credit, completely validated at every point by the network of users themselves rather than relying on a financial intermediary. In this probable scenario, mission-driven banks must demonstrate the enduring significance of institutional mediation and centralization, combining human expertise with digitally-driven personalization, to attract and retain digitally-native customers in the future.

Section 3: Digitalization: A Fleeting Opportunity with Great Potential

While many mission-driven banks prioritize collecting, organizing, and reporting data for compliance and investor purposes, digitization's full potential can only be realized when data is leveraged dynamically across all aspects of the bank, from customer service to marketing to loan management and investor relations.

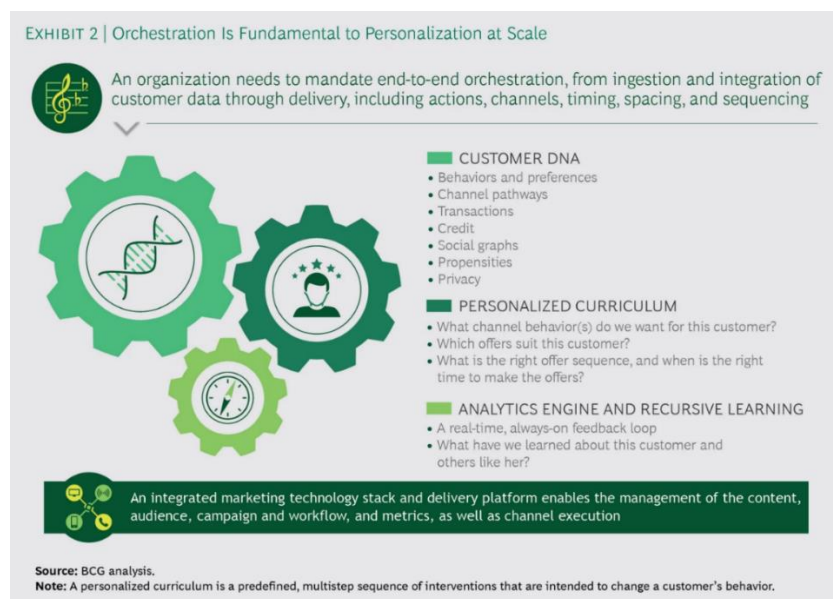
In addition to the customer-oriented benefits of digitalization discussed earlier in this paper, there are several other advantages worth highlighting. One notable example is the use of digitalization to showcase social impact, which can aid in brand management, investor relations, and governance. Here, digitalization can mean using automated processes to routinely capture and analyze zip-code, census tract, and demographic data for loan origination, allowing mission-driven banks to concretely demonstrate how their institution supports their community. The digitizing of these and other records, and the digitalization processes that allow that data to be analyzed in combination with public or proprietary data sources such as the Census Bureau's American Community Survey, can also provide bank executives with key insights into projected population changes that will shape consumer demand, industry-trends for small and mid-size businesses, and implications of broader macro trends for consumer and firm behavior.

Digitalization also presents an opportunity to automate labor-intensive processes, including administrative processes, allowing staff to focus time and effort on “high-touch” tasks such as conversations with wealth management clients or discussions with prospective small business borrowers. In the context of MDIs and CDFIs that often experience meaningful capacity constraints, automating processes can prevent bank staff from being stretched thin and can enhance their ability to provide tailored customer service.

Finally, one of the most significant advantages of digitalization is the potential to access a much wider customer base than the immediate geographies that mission-driven banks can serve in-person. MDIs can achieve this benefit by investing in data-driven marketing or through external partnerships with fintechs that may have national reach but who lack the charter necessary to provide a full suite of banking products and services. This non-proximate customer growth, perhaps concentrated in

particular lending products such as car loans and consumer lending, can supplement the core lending activities that meet MDI designation requirements and that are typically more relational, such as commercial real estate, mortgage and small business lending.

When the various benefits of digitalization intersect, this last benefit of scalability is enhanced. For example, an MDI that can use machine learning algorithms to analyze its historical loan data can identify under tapped markets, thereby allowing the bank to tailor its outreach. This process, in turn, creates virtuous feedback loops where targeted outreach leads to more customers, and thus more lending activity, which produces even more insight to be leveraged – a process that Boston Consulting Group describes as “recursive learning” as illustrated in the graphic below.



Banks that can move quickly to capture a broader market or at least safeguard their current market share can experience some of the benefits of first-mover advantage in setting up recursive learning loops and in solidifying their brand identity within the competitive landscape. As explored below, this first-mover advantage is particularly important regarding capturing Millennial and Gen Z consumers.

Digitalization and Generational Demographics

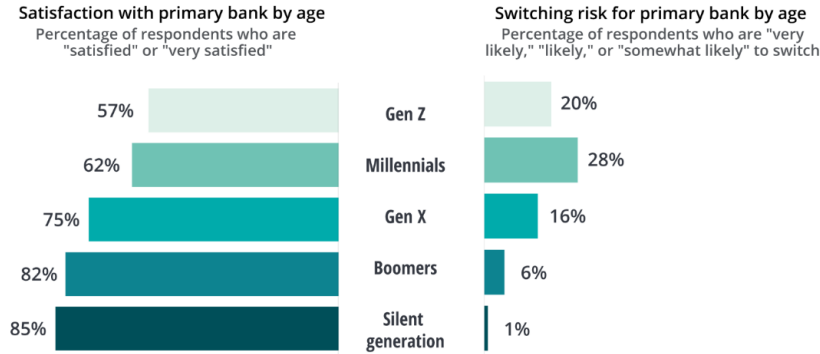
While all banks stand to benefit from digitalization, the window of opportunity is not necessarily the same for every institution due to the immediate and compounding costs associated with losing market share. While major banks can afford to willingly surrender market share to nonbank firms by scaling back their level of mortgage-lending without losing profitability, community banks with razor-thin profit margins likely cannot afford to lose substantial market shares to nonbank firms that outcompete via technological advantage.³⁵

This moment in time is an inflection point, both because of the accelerated advancements in underlying technologies including AI, but also because of the rise of Millennials and Gen Z as digital-native consumers who represent the largest block of consumers.

A 2021 Morning Consult survey found that the pandemic has increased the use of mobile and online banking across Gen Z, Millennial, Gen X, and Baby Boomer generational cohorts but that the youngest cohorts are most likely to use mobile banking.³⁶

Concurrent with this trend, recent survey data from Deloitte highlighted in the graphic below indicates that younger consumers are both less satisfied with their current banks and more likely to switch to a different bank than older consumers. This represents an opportunity for MDIs and other mission-driven banks to convert young consumers into lifelong customers, but this will require meeting or exceeding expectations for digital access, ease of use, and personalization.

FIGURE 2
Younger consumers are less satisfied with and at a higher risk of switching their primary banks



Source: Deloitte Center for Financial Services' 2021 Digital Banking Consumer Survey.
 Deloitte Insights | deloitte.com/insights

To consider just one banking category, Millennials alone make up 42% of the home-buying market according to the National Association of Realtors, and the share of Millennials and Gen Z buyers is steadily growing.³⁷ But it is important to also note that mission-driven banks should not ignore the youngest Gen Z consumers who are preteens or teenagers simply because those consumers are a decade or more away from home-buying or small business borrowing. Since geography is no longer a fully constraining factor, banks who market savings accounts to young consumers can potentially retain their business for decades or even an entire lifetime regardless of whether those consumers remain within proximity of a physical branch.

Considering the demographics described above, it is vital that MDIs and other mission-driven banks embrace digitalization as a core strategy for capturing and retaining the next generations as customers. Mission-driven banks face the urgent need to act quickly and strategically to avoid losing access to the growing market of digitally native Millennial and Gen Z consumers. Failure to do so could set these banks back decades and potentially lead to financial peril. But on the positive side, mission-driven banks can leverage their emphasis on relationality and social justice to position themselves as the long-term home for these young consumers. In marketing to Millennial and Gen Z customers, mission-driven banks can highlight their established continuity, mission over profit motivation, and their emphasis on personalized service to distinguish themselves from startup firms, large legacy banks, and large tech platforms seeking to enter the banking landscape.

Nevertheless, to realize this vision of reaching the expanding next-generation market, MDIs, CDFIs, and other community banks must overcome various obstacles to digitalization. The subsequent section outlines and examines these obstacles.

Section 4: Identifying Barriers to Digitalization for MDIs

Mission-driven banks face a multitude of barriers to adopting technology and digitalization. However, the most dangerous of these obstacles is the inclination to actively or passively maintain the status quo rather than take on new risks associated with innovation. The aversion to risk manifests at the collective level in terms of pressure from regulators and policymakers to create as much stability as possible in the financial system, a pressure brought to bear on small banks even though they do not pose the same risk to the broader financial system as large banks. It also manifests at the executive level as pressures to avoid risk in strategic decision-making by boards, presidents, and other C-suite decisionmakers. And the resistance to change can also permeate the broader bank culture, where employees may face more negative consequences from failed attempts at innovation than they would receive positive benefits from successful innovations, such as job security, salary increases, and increased status within the organization.

The existential threat to mission-driven banks described throughout this report may underscore the need for innovation, but understanding the threat alone is typically not enough to overcome the layers of status quo bias. Indeed, understanding is just as likely to lead to paralysis if there are not broader efforts to change institutional incentives and a culture to support innovation. It is therefore important that embracing digitalization begins with an audit of the intangible characteristics of the institution and its culture, before jumping to the concrete obstacles described below.

The most commonly identified barriers to digitalization for mission-driven banks include up-front costs, implementation issues including with current staff ability or capacity, burdens from increased risk management and

regulatory compliance requirements, and deepened dependency on core providers and other third-party vendors who may not prioritize the needs of smaller clients.³⁸

Notably, for most of these challenges, the dollar amount required for initiating and sustaining digitalization is a greater burden for banks of smaller asset sizes. But it is also harder for small banks to achieve the kind of economies of scale required to drive decreasing marginal cost. For example, if upfront costs for a technological solution to aid in digitizing loan records are the same for a large bank that processes hundreds of thousands of loans per year as they are for a small bank that only processes several hundred, the larger bank will achieve an economy of scale much quicker, thereby recouping the expense that they were already in a better position to bear at a rate faster than the smaller bank. Similar analysis also applies to the non-technological dimensions of digitalization, like employee training.

The above analysis can make each discrete issue loom large enough as to seem unsurmountable, thus further entrenching status quo bias. On the other hand, if mission-driven banks instead think about upfront digitalization investments like they think about compliance costs – that is, as an unavoidable cost of doing business that is required to maintain operations – it becomes easier to justify allocating resources in the short-term even though the payoffs are likely to be realized much further into the long-term due to scale than is the case for larger banks.

Stepping back from those discrete issues, a broader obstacle that often flows from the above challenges is that digitalization strategy is typically fragmented in silos, representing existing divisions based on department, process, or end goal. Consequently, digitalization often means creating, licensing, or otherwise adopting a specific tool or platform to perform a narrow range of tasks rather than investing in broad technological capabilities that can be embedded throughout all aspects of a bank's internal and external activities. This results in substantial opportunity costs from lack of efficiency and the inability to leverage data across those silos. These opportunity costs are especially notable when a piecemeal approach leaves banks overly reliant on an ever-increasing number of vendor platforms or tools that do not integrate with each other or with core providers. In those situations, data from one process is not able to benefit another process, and there is a missed opportunity to cultivate broad institutional knowledge within the bank.

Given that small banks are disadvantaged in achieving scale through digitalization relative to large banks, it is therefore more vital to overcome silos in digitalization to ensure that technological investments in one area of a bank's activity can be cost-effectively leveraged in other areas to drive the “recursive learning” dynamic described in Section 3. Indeed, smaller institutions should see their smallness as a potential strength in this regard

because their silos should be easier to break down and processes of integration should be less complex relative to large banks.

Regulation, Due Diligence, and Risk

Pundits often describe the crypto landscape as a “Wild West” – evoking imagery of a lawless domain operating outside the safeguards of legal frameworks and enforcement. This metaphor can be appropriately applied to the broader digital ecosystem, inclusive of everything from simple integration with payment platforms to fintech partnerships that provide additional lending activity. Navigating this “Wild West” involves addressing an interconnected set of challenges including information security, regulatory compliance, fraud mitigation, consumer data protection, due diligence processes for vendors and partners, financial risk assessment, and more.³⁹

As a vivid illustration of this set of challenges, consider the following recent New York Times headline, “Fraud Is Flourishing on Zelle. The Banks Say It’s Not Their Problem.”⁴⁰ The article details how instances of scamming have proliferated on Zelle and other peer-to-peer payment platforms such as Venmo, and explains how regulation remains somewhat unclear regarding when financial institutions are on the hook for “authorized transactions” that are nevertheless the result of consumers being deceived by criminals. Similarly, another major area of regulatory ambiguity and heightened risk is found when banks partner with fintechs to provide loans or other services. For example, JPMorgan Chase is currently suing one fintech for allegedly providing a fraudulent list of fake users to entice the bank into partnership.⁴¹ If the complaint is accurate, this still suggests that the bank’s due diligence process was not robust enough to catch it prior to the contract being signed, which should be a warning to mission-driven banks’ whose small size means their due diligence process is likely even more vulnerable.

Beyond outright fraud or other illegal activity such as money laundering, a variety of other concerns are present for financial institutions pursuing digitalization including risk of data breaches of consumer data, risk of exposure or balance sheet issues if a fintech partner fails, reputational risk from poor customer service or operational continuity issues, among other risks.⁴²

Each of these challenges manifest as increased cost, labor, and time for already capacity and resource constrained institutions. These increased burdens can be seen in vetting vendors and partners, implementing and maintaining digital capabilities and platforms, resolving issues including fraud cases, and responding to directives, oversight, or heightened scrutiny from regulators.

Furthermore, this broad set of challenges is compounded by the lack of clarity from regulators regarding who bears responsibility for given failures and what “reasonable” due diligence looks like in terms of a paper

trail when issues arise. Consequently, banks that pursue digitalization are rendered more vulnerable to enforcement actions or other measures when issues arise since it makes it more difficult for banks to show that they conducted themselves in a blameless manner. Given this added concern, many mission-driven banks are understandably reluctant to pursue digitalization efforts at all.

Ultimately, regulators will need to take a more substantive role in issuing clear guidance and rules to help ensure a stable, predictable, and fair environment – a point that the regulators themselves readily acknowledge.⁴³ As an example, a recent document co-produced by the Federal Deposit Insurance Corporation, the Board of Governors of the Federal Reserve System, and the Office of the Comptroller of the Currency examines due diligence considerations for community banks looking to partner with fintech firms.⁴⁴ The interagency document lists six areas of consideration: 1) business experience and qualifications, 2) financial condition, 3) legal and regulatory compliance, 4) risk management and controls, 5) information security, and 6) operational resiliency. By delineating these areas and providing insights and illustrative examples, banks have a better sense of what regulators are thinking as it pertains to risk management.

The barriers to digitalization listed in this section help to explain why so many mission-driven banks are behind the curve. Nevertheless, these challenges can be successfully navigated. The final section of the paper considers pathways to digitalization and includes insights and suggestions from the direct experience of mission-driven banks.

Section 5: Case Study and Pathways to Digitalization

Digitalization, as defined earlier in this paper, can include a wide spectrum of activity. At one end of the spectrum is digitization – the process of turning analog records such as loan applications on paper into digital data that can be stored, transmitted, and analyzed. In the middle of the spectrum are all the exciting topics typically associated with digitalization such as using AI-powered chatbots to streamline customer service or automated machine learning processes to intelligently cross-sell products within a banking app. Finally, at the opposite end of the spectrum, the end representing the fullest embrace of digitalization and personalization involves fully customizing the user experience based on continuous automated analysis of user behavior. A clear example of personalization for web and mobile users is the ability to show customers various trends in their spending across time, and automatically suggest opting into savings or bill paying functions that align with user-defined goals.

The case study below explores how one MDI is pursuing a digitalization strategy in line with its mission in order to extend credit to consumers and small business owners. The case study establishes how partnerships can amplify the deep impact of MDIs while mitigating risk and allowing for scalability.

Case Study: How Texas National Bank is Using Digitalization to Help Consumers and Small Business Owners Access Credit

Texas National Bank is a Hispanic MDI that is also certified as a CDFI and serves the Rio Grande Valley area, which covers four counties in the Lonestar state. With an asset size of \$650 million and a staff of 131 employees, Texas National is slightly bigger than the median MDI, but smaller than the median community bank. Texas National has a unique appreciation for its community, which primarily consists of smaller and rural Hispanic communities. This community faces unique social and demographic barriers within the mainstream financial system. These minority communities often have limited access to capital for their small business and deal with issues such as affordable housing, high-cost payday loans, language barriers, immigration challenges, credit invisibility, fee-based checking accounts, and lower financial literacy, among other things.



Image Source: Texas National Bank website

Texas National puts their community first and has looked to establish and implement socially responsible products, including free checking accounts, that meet the needs and values of the community. Recently, Texas National launched two new digital pilot products that improve the speed, accuracy, cost, and access to credit and deeply align with the bank's mission. The first product provides unsecured small dollar consumer loans. The state of Texas has a substantial number of payday lenders who often charge as high as 600%. Texas National's consumer lending pilot allows existing customers to apply for consumer loans with reasonable interest rates and approves or disapproves based on a model that analyzes checking account inflow and outflow data to establish a non-credit score-based risk profile. This model enables the banks to provide loans with non-predatory features and rates below Texas usury rate laws to consumers with poor or nonexistent credit scores.

Rey Garcia, the bank's Strategic Growth Officer, explains this new lending program will drive only a modest amount of revenue to the bank.

But they launched this product because it furthers their mission, combats predatory lending, and lets them better serve their community. This commitment to mission is also driving the second product that Texas National is piloting. This second product also relies on a similar process of analyzing checking account inflows and outflows but is aimed at small business owners, especially minority business owners.

Garcia explains the pilot allows small business owners to apply for loans of \$50,000 or less that do not need to be secured by collateral. This product can be particularly helpful for mom-and-pop shops that may have small balance sheets and whose revenue may be largely cash-based. The pilot was established with the help of a fintech partner who uses a cash flow model that categorizes transactions based on account activity. This model notes the stable revenue streams and cash reserves, as measured by the business account activity, which serves as an indicator of the ability to repay. Garcia also notes one of the first customers to receive this loan had deposited with the bank for a long time but had never borrowed from the bank and had previously relied on another online-based entity that charged a higher rate for small loans.

Importantly, Texas National's leadership has bought-in to the need for digital innovation and are fully comfortable with the fact that the returns on investment may not be immediate. As Garcia notes, when it comes to digitalization, **“You're either going to take the cost now, or 10 years from now, and it's probably cheaper to do it now. But thankfully, the bank was also able to cover a substantial portion of the initial costs with technical assistance grants. We had already started the product-implementation process prior to receiving the grant because it was the right thing to do, but the grants made it much easier and significantly expedited the timeline for launching.”**

Garcia also notes the lessons learned from these digital solutions have completely transformed the way the bank thinks about business and products. This has helped hone in their digital strategy and contribute to the successful execution of their overall business plans.

While every mission-driven bank will have unique needs and opportunities, the example of Texas National Bank can provide an excellent resource for where to begin. Ultimately, this case study illustrates the importance of beginning with a mission and responding to clear needs within the community as the starting place for a strong digitalization strategy.

The remainder of this section seeks to dive into strategy and approach in more depth, providing key principles that emerge from the experience of MDIs. The insights in this section flow from our many conversations with MDI leaders and other key stakeholders.

Begin With a Clear Strategy

Rather than concentrating on a specific capability or goal, such as AI chatbots for customer service, leaders stress that creating a digitalization strategy should begin by establishing a vision statement and corresponding playbook based on the full spectrum, with the explicit goal of helping the bank move as far along on the spectrum over time as possible. This approach can help banks avoid the mistake of being distracted by bells and whistles or the alluring promises of a particular potential partner, to instead see whether deciding to invest in chatbots now, for example, aligns with the broader strategy. By placing evaluation of investing in specific capabilities into the context of the broader strategy, bank executives can also ensure that each iterative step under consideration will prove helpful in creating compounding benefits across the institution rather than merely increasing complexity and maintenance costs.

It can also be helpful for banks to create a roadmap of the customer journey, noting where and how various digitalization opportunities fit with the broader vision of serving the customer. As analysis from McKinsey notes, “Customer journeys should be compelling and highly differentiated, combining personalization, speed, and ease of use for all processes, including applying and getting approved for a loan, opening and understanding how to make full use of an account, and reconciling payments.”⁴⁵ Similar mapping can be used for internal processes involving bank employees, again with the goal of connecting desired outcomes to the specific mechanisms that can enable those outcomes.

Build, Buy, or Partner?

After establishing goals and guiding strategy, one of the first questions that mission-driven banks must ask themselves as they apply their strategy is whether to build, buy, or partner? Building can involve hiring an internal team of programmers, but in the context of mission-driven banks, building typically involves contracting with a third party to create a bespoke product to meet the needs of the financial institution. This approach is contrasted with buying inasmuch as the latter approach involves purchasing an existing product that may or may not be customizable for the institution to certain extents, but which was not designed specifically for the institution. Finally, partnership involves entering into a relationship with a service or platform provider.

Creating tools and systems for digitalization in-house or through contract with a vendor has the significant advantage of enabling fully tailored design to fully meet all the needs of the financial institution. This advantage is compounded if the new product or service is designed to be integrated with any preexisting technologies and systems and if it is designed to integrate across a full range of bank functions to support recursive learning opportunities and greater data leveraging. In addition, building and buying avoids the vulnerability of depending on a partner which can severely jeopardize bank operations if the partner exists the

market, fails to renew the partnership, runs afoul of regulation, or otherwise ceases to deliver the needed product or service. Contrasted with the dependency of outsourcing, in-house (and to a lesser extent, contracted) development can also help cultivate an internal culture of innovation and can generate institutional knowledge with the possibility of positive spillovers enabling further innovation. Finally, both building and buying have the benefit of avoiding the due diligence issues, reputational risks, and potential regulatory scrutiny associated with partnerships.

Nevertheless, building is also the most cost-intensive in terms of both upfront costs and maintenance costs, and it also forgoes the ongoing technical support that can be included in partnerships. In addition, building and buying are rarely cost-effective strategies when applied to narrowly defined tasks or capabilities as opposed to custom built solutions that are designed to meet several needs at once. For mission-driven banks that need to start small and build iteratively, partnerships may thus be a better approach in the short-term, particularly as regards externally facing digitalization efforts that can quickly improve customer experience.

While partnering can often seem like the least cost option, it is important to accurately project the full range of costs. As Dominik Mjartan, president and CEO of Optus Bank (an MDI), explains, **“The initial cost is not just implementation but vendor due diligence, compliance, onboarding, making sure they are a good partner.”**⁴⁶

Further, since partnering typically does not involve bespoke creation of technological solutions, it is vital to ensure that any potential partner is mission-aligned, has an adequate understanding of the sector and the market, and is willing to iterate as needed. Regarding this need, Mjartan notes that this is exactly what made Optus comfortable partnering with the fintech firm they chose.

“They came in with an incredible history of over-representing communities of color with better products and services and with lower rates. They were able to demonstrate with real data and with blessings from the regulators that they are a credible partner. [And] they were also not a take-it-or-leave-it partner; they said, what do you need from us to further your mission?”

Finally, regardless of whether banks choose to build, buy, or partner, they should seek to build a culture of knowledge and institutional memory that can leverage lessons learned for future development. Thus, while outsourcing certain deliverables to consultants or outside firms may alleviate some capacity constraints, this concern should be balanced with

the goal of helping existing staff gain the skills, knowledge, and perspective needed to sustain the digitalization strategy.

Ultimately, there is no one-size-fits-all solution for mission-driven banks looking to digitalize, nor will the timeline look the same for every institution. Instead, mission-driven banks should seek to learn from each other's experiences as well as industrywide best practices and recommendations as a starting point that can then be tailored for specific needs and contexts.

Recommendations for Policymakers and Key Stakeholders

To help support MDIs and CDFIs on their road to digital transformation, policymakers and regulators need to address a few bottlenecks that limit growth. As recently called for by two members of Congress, policymakers should begin their efforts with a comprehensive study of the sector to identify where the federal government could help to address some of the obstacles and pain points for mission-driven banks.⁴⁷

Three specific recommendations for government that affect the capital required for digitalization include the following: 1) policymakers should amend current provisions involving bank holding policies to allow for non-dilutive equity investments from publicly traded companies that will enable banks to grow their lending footprint through digitalization, 2) Bank supervisors and regulators should allow MDIs and CDFIs to allocate more of their capital toward investing in technology and digitalization, including for use in partnerships with fintechs or other third parties and 3) Building off the success of initiatives like Treasury's Emergency Capital Investment Program (ECIP), policymakers should continue to pursue new ways of driving capital into MDIs and CDFIs including through investment programs, tax credits, and annual appropriations.

Corporate and philanthropic partners also have an important role to play in supporting mission-driven banks. These stakeholders can provide technical assistance, loan their executives to mission-driven banks for a fixed term to help oversee implementation of new strategies or technologies, provide access to software or other forms of technological support, and more. Additionally, philanthropic support should include funding for technology, talent, capacity-building and skills training to ensure scale the size and ability of the workforces employed by mission-driven banks as part of their digital transformation.

CONCLUSION:

Mission-driven banks are the financial lifeblood of hundreds of communities across the country, providing access to credit and other financial products and services to places and people who are underserved by the broader financial ecosystem. These institutions continue to play a vital role in closing the racial wealth gap and enabling inclusive place-based development. But to remain financially solvent in an increasingly competitive environment, mission-driven banks need to embrace

digitalization. The rise of fintech firms and the growing market power of Millennial and Gen Z consumers are powerful reminders that the window of opportunity is fleeting, and bold action is required now to ensure long-term vitality.

Digitalization is often used as shorthand for specific features such as automated lending, chatbots, or remote deposit, the broader goal of digitalization involves creating an actionable strategy. A strong digitalization strategy addresses the full spectrum, from digitizing paper records to fully personalizing the end user experience for customers while also streamlining internal bank processes and enhancing decision-making by leveraging datasets. A clear digitalization strategy also directly addresses key challenges associated with cost, capacity, and compliance.

While each institution will need to decide for themselves whether to “build, buy, or partner” for specific functions or capabilities based on their unique needs, goals, and capacity, mission-driven banks should seek to learn from each other’s’ experience. By helping each other succeed, mission-driven banks can strengthen the sector as a whole and help ensure that economically vulnerable communities nationwide continue to have access to vital banking services.

This paper has sought to provide an exploration of digitalization for mission-driven banks. In future publications, we will draw from our ongoing initiatives such as the MDI ConnectTech program to provide in-depth case studies, playbooks, and other reports to help support the sector. In addition, we will draw from this research in our ongoing conversations with policymakers and regulators to aid them as they solidify guidelines for partnerships and other endeavors.

We believe that mission-driven banks can innovate and even lead the banking industry in applying digitalization strategy to the complex needs of 21st century consumers. Ultimately, the journey toward digital transformation will ensure that mission-driven banks are empowered in their efforts to close the racial wealth gap.

ABOUT THE AUTHORS

Anthony Barr, Research and Impact Director



Anthony Barr is the Research and Impact Director for the National Bankers Foundation. He has published research with Brookings Metro and the Federal Reserve Bank of Chicago on topics including economic development, labor markets, postsecondary education, and public safety.

Stephanie Thomas, Deputy Executive Director



Stephanie Thomas is the Deputy Executive Director of the National Bankers Association Foundation. Stephanie is leading work on the MDI ConnectTech program, which works with MDIs to develop and integrate technology solutions that multiply their lending capacity and increase financial services' access to and affordability to underserved customers. Stephanie is the Founder and CEO of Net Positive Strategies. Previously, she served as Director of Great Streets and Retail for the Office of the Deputy Mayor for Planning and Economic Development in the Executive Office of the Mayor in Washington, DC.

Nicole Elam Esq., Executive Director



Nicole A. Elam Esq. is the President and CEO of the National Bankers Association and Executive Director of the National Bankers Association Foundation. Prior to NBA, Nicole was vice president and government relations manager at JPMorgan Chase & Co. in Washington, DC and brings 20 years of public policy and public affairs experience. Elam is leading the movement to strengthen and sustain minority-owned and -operated banks.

Acknowledgments:

The authors wish to thank Citi Foundation and VISA for their financial support.

Endnotes:

- ¹ <https://www.americanbanker.com/news/digital-banking-is-surging-during-the-pandemic-will-it-last>
<https://www.cnbc.com/2020/05/27/coronavirus-crisis-mobile-banking-surge-is-a-shift-likely-to-stick.html>
- ² <https://www.aba.com/news-research/research-analysis/preferred-banking-methods>
- ³
- ⁴ <https://www.mckinsey.com.br/~media/McKinsey/Industries/Financial%20Services/Our%20Insights/Strategic%20choices%20for%20banks%20in%20the%20digital%20age/Strategic%20choices%20for%20banks%20in%20the%20digital%20age.pdf>
- ⁴ <https://bankingjournal.aba.com/2017/06/nine-young-bankers-who-changed-america-thomas-sudman/>
- ⁵ <https://www.weforum.org/agenda/2018/03/remembering-first-smartphone-simon-ibm/>
- ⁶ <https://www.americanbanker.com/news/digital-banking-is-surging-during-the-pandemic-will-it-last>
<https://www.cnbc.com/2020/05/27/coronavirus-crisis-mobile-banking-surge-is-a-shift-likely-to-stick.html>
- ⁷ <https://www.aba.com/news-research/research-analysis/preferred-banking-methods>
- ⁸ <https://www.fdic.gov/analysis/quarterly-banking-profile/fdic-quarterly/2022-vol16-1/article2.pdf>
- ⁹ <https://www.federalreserve.gov/econres/notes/feds-notes/understanding-bank-deposit-growth-during-the-covid-19-pandemic-20220603.html>
<https://www.morganstanley.com/ideas/millennial-gen-z-loan-growth>
- ¹⁰ <https://www.bcg.com/publications/2020/bionic-banking-may-be-the-future-of-banking>
- ¹¹ <https://www.crunchbase.com/hub/united-states-fintech-companies>;
https://banks.data.fdic.gov/explore/historical?displayFields=STNAME%2CTOTAL%2CBRANCHES%2CNew_Char&selectedEndDate=2021&selectedReport=CBS&selectedStartDate=1934&selectedState=s=0&sortField=YEAR&sortOrder=desc
- ¹² <https://www.cbinsights.com/research/report/fintech-trends-2021/>
- ¹³ <https://stripe.com/newsroom/news/ceo-patrick-collison-email-to-stripe-employees>
- ¹⁴ <https://www.forbes.com/sites/jasonbloomberg/2018/04/29/digitization-digitalization-and-digital-transformation-confuse-them-at-your-peril/?sh=2f8bc8172f2c>
- ¹⁵ <https://www.sap.com/insights/digitization-vs-digitalization.html>
- ¹⁶
- ¹⁷ <https://www.mckinsey.com.br/~media/McKinsey/Industries/Financial%20Services/Our%20Insights/Strategic%20choices%20for%20banks%20in%20the%20digital%20age/Strategic%20choices%20for%20banks%20in%20the%20digital%20age.pdf>
- ¹⁷ <https://www.forbes.com/sites/forbesfinancecouncil/2020/10/09/data-driven-personalization-reaches-a-tipping-point-in-banking/?sh=1c4ab1797c25>
- ¹⁸ <https://www.bcg.com/publications/2019/what-does-personalization-banking-really-mean>
- ¹⁹ <https://bankingjournal.aba.com/2022/09/one-in-10-community-banks-planning-to-launch-crypto-services/>
- ²⁰
- ²¹ https://www.federalreserve.gov/newsevents/speech/waller20230210a.htm?fbclid=IwAR27k3FnZAOm8KOiWq0EESocK0H5y6TgGkmIXCjVdeqLsApnShpl_uEPz9l
- ²¹ <https://www.mckinsey.com/industries/financial-services/our-insights/insurance-of-the-future-an-interview-with-ren-huichuan-of-tencent>
- ²² https://www.aba.com/advocacy/policy-analysis/examining-the-benefits-and-risks-of-a-us-central-bank-digital-currency#_ga=2.178698404.1278160701.1677190158-1086637276.1666988753
- ²³ <https://theconversation.com/how-a-digital-pound-could-work-alongside-cryptocurrencies-199462>
- ²⁴ <https://www.consumerfinance.gov/about-us/newsroom/director-chopra-prepared-remarks-at-money-20-20/>
- ²⁵ <https://www.coindesk.com/learn/what-is-a-distributed-ledger/>
- ²⁶ <https://www.fdic.gov/resources/community-banking/report/2020/2020-cbi-study-full.pdf>
- ²⁷ <https://independentbanker.org/2022/01/community-bank-ceo-outlook-2022-your-priorities-for-the-new-year/>
- ²⁸ <https://www.federalreservehistory.org/essays/riegle-neal-act-of-1994#:~:text=Signed%20into%20law%20by%20President,regarding%20banking%20in%20each%20state.>

-
- ²⁹ https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2655448
- ³⁰ Philippon, Thomas, On Fintech and Financial Inclusion (September 2019). NBER Working Paper No. w26330, Available at SSRN: <https://ssrn.com/abstract=3624605>
- ³¹ <https://www.fdic.gov/analysis/cfr/working-papers/2022/cfr-wp2022-02.pdf>
- ³² <https://www.cnbc.com/2022/12/09/walmart-fintech-startup-one-to-launch-buy-now-pay-later-loans.html>
- ³³ <https://www.reuters.com/technology/twitter-working-payments-feature-ft-2023-01-30/>
- ³⁴ <https://bankgreenwood.com/>
- ³⁵ <https://www.cnbc.com/2023/01/10/wells-fargo-once-the-no-1-player-in-mortgages-is-stepping-back-from-the-housing-market.html>
- ³⁶ <https://www.aba.com/news-research/research-analysis/preferred-banking-methods>
- ³⁷ <https://www.nar.realtor/sites/default/files/documents/2022-home-buyers-and-sellers-generational-trends-03-23-2022.pdf>
- ³⁸ <https://www.fdic.gov/resources/community-banking/report/2020/2020-cbi-study-full.pdf>
- ³⁹ <https://www.fdic.gov/news/financial-institution-letters/2008/fil08044a.html>
- ⁴⁰ <https://www.nytimes.com/2022/03/06/business/payments-fraud-zelle-banks.html>
- ⁴¹ <https://www.axios.com/2023/01/12/jpmorgan-sues-fintech-founder-for-fraud>
- ⁴² <https://www.americanbanker.com/list/five-types-of-risks-that-threaten-bank-fintech-partnerships>
- ⁴³ <https://occ.gov/news-issuances/speeches/2022/pub-speech-2022-106.pdf>
- ⁴⁴ <https://www.fdic.gov/news/financial-institution-letters/2021/fil21059.html>
- ⁴⁵ <https://www.mckinsey.com.br/~media/McKinsey/Industries/Financial%20Services/Our%20Insights/Strategic%20choices%20for%20banks%20in%20the%20digital%20age/Strategic%20choices%20for%20banks%20in%20the%20digital%20age.pdf>
- ⁴⁶ <https://www.americanbanker.com/news/the-tech-challenges-and-solutions-facing-minority-banks>
- ⁴⁷ [Warner Leads Request for GAO Study on Technology Challenges Faced by CDFIs and MDIs - Press Releases - Mark R. Warner \(senate.gov\)](#)

Recommended Reading:

1. Bankruptcy: How Community Banking Can Survive Fintech
2. The Future of Money: How the Digital Revolution is Transforming Currencies and Finance
3. The Great Transition: The Personalization of Finance is Here