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# A NEW APPROACH FOR **MODERNIZING PAYMENTS** IN BANKING

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**A New Approach For Modernizing Payments In Banking,** a PYMNTS collaboration with Red Hat and Temenos, is a research-based report examining the digital trends transforming retail commerce and detailing how banks can leverage these shifts to bring new services and capabilities to market with speed and agility.

# A NEW APPROACH FOR **MODERNIZING PAYMENTS** IN BANKING

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# INTRODUCTION

## A TIME OF RAPID ECONOMIC AND TECHNOLOGICAL CHANGE

Nearly all older cities boast financial districts, often near ports or other historic commerce hubs. Banks are essential to commerce, so they had to be where the action was. Retail banks tended to cluster in wealthier areas for similar reasons.

The digital economy's rise has greatly diminished — if not entirely eliminated — the value of having physical office spaces near commercial centers. Commerce today occurs everywhere and anytime thanks to the internet and digital technology. A basic principle still holds true for banks despite the changes the digital revolution has wrought: They must be where the action is. That means they must be equipped to facilitate transactions quickly and securely in a digital environment.

The one-touch simplicity present in the Amazons and Ubers of the world has shifted consumers' expectations for payments. Consumers expect payment capabilities to be embedded in the services they use and to be able to execute transactions seamlessly, without having to fetch card information or toggle between apps or screens.

Consumers that go to brick-and-mortar stores are increasingly taking digital-first approaches with services like mobile order-ahead or curbside pickup, and some are able to pay with their own devices through technologies like contactless payment-enabled mobile wallets or QR codes. In a very real sense, consumers are becoming the point of sale wherever those sales take place. These dynamics were already present before the pandemic hit, but the crisis has been a force multiplier for these trends, hastening the obsolescence of cash and greatly increasing the share of retail commerce transacted online.

## WHERE DO BANKS FIT INTO THIS EVOLVING PAYMENTS ECOSYSTEM?

The answer should be everywhere. Banks will have to look beyond tried-and-true revenue streams, like interchange fees and loan interest — both of which are facing downward pressure under current economic conditions — and focus on gaining the capacity to offer embedded financial services in today's fast-moving connected economy.

This process is not as simple as throwing a switch, however, as many banks with existing systems and processes are well-aware. In the past, banks looking to overhaul these systems would have faced a daunting task that carried substantial expenses and risks. Technology has opened up a new path to modernization, allowing banks to progressively modernize these systems. Banks can employ application programming interfaces (APIs) and cloud platforms to build new payment processing architectures uniquely fit for this purpose. Such an approach relies on microservices, discrete stand-alone capabilities that contain all of the coding and components necessary to support them end to end. A microservices approach allows the development and implementation of new digital services to take place independently of other bank processes.

A New Approach For Modernizing Payments In Banking, a PYMNTS collaboration with Red Hat and Temenos, offers a perspective on navigating the challenges banks face. It lays out the trends transforming retail commerce, the ways payments can be a strategic engine for growth and the technical capabilities that can allow banks to bring new services to market with speed and agility.

# The digital-first payments paradigm

Some statistics help tell the story of the seismic shift in payments that has occurred over the past year. Cash use has declined 25 percent to 50 percent around the world, with the drop especially pronounced in countries where cash was prevalent before the pandemic. The portion of the population in the United Kingdom that regularly uses cash has dropped to just 10 percent today, for example.<sup>1</sup> Digital payments — those transacted online or at a store's POS — are estimated to increase 20 percent in 2021 year over year to reach \$6.7 trillion.<sup>2</sup> This is remarkable considering that the pandemic has otherwise flattened worldwide economic growth.

<sup>1</sup> Nolsoe, E. The pandemic accelerates the decline of cash globally. YouGov. 2020. <https://yougov.co.uk/topics/economy/articles-reports/2020/11/16/pandemic-accelerates-decline-cash-globally>. Accessed February 2021.

<sup>2</sup> Author unknown. Digital Payments. Statista. 2020. <https://www.statista.com/outlook/296/100/digital-payments/worldwide>. Accessed February 2021.

Underlying these massive shifts are fundamental changes in how consumers are shopping. The share of United States consumers who use digital channels to shop in the U.S. has surged nearly four-fold since the pandemic: Close to half are now using such channels to purchase retail products.<sup>3</sup>





These shifts are not limited to the U.S. market. The digital shopping shift has been even more dramatic in countries such as the U.K., where the pandemic has also had a severe impact. Barely half of the country's consumers prefer in-store shopping, with the rest taking a

digital-first approach by either using their computers or mobile devices to shop and have purchases delivered or by ordering online and availing themselves of store pickup options.<sup>4</sup> These shifts are also not limited to advanced economies: The use of digital shopping channels has grown more than 40 percent in Brazil, fueled largely by consumers' wide adoption of smartphones.

These changes are not just temporary adaptations, either. Three-quarters of U.S. consumers plan to maintain the online shopping habits they adopted during the pandemic after it subsides.<sup>5</sup>

**TABLE 1:**

**Percent growth or decline in use of select shopping channels since the pandemic's onset**  
Change in the share of consumers preferring shopping channels in each country studied

	 U.S.	 U.K.	 Australia	 Brazil
• Online native	17.0%	28.9%	24.0%	42.1%
• Online cross-channel	38.0%	13.7%	18.3%	4.1%
• Brick-and-mortar	-9.6%	-10.9%	-6.0%	-17.4%

Source: PYMNTS.com

<sup>3</sup> Online Security And The Debit-Credit Divide. PYMNTS.com. 2021. <https://www.pymnts.com/study/credit-cards-online-security-study-elan/>. Accessed February 2021.

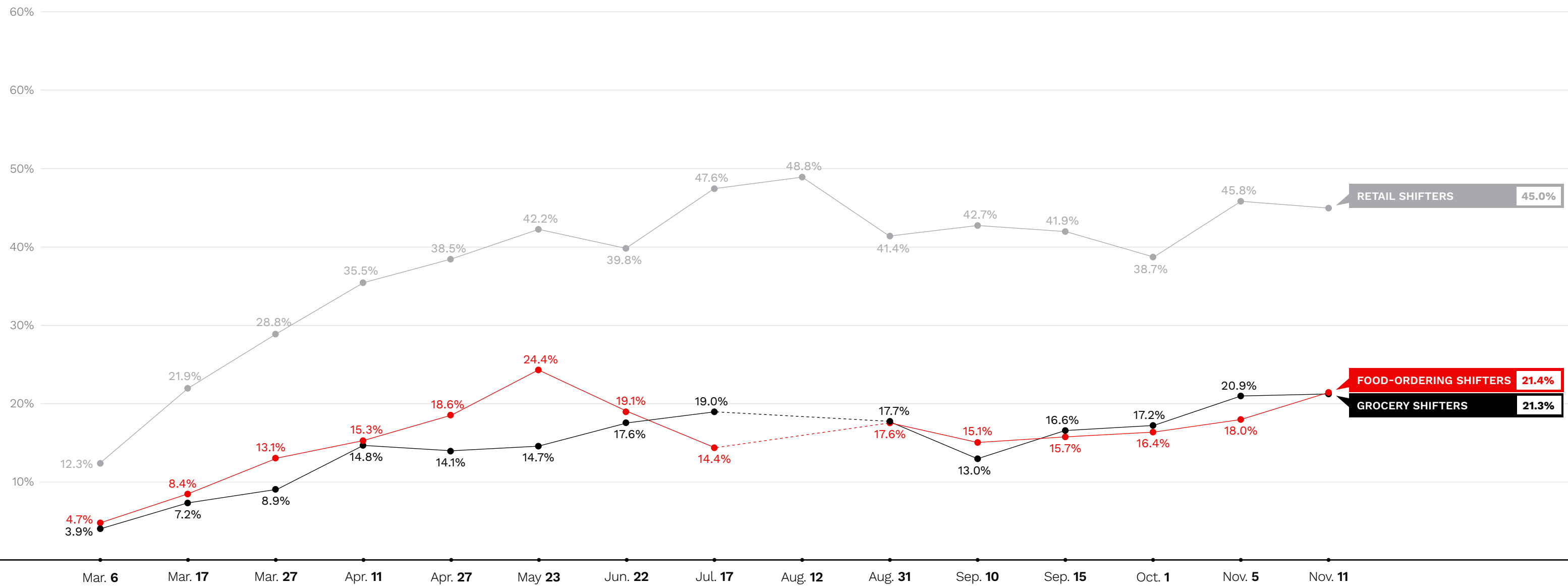
<sup>4</sup> Global Digital Shopping Index: United Kingdom Edition. PYMNTS.com. 2021. <https://www.pymnts.com/study/global-digital-shopping-index-cybersource-uk/>. Accessed February 2021.

<sup>5</sup> Mapping Consumers' Return To The Physical World: Why Digital-First Behaviors Are Here To Stay. PYMNTS.com. 2021. <https://securecdn.pymnts.com/wp-content/uploads/2021/01/January-2021-Mapping-Consumers-Return-To-The-Physical-World.pdf>. Accessed February 2021.

**FIGURE 1:**  
**The evolution of consumers' shift to digital commerce**

Share of consumers engaged in select activities who have shifted to performing those activities online, by date

Source: PYMNTS.com



## THE IMPLICATIONS OF CLICK-TO-PAY COMMERCE

Amazon got where it is today, with revenues that rival or exceed many countries' gross domestic products (GDPs), by employing digital technology and providing customers with what they want as quickly and seamlessly as possible.<sup>6</sup> In many ways, the lynchpin of the company's massive operations is payments. Browsing customers are converted into buying ones because the company makes the payment process simple and flexible. Customers can pay how they want with a single click and without having to fish for credit card information or fill out multiple fields.

It would be one thing if the Amazon effect were confined only to the eCommerce giant's corner of the internet, but consumers have increasingly come to expect such transactions wherever they are. Thanks to mobile devices and the internet of things (IoT), consumers can make purchases almost anywhere. In a sense, the world is witnessing the Amazon-ification of commerce.

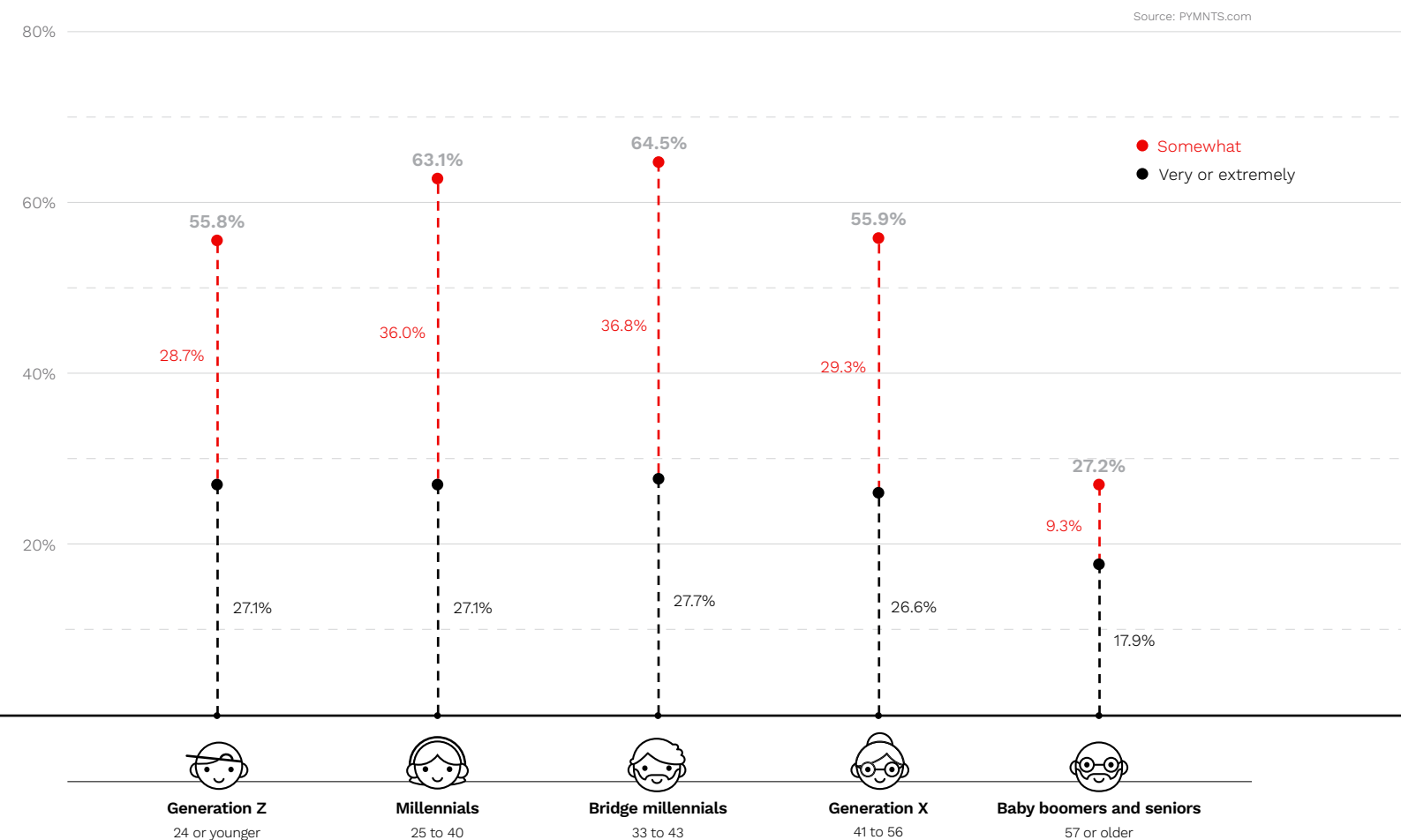
Every brand synonymous with Big Tech has branched into financial services in their own ways, with Amazon Pay, the Apple Card, Apple Pay and Google Pay being a few notable examples. Google recently ventured even deeper into traditional banking by announcing plans to integrate checking and peer-to-peer (P2P) payment services as part of its digital wallet.<sup>7</sup>

Consumers are increasingly agnostic about from where their financial and banking services come, and this is especially true for younger consumers who are accustomed to navigating the world through smartphones and other connected devices. PYMNTS found that 65 percent of those between ages 31 and 42 — a key banking demographic in terms of income and spending — would be likely to open banking accounts with Amazon, Apple or Google if they were offered.<sup>8</sup> Thirty-seven percent would be “very” or “extremely” likely to do so. This interest is not limited to these groups, either, with majorities of millennial and Gen Z consumers also likely to turn to technology giants for their banking needs.

These developments are naturally creating competitive pressures for incumbent banks. These firms, which operate as the traditional issuers of cards that support digital transactions, risk being sidelined from a multitrillion-dollar value chain if they are not at the top of consumers' wallets — digital or otherwise.

This does not mean that banks are on the verge of being disrupted out of existence. In fact, banks have been vital partners in the tech giants' offerings, including Apple Card and Google Pay's planned checking accounts. Banks' internal systems must be able to interface with the digital payments ecosystem, however, to enable these types of collaborations with technology companies — and not just the titans of Silicon Valley — or to offer digital products and services on their own.

**FIGURE 2:**  
**Interest in opening payment accounts with Big Tech companies**  
Share of consumers who would likely open payment accounts with Amazon, Apple or Google



<sup>6</sup> Daly, K. Big Tech's power, in 4 numbers. Axios. 2020. <https://www.axios.com/big-techs-power-in-4-numbers-de8a5bc3-65b6-4064-a7cb-3466c68b2ea0.html>. Accessed February 2021.

<sup>7</sup> Rooney, K. Google moves into Venmo and bank territory with checking accounts and updated payment app. CNBC. 2020. <https://www.cnbc.com/2020/11/18/google-moves-into-venmo-and-banking-turf-with-checking-account-app.html>. Accessed February 2021.

<sup>8</sup> Building A Better App: Banks And The Innovation Imperative. PYMNTS.com. 2020. <https://www.pymnts.com/study/building-a-better-app-banks-and-the-innovation-imperative-february-2020/>. Accessed February 2021.

# CASE STUDY 01

TRUIST 

**ON HOW THE CLOUD, MICROSERVICES  
AND APIs ARE CENTRAL TO CREATING  
A DIGITAL-FIRST BANK**

It has often been said that banks need to reinvent themselves in order to adapt to and keep pace with consumers' and businesses' demands for faster and more robust digital payment services and capabilities. This reinvention could be a matter of marketing and lip service for some banks. For Truist – the bank formed from the merger of BB&T and SunTrust, two venerable U.S. financial institutions that can trace their origins back to the 1800s – committing to being digital-first was put to the test from its inception. The pandemic struck three months after the merger, triggering a massive shift toward digital commerce and digital banking, as well as a sharp decline in the use of cash.

“This is really the first major bank merger [occurring] squarely in the digital era,” Dan Massey, Truist’s head of digital banking, told PYMNTS in a recent interview. “I think it’s safe to say that digital has become the primary channel for routine banking transactions for our consumer clients,” Massey said.

The surge in digital banking channels is really just one aspect of a wide-ranging digital shift that has been greatly accelerated by the pandemic. A massive share of commerce has gone digital, as have the means by which consumers and businesses make and receive payments. It has become incumbent on banks to support these transactions, which are more often occurring not at the physical point of sale

but in digital native environments through cards, digital wallets and P2P payments.

## **THE CLOUD ARCHITECTURE TO SUPPORT PAYMENTS ANYTIME, ANYWHERE**

Perhaps the most important characteristic of digital payments is their real-time, instant nature. This can be among the most vexing challenges for banks, especially established ones with legacy core payment systems built for an era when payments could be processed in batches at the end of a business day — or later.

Truist is overcoming these challenges by fully embracing cloud-, API- and micro-service-based approaches to supporting digital banking and payment services.

“It’s really all about getting the tools into the hands of our clients in a safe, secure and timely manner,” Massey said. “So this allows us to get these experiences to our clients sooner, and it also helps us to migrate clients in waves so we can very carefully monitor the [client] experience and learn from that and quickly release improvements to that as we go.”

The microservices approach is part of a long-term plan that will ultimately entail integration with on-premise bank systems, Massey explained.

“With this API layer and microservices layer, we can bring the experience together but then identify which of the heritage banking core systems need to be accessed, and then once the core conversion is complete, which will be a little bit further down the road, then we can just collapse that and it’ll be the same experience.”

The range of innovations in payments and banking today can be dizzying, encompassing end-user apps and the superstructure of card networks and pay-

ment rails. Massey stressed that clients ultimately guide how the bank innovates digital services. This is particularly relevant when it comes to RTP, the instant account-to-account payment network operated by TCH in the United States.

“We have invested in having that capability ... and we will be leveraging real-time payments more and more to address specific needs and use cases of clients,” he said. “It’s a constantly evolving space, and it requires us to continually look at and reinvest in [the] client experience.”

### **A MOBILE-CENTRIC APPROACH TO BANKING AND PAYMENTS**

One notable development since the pandemic began is a growing reliance on mobile payment and banking channels, a somewhat surprising development given that many consumers have been spending a lot more time at home with their computers nearby. Account holders can do a lot more with banking apps than simply check their balances — and consumers have been looking to mobile to

accomplish even more of their banking needs since the pandemic began.

Truist has witnessed its mobile services increase in use by 12 percent year over year, with mobile deposits up 22 percent, and it also found that Zelle-supported P2P payments are also on the rise. Massey stated that the company’s bank app offers biometric authentication, card transaction controls, the ability to view and control multiple accounts and the ability to perform budgeting and financial planning tasks.

The digital shift has meant that banks have had to redouble their efforts to be their customers’ card of choice, whether in physical or — as is increasingly the case — digital form. This means securely integrating with online and mobile platforms.

“We’re dealing with a ton of digital payments, and we’ve got a lot of work that we’re doing as far as making our card product top of wallet. Top of wallet used to be literally a physical wallet — now it [refers to] a digital wallet,” Massey said. “We try to find out where our clients want

us to be and how can we make it easier for them to get access to whatever payment method that they need, whether it’s a P2P transaction or whether it’s some other digital point of sale ... We were early adopters with Apple Pay and Google Pay, and we want to be sure that we are where our clients need us to be.”

For all its focus on being digital-forward, Truist is not going the route of a digital bank. It will keep its bank branches and ATMs, and it will remain committed to serving the communities in which it is based, Massey said.

“The bank branch network, the ATMs ... and the digital will all work together in concert to meet the needs of our clients — and I think it’s going to be that way for a long, long time.”

The digital ecosystem will not swallow up traditional banks, in other words — so long as banks are prepared to evolve alongside it.



# Payments as a strategic opportunity for growth

Customers' behavioral changes regarding payment services pose risks for banks. Consumers are becoming agnostic about the entities that provide them as long as the services function well. This has also opened up unprecedented opportunities for banks to expand their revenue streams and create new ones. Banks have inherent advantages in this changing landscape — specifically the trust consumers tend to place in them, their knowledge of their markets' complexities and their statuses as license holders. The following are some key ways banks are leveraging their positions to seize the opportunities in the changing digital payments landscape.

## FROM BRANCH TO CARD AND BEYOND

Opening a bank account was once a complicated process that could only be accomplished by going to a local branch, but those times have passed. Digital routes to account acquisition and onboarding now exist and have become increasingly well-traveled since the pandemic's onset. This is reflected in the global rise of digital banks.

The number of digital banks has grown 200 percent globally since 2015, with many outperforming incumbent banks in terms of revenue growth. The revenue divide has been especially striking amid the pandemic in the Asia-Pacific region, where the digital banking market is particularly robust. Access to bank branches has been greatly curtailed, causing Japan's top six digital banks to experience a net profit increase of 8 percent since the pandemic's onset. The nation's three largest incumbent banks experienced a nearly 50 percent drop in net profits.<sup>9</sup>

Digital banks have been labeled and grouped into various categories, including challenger banks and FinTechs, and some simply start as issuers of compelling credit cards that are often provisioned virtually. Successful digital banks leverage data about their customers and their target markets to expand into other services, such as check depositing and spending management, all via a single app. Compelling spending tools — whether credit cards, debit cards, digital wallets or virtual cards — are thus not mere value-added services. They can become the foundation of customers' financial homes.

<sup>9</sup> Author unknown. Digital Challenger Banks: A Desire, A Dream, A Vision. Singapore FinTech Association. 2020. <https://camarafintech.com.ar/wp-content/uploads/2020/11/Digital-Challenger-Banks.pdf>. Accessed February 2021.

<sup>10</sup> Weng, W. Thirteen most profitable digital banks in Asia Pacific upped earnings by 49% in 2019. The Asian Banker. 2020. <https://www.theasianbanker.com/updates-and-articles/thirteen-most-profitable-digital-banks-in-asia-pacific-upped-earnings-by-49-in-2019>. Accessed February 2021.

## THE RISE OF REAL TIME

Many consumer-facing payment innovations, such as buy buttons, are designed to appear instantaneous, but banking professionals know this is not necessarily the case. It can take days or weeks for the funds involved in such transactions to actually move from one account to another. These delays do not necessarily pose an issue for small-dollar transactions, but they can be impactful when it comes to larger sums and merchants concerned about cash flows. Instant payment networks have steadily gained traction around the world as a way to move funds from one account to another in real time, 24/7 year-round.

The Real-Time Payments (RTP) network from The Clearing House (TCH) went live in the U.S. in 2017, joining several dozen networks around the world that enable near-instant fund transfers. In addition to the provided speed and 24-hour opera-

bility, remittance data is embedded in the transfers, affording banks and businesses greater visibility over their payment flows.

Real-time payments offer banks and their business customers obvious benefits in terms of cash flow and visibility, and the pandemic has magnified this benefit. TCH recently estimated that 70 percent of checking accounts in the U.S. are now able to access the RTP network.<sup>11</sup> Real-time payments also benefit consumers and workers with business-to-consumer (B2C) disbursements. The time and effort involved in depositing paper checks was taxing before the pandemic and became exceedingly difficult — if not impossible — afterward, given restrictions at bank branches.

Worker compensation is another area in which real-time payments could improve longstanding frictions associated with the traditional biweekly or monthly payroll cycle. These processes are especially

out of step with a workforce increasingly made up of freelancers, contractors and gig workers. Uber pioneered on-demand pay options for its drivers, illustrating another way the platform economy is driving changing payment expectations. A growing share of workers are now being paid via app, digital wallets and pre-paid cards, and banks are well-aware that paychecks — in whatever form they take — are crucial anchors for customer accounts.<sup>12</sup>

## NEW AND EMERGING MARKET OPPORTUNITY

The typical digital bank customer in the United States might be an upwardly mobile millennial, but digital-first technologies have different significance and reach in the developing world. Mobile technology has been the on-ramp for many in such nations, enabling them to gain access to the global financial system and allowing them to leapfrog the lack of hard-wired banking infrastructures.

This path is being paved by the rapid penetration of smartphones in developing economies. One estimate suggests that smartphone ownership will reach 80 percent globally by 2025, with especially robust adoption in South Asia and Latin America.<sup>13</sup> There is a generational component to adoption as well, with an estimated 85 percent of Brazilians between the ages of 18 and 35 having smartphones.<sup>14</sup>

The market potential for banking services aimed at underbanked or unbanked consumers in the developing world has been estimated in the hundreds of billions and trillions of dollars — there are 1.7 billion individuals around the world who lack bank accounts, so estimates tend to vary. The potential is undeniably massive, however, and it has spurred considerable technological innovations, such as using AI to support alternative credit scoring and authentication systems.<sup>15</sup>

<sup>11</sup> RTP Network Reaches 56 Pct Of US Checking Account Holders. PYMNTS.com. 2020. <https://www.pymnts.com/news/faster-payments/2020/rtp-network-reaches-more-than-half-united-states-checking-accounts/>. Accessed February 2021.

<sup>12</sup> ADP On Prepaid Cards, Digital Wallets' Role In The Future Of Payroll. PYMNTS.com. 2020. <https://www.pymnts.com/next-gen-debit/2020/adp-prepaid-cards-digital-wallets-payroll/>. Accessed February 2021.

<sup>13</sup> Author unknown. Global Mobile Trends 2020: New decade, new industry? GSMA Intelligence. 2020. <https://data.gsmaintelligence.com/api-web/v2/research-file-download?id=47743151&file=2863-071119-GMT-2019.pdf>. Accessed February 2021.

<sup>14</sup> Silver, L. Smartphone Ownership Is Growing Rapidly Around the World, but Not Always Equally. Pew Research Center. 2019. <https://www.pewresearch.org/global/2019/02/05/smartphone-ownership-is-growing-rapidly-around-the-world-but-not-always-equally/>. Accessed February 2021.

<sup>15</sup> Beyond The Card: Toward The Cardless And Contactless Future. PYMNTS.com. 2020. <https://www.pymnts.com/study/contactless-cardless-solutions-benefits-business-digital-economy-i2c/>. Accessed February 2021.

# The bank as a bridge to the connected economy

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**P**ayments have long been an essential driver of the platform economy. Uber would have never gained traction without highly effective, real-time payment systems, and the same can be said for Airbnb and many of this century's fastest growing enterprises. Banks thus stand to play a vital role in these evolving ecosystems as institutions that can enable the transparent, frictionless and accessible payments that make the connected economy go.

All of this begs the question: How can banks deliver these payment capabilities when their own internal software systems may date back to the middle of the last century? This task may be especially daunting for smaller banks that lack substantial IT departments — and the challenges go beyond internal technical resources. Significant regulatory and security protocols are also involved in successfully delivering robust, rapid and global payment services. These challenges underscore the value of end-to-end, cloud-based solutions and APIs and working with the right technology partners.

These challenges often start with banks' on-premises computing systems and their inability to support wide-ranging, real-time and adaptable digital services. Inflexibility is the payment system short-coming U.S. banks most cite, followed by the coding, costs and delayed time to market associated with such systems.<sup>16</sup>

Regulations and security add additional layers of complexity, and these rules vary depending on location. The European Union's revised Payment Services Directive (PSD2) requires banks to open up their APIs while setting strict security and privacy standards, for example. The rules require two-factor authentication (2FA) for digital payments under a broad range of circumstances. The ISO 20022 standard establishes uniform formats and terminology for transmitting payments among financial institutions around the world. A large share of banks has already adopted these standards, and global payment network SWIFT estimates that 80 percent of all high-value payments worldwide will soon use them.<sup>17</sup>

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<sup>16</sup> Innovation Readiness Index. PYMNTS.com. 2019. <https://www.pymnts.com/wp-content/uploads/2019/03/Innovation-Readiness-March-2019.pdf>. Accessed February 2021.

<sup>17</sup> Author unknown. ISO 20022 adoption programme. SWIFT. 2020. <https://www.swift.com/standards/iso-20022/iso-20022-programme>. Accessed February 2021.

## THE TECHNOLOGY TO SUPPORT A PROGRESSIVE APPROACH

The technical and regulatory complexity involved in bringing well-functioning and compliant digital services to market highlights the advantages of a microservices-based approach to innovation that is supported by cloud platforms and APIs, which can be seen as the connective tissue that allows bank data to interface with the wider world of digital commerce. A microservices-based architecture allows financial institutions (FIs) to build applications that are adaptable to market conditions and regulatory and security requirements. They are the antithesis of a traditional approach to system overhauls that run the risk of being obsolete by the time they are up and running.

Here are some of the key advantages such an approach offers:

- **Improved agility and adaptability**

A microservices architecture is designed to be responsive to market circumstances, including adverse ones, such as security or technical issues. These can thus be addressed without the risk and labor involved in updating monolithic systems.

- **Better data visibility**

Banks can get immediate market feedback to improve their digital offerings as well as visibility on their payment flows in real-time through services like payment hubs. These allow banks to work with different payment types and flows from multiple formats and sources in an integrated way.

- **Enhanced compliance and security**

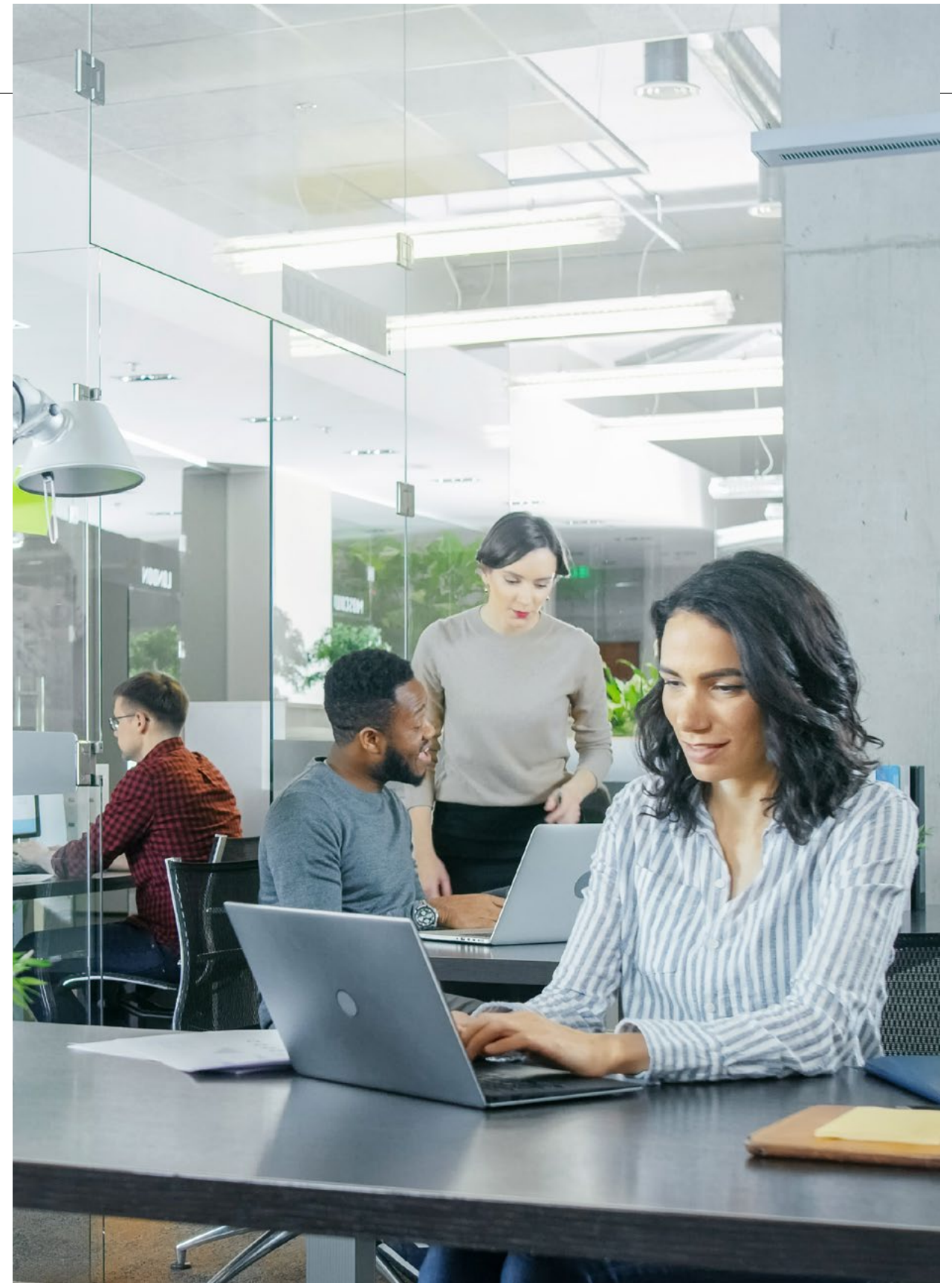
These are contained within the specific digital services banks seek to launch.

- **Real-time processing**

The use cases and potential for real-time payments are evolving and proliferating rapidly. Agile microservices-based architectures allow banks to seize opportunities and adapt with the market.

- **Cloud provider agnostic**

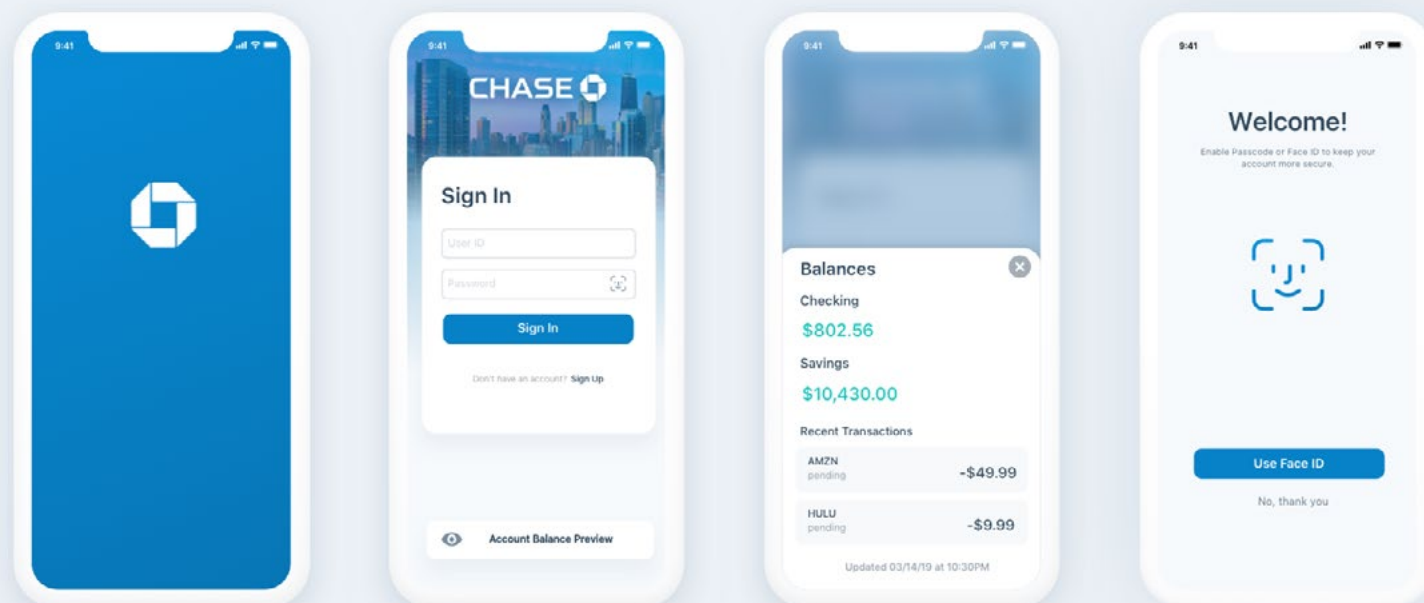
Open-source, cloud-based solutions are key to partnering with a wide array of businesses in adjacent sectors, such as insurance, to develop services.



# CASE STUDY 02

J.P.Morgan

ON THE ROLE PAYMENTS AND BANKING  
PLAY IN THE CONNECTED ECONOMY



Many believe that FinTechs and digital banks are the ones leading the charge when it comes to digital disruption in banking and finance, leaving large established banks flatfooted and vulnerable, but the reality is far more complex. Some big banks are not just dipping their toes in the digital-first banking pool — they are jumping in headfirst.

JPMorgan Chase & Co. has roots that go back nearly to the founding of America, and today it is the largest bank in the country and the seventh largest in the world in terms of total assets. The FI is aggressively pursuing a multipronged digital strategy that includes plans for a digital bank in the U.K. — one of the more active global markets for online-only banks. This strategy is having its greatest impact in Chase’s home market, the U.S., where nearly half of all households have bank accounts. This includes some 55 million “digitally active” consumers — those who regularly use mobile and online services.

It is not difficult to surmise why digital services are now driving strategies at Chase and other banks. The pandemic has closed off or complicated conventional means of managing bank accounts, such as branch visits, and it has boosted

demand for online payments via debit and credit cards, digital wallets and P2P apps.

## MOVING BEYOND DIGITAL BANKING

The challenge many banks face today is supporting payments everywhere and anytime consumers make them. This increasingly means seamless and secure payment capabilities are embedded in the services consumers use, including everything from online shopping to ride hailing and meal delivery services. Banks like Chase are enabling many of these services through APIs and cloud technologies.

“APIs have enabled us to securely enrich our customer experience across our digital ecosystem by extending the Chase experience with trusted third parties,”

said Allison Beer, chief product officer and head of customer experience and digital at Chase, who cited examples like DoorDash and Lyft.

The fundamental premise behind building flexible and agile bank payment platforms is that services can quickly be rolled out and adapted to meet changing market demands. This has been demonstrated by a surge in P2P payment transactions since the pandemic's onset: Consumers are averse to paying with cash because it can potentially carry the virus, and sending checks — already a diminishing practice — has become even more cumbersome and inconvenient.

According to its recent [Digital Banking Attitudes Study](#), Chase found that 30 percent of respondents had signed up for P2P services in the last six months, and 45 percent of longer-term users are using them more often than they did a year ago. The Zelle network [processed](#) 1.2 billion total transactions in 2020, representing \$307 billion — a 62 percent increase year over year.

“P2P payment services, like Chase Quick-Pay with Zelle, are increasingly being used

to send money or to split the cost of bills. People appreciate that these payment solutions make it easy to track spending in a way that's contactless and convenient,” Beer noted.

### A SHIFT TOWARD PARTNERSHIP

The digital shift has had a more direct impact — beyond how consumers are making payments today — for many banks. The pandemic has fundamentally altered how consumers handle their banking needs at a time when many are hesitant to make unnecessary trips to branches, which are operating with greater restrictions.

Chase has had a firsthand perspective on these trends. The share of Chase customers who actively use mobile services has grown 10 percent year over year, while the share of digitally active users has grown 5 percent. Much of this growth has notably been driven by older consumers, bucking stereotypes when it comes to digital adoption. Half of the bank's new digitally active customers are over 50 years old.

Another direct manifestation of these trends is a surge in mobile deposits,

which the company says now represent more than 40 percent of all check deposits.

Chase has also turned to APIs to enable bank customers to avail themselves of third parties' financial services for budgeting, tax preparation and other purposes. The bank lets customers [control](#) which accounts — and what information from those accounts, such as balances or transactions — they choose to share with apps and companies through a dashboard on its website and in its mobile app.

“It gives them more control over what they share and helps them to share it safely,” Beer said. “Through the API, they know exactly what information they're sharing, which accounts they're sharing from and who they're sharing it with, without needing to share their Chase usernames and passwords.”

This demonstrates that, when it comes to meeting consumers' demands for better digital payment and banking services, even big banks view partnership as the way forward.

“Through the API, [customers] know exactly what information they're sharing, which accounts they're sharing from and who they're sharing it with, **without needing to share their Chase usernames and passwords.**”

# Taking a progressive approach to payments modernization

**E**very bank would design, roll out and run robust digital payment services on a day-to-day basis if it were simple, but such solutions require investment, strategy and training. Digital payment innovation should be viewed as a process with several key milestones along the way.

**01**

## Taking stock of current capabilities

The road to offering robust digital services starts with taking a clear-eyed view of current banking capacities and limitations. Many banks previously retrofitted their existing systems to support digital services, such as online and mobile banking. The trouble with this approach is that technological investments can quickly become overburdened and outmoded. Long-term trends clearly indicate that demand for more robust and functional payment services will grow, as will the migration to cloud platforms that support such capabilities.

This does not mean that banks should either undertake systemwide overhauls or none at all. A progressive approach to modernization allows banks to take a phased approach by focusing on the specific services and features they want to enhance or introduce. Moreover, this approach can enable banks to incrementally transition to the cloud for specific applications while keeping on-premises systems intact.

02

### Targeting and testing key services

Ensuring that a new digital service works as intended before being launched is important in any field, but this is especially the case in banking, given the industry's regulatory and fiduciary complexities. Banks' technology partners should offer robust testing environments to ensure the services function well from the perspectives of functionality and user experience. These "sandboxes" allow developers and clients to experiment and innovate a new service until it is ready to move beyond the beta stage.

03

### Gauging revenues and other metrics

Building new payment systems represents a substantial investment for banks, which is part of the reason why many have found themselves with systems badly in need of modernization. One of the impediments banks face when taking on such projects is the difficulty in measuring or quantifying the return on investment (ROI). A microservices-based approach allows FIs to take on modernization in incremental ways while measuring ROI and other metrics every step of the way thanks to the rich streams of data associated with each service. This means that investments can be assessed based on a range of considerations, including bottom-line revenue, user engagement, new customer acquisitions or efficiency savings.

04

### Reassessment and strategizing

"Agility" is not just a buzzword when it comes to banking innovation. A microservices- and cloud-based approach can enable banks to not only bring digital services to market quickly but also allow them to adjust and pivot based on market feedback. It is possible that a new service may have an underwhelming reception when first launched or that a specific feature will prove more popular than anticipated, becoming a centerpiece of subsequent versions or setting development teams on an entirely new course. Organizations employing agile technology systems can make specific changes based on data analytics, allowing for an ongoing iteration process.

## FINDING THE RIGHT TECHNOLOGY PARTNERS

Bank leaders should bear several considerations in mind in deciding which technology providers to work with and how.

- **ONBOARDING AND ISSUANCE:**  
Can the provider support instant customer onboarding and card issuance?
- **PERFORMANCE:**  
Does the provider have a strong track record in building and supporting digital banking services and can it show specific metrics, such as straight-through processing rates?
- **INTEGRATION:**  
Can solutions be seamlessly integrated into existing enterprise resource planning (ERP) and on-premises IT systems for both banks and end users?
- **SIMPLICITY:**  
Can the provider clearly explain how its solutions work and provide banking staff with all necessary guidance?
- **SCALABILITY:**  
Does the provider have the technical capacity to support rapid growth?
- **COMPLIANCE AND SECURITY:**  
Does the provider employ artificial intelligence and other sophisticated technologies to protect against fraud threats and ensure regulatory compliance globally?



# LOOKING AHEAD

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**T**he current economic and social environment has brought two trends to the fore for banks: Commerce has undergone a massive shift to digital channels while the payments experience is becoming increasingly invisible, enabled by seamless, instant digital processing capabilities. Many banks have internal computing systems that built on layers of software that date back decades, however, and they are grossly outmatched by the challenges involved in keeping pace with such trends.

These circumstances require banks to look to new models for the digital services and features their customers and

clients expect and demand. Working with technology partners capable of delivering microsystems approaches can enable banks to deliver mission-specific digital applications while sidestepping the costly task of overhauling these systems in one go. These integrations help ensure that consumers and businesses can access banking services in vital and novel ways, when and where they need them.

Banks are well-aware that their reputations and regulatory licenses rest on offering compelling digital services while also meeting strict standards for compliance and security. Microservices-focused architectures can help banks bring

end-to-end digital services to market quickly while also realizing greater organizational visibility and efficiency without jeopardizing fundamental responsibilities. They also provide the data visibility and analytics that are vital to evaluating and informing innovation strategies.

The advantages conferred by shifting to microservices-based payments architectures will only grow in the months and years ahead, given current digital adoption trends. It is possible that the only banks left standing in the not-too-distant future will be those with banking architectures capable of supporting the digital financial services consumers demand.

# EXECUTIVE INSIGHT

## **MODERNIZING PAYMENT SYSTEMS IS A PRIORITY FOR MANY BANKS, YET MANY HAVE TAKEN ONLY HALTING STEPS TO DO SO. WHAT ARE SOME OF THE CONCERNS HOLDING BANKS BACK, AND HOW DO YOU ADDRESS THEM?**

I think one of the reasons banks are being held back from modernizing their payment services has to do with the way they fund their technology investments. Right now, they will use capital expenditures, which means that they have to be able to show a return in order to justify most of the cost. Many banks are looking for a one- or two-year payback, especially in the retail banking space, where payments have little or no direct revenue impact.

This really puts a hamper on their ability to do a full-scale replacement, because they'll struggle with being able to get the return on investment in such a short period of time. But

it's one of those necessary cable-maintenance kinds of things that they should have in order to support what is happening in the digital economy. So that, to me, is a big challenge — the balance sheet management of how they make investments.

I think banks, especially those in the consumer space, are trying to garner the attention of new consumers and understanding what they are looking to get as an outcome from their actual payment services. From that, the bank should then be doing an assessment on their internal technical capabilities and talent as they look to compete.

**KELLY SWITT**

senior director of financial services industry strategy, ecosystem and strategic partnerships at [Red Hat](#)

## **DATA IS A VITAL — AND SOMETIMES UNDERAPPRECIATED — COMPONENT OF DIGITAL TRANSACTIONS. WHAT ARE SOME IMPORTANT WAYS BANKS ARE LEVERAGING THIS DATA?**

I see four key areas to highlight: transparency, analytics, automation and standardization.

### **Transparency**

Transparency is about how you provide access and report the data back out to your customer, so how you make the data available for them to consume, be it through APIs or streaming feeds. This is about being able to provide what's happening with their requested payment transactions and/or what's happening with incoming transactions by notifying them of status updates in a transparent and interactive way ... to multiple different devices within the digital landscape.

### **Analytics**

[Another way] banks are leveraging that data is through high-end, AI-driven analytics [that enables them] to see patterns ... On the one hand, this allows the bank to provide better services to their customers, but it [also] permits the bank to find fraud and criminal activities ... identify[ing] where the bad actors are using your institution and the system. ... By understanding the patterns the customer is following, the bank can generate additional revenue-generating services whilst also raising customer satisfaction.

### **Automation**

Automating the payment flows in any bank, but especially those processing larger volumes, is dependent on ensuring the data elements for routing and successful processing within the transaction are correct. There may be a need to enrich the data of an outgoing or incoming payment request, and thus easy access to both internal and external master data repositories can be critical to achieving the goal of high rates of automation. However, even when an exception is identified, the repair can be automated if your systems have the intelligence, through AI or machine learning, and access to the appropriate data sets to be able to automatically repair that transaction. Thus, through data-led optimizations, customers are receiving their funds quicker, and their funds are reaching their destination more rapidly.

### **Standardization**

No financial institution is an island. They must constantly communicate with other financial institutions as part of the transaction processing chain. This requires the exchange of data to pass on orders, to execute the clearing of the payment, and the success of this exchange is based on the standardization of data sets. These days, those data models are changing and expanding to support new standards like ISO 20022, harmonizing payment processes around the world and impacting domestic networks as well. This increasing standardization of the global payment data set requires enhancements to systems as well as expansion of data storage and processing capacities as more information is required to be exchanged and processed as part of the digital payment age.

**MICK FENNELL**


business line director, payments at [Temenos](#)

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