

WORLD PAYMENTS REPORT 2021



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PREFACE

The pandemic affected *business as usual* in all sectors. But in the payments industry, business hasn't been *usual* for years. So, when lockdowns, supply chain interruptions, and economic uncertainty consumed much of our thinking for nearly 18 months, the already-dynamic payments ecosystem offered a perfect storm for multidimensional disruption.

Well before 2020, consumers and commercial clients were already clamoring for digital experiences similar to what they had come to expect from other service providers. Then, COVID-19 infused urgency into demands for convenient omnichannel payment services. As the crisis escalated, PayTechs and industry newcomers responded with novel business approaches and innovative people-focused offerings that boosted customer experience (CX), intensified disintermediation, and hit payment service provider profits.

Fast forward to the new era, **Payments 4.X**, an experience-driven environment in which payments firms are profitably shaking things up even more by swapping out once-typical engagement practices for value-added *experiences*.

Digitally enthusiastic consumers – vocal about convenient, lifestyle-embedded payments – helped spark Payments 4.X. So did escalating B2B2C requirements for instant confirmation, smooth reconciliations, and seamless cross-border transactions.

However, non-cash payments' double-digit volume growth momentum came to a screeching halt globally in 2020. After eight years, volumes rose at a single-digit 8%. Nevertheless, a rebound appears imminent. Consumers are expected to crank up spending as vaccinations advance, restrictions ease, tourists and business travelers resume itineraries, and shopper confidence builds.

Today, the demand for contactless payment options is unprecedented. Similarly voracious are appetites for fast transaction settlements, instant payments, e-money, failsafe security, and wow-factor customer experience.

Payments service providers have been the beneficiaries of a recent balanced approach to key regulatory and industry initiatives (KRIs) to promote and facilitate a payments-friendly environment. For the first time since we've begun tracking KRIs, regulators supported balanced action across all primary objectives (risk reduction, standardization, competition/transparency, innovation) to maintain equilibrium within the payments landscape.

With a focus on personalized CX, the dawning Payments 4.X era is being enabled by data, shared infrastructure, robust platforms, and embedded finance. So, where does that leave traditional firms? Operational challenges lie ahead unless providers prioritize capabilities that enable experience through payments. The most strategic payments players are already partnering with PayTechs and synergistic ecosystem partners to craft solutions based on CX, not products.

High-performing Payments 4.X early adopters will become tomorrow's embedded finance leaders. Increasingly, *as-a-Service* models will create a modular value chain, opening up opportunities for disruptors with innovative business models. Therefore, within an era of continuous modification and mutation, short development cycles, and intense competition, success will depend on the strength of each firm's complementary partnership ecosystem.

Each payments provider is at a unique evolutionary stage. Thus, a customized game plan is essential. As ever, Capgemini's payments experts are here to help you put a plan in motion to leverage data, digitally transform, enhance customer engagement, and nurture collaborative synergies. I hope you find this year's report insightful.



Anirban Bose

Financial Services Strategic Business Unit CEO
& Group Executive Board Member, **Capgemini**

EXECUTIVE SUMMARY



As transformation momentum continues to shake up payments... ...enter **Payments 4.X**, the new, experience-driven era

- Pandemic accelerated transformation is forcing payments firms to replace ongoing engagement with value-added and embedded experiences.
 - Growing consumer desire for convenient, lifestyle-embedded payments, together with retailer requirements for instant confirmation, smooth reconciliations, and seamless cross-border transactions, sparked **Payments 4.X**.
- Future-proofing firms will leverage **Payments 4.X** pillars – **data, shared infrastructure, robust platform capabilities, and embedded finance** – to deliver superior customer experience.
 - As digital adoption continues to rev up, traditional payments business profits will be less attainable within an operationally challenging environment.
 - Meanwhile, future-focused providers are agilely scaling capabilities to enable **experience** through payments.
 - B2B clients are following the digital trend and seeking transformation support from payments leaders acting as advisory partners rather than mere solution providers.
 - Frontrunners will collaborate with PayTechs and synergistic ecosystem partners to craft solutions based on CX, not products.
- Tomorrow's leaders will build on their earned customer trust, domain competence, and expertise while prioritizing technological capabilities needed for an embedded future.
 - API and data maturity, together with cloud-based agility, will fuel the sprint to Payments 4.X.
 - Firms can monetize payments data analytics into quick wins in risk management, credit-based lending, and trade finance to stay relevant while maintaining operational model exclusivity.



New customer habits, payment methods, and rails offer opportunities in an industry poised for remarkable post-pandemic recovery and growth

- The unprecedented push for contactless payment options, faster transaction settlements, foolproof security, and better CX is lifting the digital payments trajectory to new heights.
- Even though economic activity slowed in 2020 because of COVID-19 lockdowns and reduced consumer spending, a solid rebound to pre-pandemic levels is expected in 2021 and beyond.
- The pandemic was a tipping point for the B2B segment, now on track to record nearly 200 billion transactions by 2025.
- Instant payments and e-money are emerging as preferred methods and will account for more than 25% of global non-cash transactions by 2025, up from 14.5% in 2020.
- Next-gen methods – buy now, pay later (BNPL), invisible, biometric, and cryptocurrency – will drive digital payments growth.



Regulatory reinforcement helps a collaborative ecosystem thrive as firms industrialize innovation efforts

- Regulators have taken a balanced approach to key regulatory and industry initiatives (KRIs) categories to promote and facilitate a payments-friendly environment.
- Financial firms are collaborating with FinTechs, PayTechs, and peers to share compliance burdens, launch pan-regional initiatives, and generally, industrialize/commercialize previous investments.
- It's too soon to count on nascent central bank digital currency (CBDC) as an alternative to unregulated cryptocurrencies or an additional pathway to financial inclusion.
- By ensuring a level playing field through anti-monopoly measures and transparent data sharing, policymakers signal a future that's friendly to open finance.

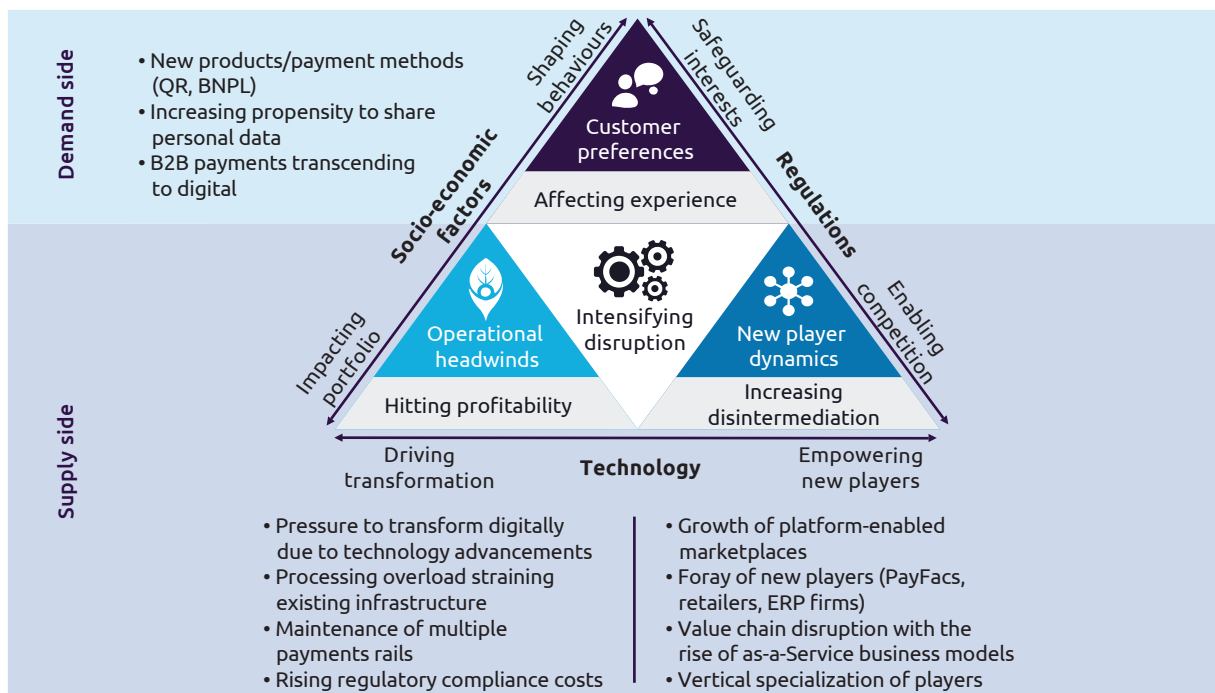
TRANSFORMATIONAL IMPETUS ENERGIZES AN ALREADY-DYNAMIC PAYMENTS INDUSTRY

Payments *on steroids* aptly describes the industry in 2020 and 2021. Wonder why? That little blip on the global radar – COVID-19 – drove retail and B2B customers (who already counted on superior digital experience in other aspects of their lives) to demand similarly convenient omnichannel payment services. Then, PayTechs and industry newcomers started to roll out novel business models and innovative people-focused offerings¹ All this as the pandemic set multi-dimensional disruption in motion that affected customer experience (CX), intensified disintermediation, and hit payment service provider profits.

As customer preferences and behaviors change, superior personalized experiences are the expectation

The digital appetite of retail and B2B customers continues to evolve and redefine customer engagement. For example, consumer attitudes toward credit are driving the adoption of “buy now, pay later” (BNPL) methods. Our 2021 Voice of Customer survey revealed that Gen Z is ditching credit cards for more user-friendly, engaging, and budget-focused alternatives, with BNPL a popular frontrunner.

Figure 1. The payments industry faces intensifying, multi-dimensional disruption



Source: Capgemini Financial Services Analysis, 2021.

¹ PayTech firms enable the electronic transfer of value. They are specialists in making payments fast, frictionless, secure, and exchangeable from anywhere. A payments and technology mash up, PayTech solutions can be anything from digital applications to physical contactless wearables.

Around 75% of consumers aged ≤30 told us they use credit cards less than 20 times a year, but they are keen to explore BNPL.

- According to a US focus group held in late 2020, merchants experienced a 20–30% lift in conversion rates and a 50–80% increase in average order value by adopting BNPL features, while repeat business improved by up to 20%.²

“Recently, customer behavior drastically changed regarding interactions with financial institutions, spending nature, and saving habits. Banks had to suddenly rethink ways to acquire and engage with customers, especially with the digitally naive.”

– **Claudio Di Nella**

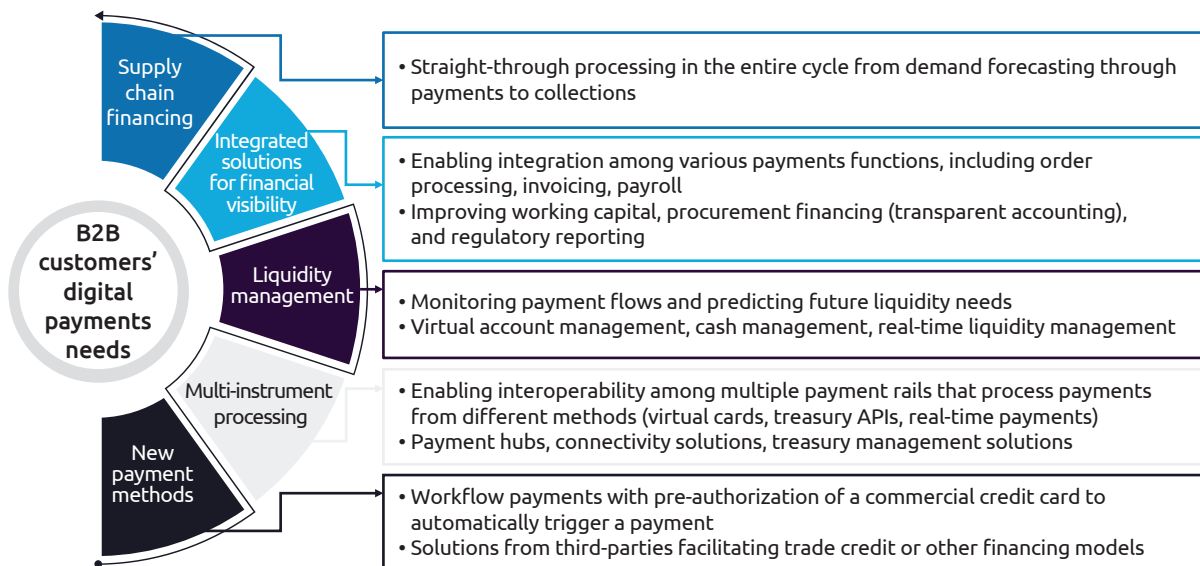
Head of Visa Consulting & Analytics (VCA), Europe

Similarly, commercial clients say they want “solutions” versus “products” – pushing traditional firms and banks to fast-track digitalization initiatives.

COVID-19 drove B2B payments to digitalization by interrupting day-to-day business, requiring remote work, and making on-site legacy payment systems dormant. Companies sought digital options to access and reconcile payments virtually. Digital payment methods reduced the challenges of traditional (paper-based) processing while managing regulatory, compliance, and cost-based tasks. Profitability and productivity improved.

- US banking giant **JP Morgan** earmarked USD12 billion for treasury payments innovation in 2019 and added +100 new treasury innovation team members within 18 months.³ The bank opened dozens of treasury services APIs, engaged several hundred clients on corporate treasury innovation and co-creation by working with more than 100 FinTechs. The bank also launched an AI-based virtual treasury assistant by collaborating with ~1,400 clients serving +240,000 users. JP Morgan’s *Interbank Information Network (IIN)* is a blockchain-based settlement network covering 400 correspondent banks globally.⁴
- Germany’s **Aareal Bank Group** integrated **PayPal** into its B2B platform solution and now offers the option to pay via PayPal in the *Aareal Exchange & Payment Platform (AEPP)* solution.⁵

Figure 2. B2B clients develop a hearty appetite for end-to-end digital solutions



Source: Capgemini Financial Services Analysis, 2021.

² [Merchant Advisory Group webinar](#), “Buy Now Pay Later – Transforming the Experience and Cost of Payments,” December 16, 2020.

³ [JP Morgan](#), “Technology Budget, 2019 annual report,” April 6, 2020.

⁴ [JP Morgan](#), “A Roadmap for Driving Innovation in Corporate Treasury,” accessed July 2021.

⁵ [Aareal](#), “Aareal Bank Group integrates payment provider PayPal into its own B2B platform solution,” May 7, 2021.



B2B segment is witnessing digital adoption significantly. As a result, we are now focusing on corporate customer business."

– **Gregor Roth**

Managing Director, DZ Bank, Germany

Estimates say cross-border business payments will reach USD35 trillion in 2022, up 30% from USD27 trillion in 2020.⁶ Similarly, B2B virtual cards are on track for enthusiastic acceptance over the next five years.⁷ The proliferation of instant payments and related value-added services such as request to pay now play a significant role in B2B payments digitalization.

Before the pandemic, banks and payments firms promoted corporate connectivity and treasury management solutions to their large corporate clients. The transition to digital channels continues to progress and corporates are witnessing higher growth in these channels. Interestingly, COVID-19 after-effects and the uptake of open APIs made these solutions more affordable and attractive for smaller clients, too. And now, many small-to-medium businesses (SMBs) are pivoting to a digital-first mindset.

- More than a quarter of SMB executives said they had used e-commerce to sell their products/ services online, while another 20% say they adopted contactless payments, according to a 2020 survey.⁸

Like agile sherpas, new players lead the innovation path and challenge traditional business models

Within the payments value chain, *as-a-Service* models are gaining ground across functions – payments processing, data validation and exception handling, clearing and settlement, and reporting. *As-a-Service* providers empower retailers and ERP (enterprise resource planning) firms to handle payments – and as they become specialized in their respective verticals, traditional payments firms should brace for competitive impact.



An outcome based analytics proposition to merchants i.e. new revenue, footfalls; alters the paradigm from 'cost' to 'cost to income play.' It is important to support merchants by providing them with a solution that addresses all their technology and data needs, thereby driving profit and overall customer experience through innovative offerings."

– **Ramana Kumar**

CEO, Magnati, UAE

- Australian retailer **Woolworths** offers its Payments-as-a-Service (PaaS) platform, *Wpay*, to businesses in New Zealand and Australia. Woolworths' move challenges regional banks by providing payment processing to other companies, including retailers and hospitality operators. Woolworths is building a retail ecosystem and accelerating its growth by sharing its PaaS capabilities with supply chain (**Primary Connect**), data analytics (**Quantium**), media (**Cartology**), and third-party rewards programs.⁹



New innovators and new business models will thrive as adoption of digital payments continues to rise. The future landscape will be welcoming for companies that are open to change, innovative, and forward-thinking. Platforms such as Marqeta will continue to be critical infrastructure levers for anyone looking to augment and speed up their current capabilities. The infrastructure will allow them to cut through the complexity with faster go-to-market timelines."

– **Renata Caine**

SVP, International, Strategy and Planning, Marqeta, US

⁶ [Juniper Research](#), "B2B cross-border payments to grow by 30% to \$35 trillion by 2022, as business activity slowly rebounds," July 20, 2020.

⁷ [Juniper Research](#), "Virtual card adoption accelerates to over \$5 trillion in transaction value by 2025," June 29, 2020.

⁸ [Visa](#), "The Visa back to business study," June 2020.

⁹ [IBIS intelligence](#), "Australian e-tailer Woolworth launches Wpay payments platform," June 14, 2021.

More and more ERP firms successfully deliver accounts payable automation solutions for small and medium-sized businesses and managed treasury services for large corporations. ERP players are particularly well-positioned because they are corporate integration points with access to organizational data and internal systems.

- **Intuit** QuickBooks partnered with UK PaaS player **Modulr** to develop a new digital payment account service for small businesses. Modulr's payments infrastructure integrated within QuickBooks business accounts support everyday issues small firms face – cash-flow management, collections, and late payment follow-up.¹⁰ As part of its expansion strategy, Intuit is planning a hand-held card reader for small businesses customers.¹¹

“Due to the pandemic, the demand for digital is unprecedented, and there is a push for flexibility, agility, and speed. That is the reason why more and more payment companies are moving their infrastructure to cloud. As-a-Service stack of technology can help a firm quickly scale up and reduce time to market. We also see a strong uptake in digital adoption by small and medium businesses.”

– **Aser (Rodriguez) Blanco**
Head of Americas, Google Cloud Financial Services solutions, US

Operational and economic headwinds complicate the situation

As digital adoption revs up, increased volumes and instant processing requirements are stretching the legacy payments infrastructure. And, **74% of shoppers say they will continue to pay for goods and services with contactless cards after pandemic restrictions subside.**¹²

Account-to-account transactions enabled through open banking and instant payments services are pressure points for processing. As a result, banks realize they must maintain an appropriate payments

instrument mix (traditional and new) to meet the needs of all customer segments.

According to our 2021 World Payments Report executive survey, **45% of respondents said escalating regulatory compliance costs are their number-two operational concern right after number one, payments infrastructure maintenance.** What's more, technical approaches for data handling, sharing, and consent management are ambiguous. Not to mention post-pandemic concerns about risk on all fronts—liquidity, credit, non-compliance, and cybersecurity.

Bank payments business struggled during the pandemic as retail and corporate revenue declined. Fluctuating economic conditions affect consumers' spending capacity, while corporations and SMBs grapple with working capital and collections-related issues. Moreover, the prevailing economic uncertainty reduced corporate charges and merchant processing fees. While some sectors (health) rebounded quickly, travel, leisure, hospitality, and manufacturing struggled.

“Ensuring that payment systems stay resilient is a challenge when you have to consider the running cost, including regulation, compliance, and security, plus the migration to new technologies. A superior digital proposition, API offerings, and new data services for corporates are some of the ways banks are exploring to hedge against commoditization and improve profitability.”

– **Mark Buitenhek**
Head of Transaction Services, ING, the Netherlands

- In the United States, **Bancorp** recorded a drop in corporate payments (2021 YoY growth down 13% to USD126 million) and merchant processing fees income (down 5.6% to USD318 million).¹³
- Transaction banking revenue dipped 6% in 2020 (from ≈USD400 billion in 2019) as trade finance revenue declined 8%, according to a Global Trade Review magazine report.¹⁴

¹⁰ [Finextra](#), “Intuit Quickbooks taps Modulr to power SME digital payments account,” March 3, 2021.

¹¹ [Finextra](#), “Intuit QuickBooks treads on Square turf with small business card reader,” July 26, 2021.

¹² World Payments Report 2021 Voice of Customer survey, N=6,300.

¹³ [American Banker](#), “U.S. Bancorp bets on corporate payments rebound,” April 15, 2021.

¹⁴ [Global Trade Review](#), “Bank revenue from trade finance declining as SCF becomes money driver,” September 30, 2020.

Changing payments environment challenges traditional firms' profits

According to our survey, nearly **45% of executives say they face significant profit-draining hurdles running their payments business. Of this group, 30% said demanding operational functions (processing or acquiring) are unprofitable.**¹⁵ Declining revenues and escalating costs are a double whammy for executives already grappling with challenges.

Lower spending and declining interchange fees are sparking a drop in credit card revenue. We estimate that banks' payments income from interchange fees dropped 17% during 2020–21.¹⁶ In addition to lower interchange fees, new payments methods and BigTechs also significantly impacted revenue decline.

- Leading Australian banks – **Australia and New Zealand Banking Group (ANZ), The Commonwealth Bank of Australia, National Australia Bank, and Westpac** – took in AUD1.7 billion in revenue from payments and credit cards, according to a 2020 report from Australia-based investment bank **Macquarie Group**. However, up to 45% of this income is under threat from BNPL providers and tech giants Apple Pay and Google Pay that share revenue with banks.¹⁷
- Instant payments accounted for more than 10 billion transactions in the EU in 2020 and are expected to reach 13.5 billion by the end of 2021, amounting to roughly 10% of the overall transaction volume.¹⁸ Currently, consumers are

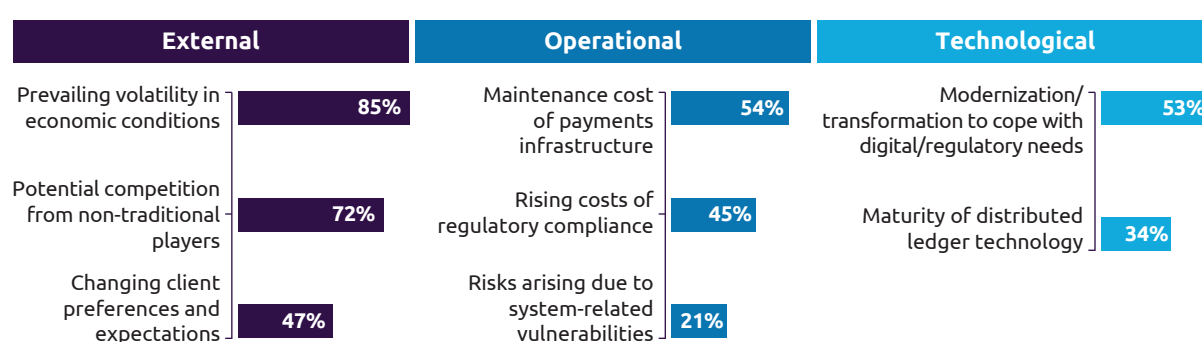
charged as much as EUR1.00 per instant payments transaction. But recently, the **European Central Bank (ECB)** suggested capping fees to use the Target Instant Payment Settlement (TIPS) at 0.20 eurocent (€0.002) per transaction for service providers.¹⁹ The move, which aims to remove the barriers to uptake of instant payments, may impact revenue from instant payments fees.

The squeeze on interest margins is forcing revenues to slip. New revenue streams become appealing as declining interest rates impact banks' net interest margin (NIM). Banks in Japan, the UK, and Europe struggle to offset NIM decline and lackluster revenues from current (checking) account fees and more. US-based Bank of America posted weakened Q2 2021 revenue as net interest income dropped 6% YoY.²⁰

Alternative rails are expanding their portfolios and impacting banks' market share. For example, Australia's **eftpos** (which started as a debit payments company) acquired the digital payments app Beem It in late 2020. As part of its digital wallet expansion strategy, eftpos began a phased launch of real-time, peer-to-peer payments and QR payment capabilities in H1 2021.²¹ In some economies, central banks and regulators are pushing domestic schemes to compete with global **Mastercard** and **Visa**.

Compliance costs on the rise: Typically, compliance costs increase after an economic crisis because regulators adopt a more protective approach to benefit financial markets and consumers.

Figure 3. Mix of external, operational, and technological factors concern payments executives



Source: Capgemini Financial Services Analysis, 2021; World Payments Report 2021 executive survey, N=164.

Question asked: What are the top factors that are impacting you the most in 2021–22?

¹⁵ World Payments Report 2021 executive survey, N=164.

¹⁶ Capgemini internal analysis performed with select samples of banks across regions.

¹⁷ [Financial Review](#), "\$1.7b of bank card revenue under pressure," January 16, 2020.

¹⁸ [Pymnts](#), "EU Banking Trade Group Presses The Issue On Instant Payments," April 19, 2021.

¹⁹ [Finextra](#), "European Central Bank castigates banks over instant payment fees," May 19, 2021.

²⁰ [CNBC](#), "Bank of America shares fall after low interest rates squeeze second-quarter revenue," July 14, 2021.

²¹ [ZD Net](#), "Eftpos launches peer-to-peer real-time payment service on Beem It," February 26, 2021.

- In 2020, financial services firms globally paid nearly USD181 billion in compliance costs, according to a Lexis Nexis report. KYC remediation, anti-money laundering measures, and transaction monitoring were the costliest. Worldwide compliance expenses grew 7% in 2019 and 2020.²²

Technology modernization initiatives impact the bottom line: About 55% of the executives we surveyed said their technology investment priorities were payments infrastructure modernization (real-time payment system implementation, API integration, ISO 20022 migration, cloud transformation). They also shared concerns about overloaded processing infrastructure that may disrupt service and affect IT budgets. This is indicative of the fact that the pace of digital transformation as part of banks' run-the-bank (RTB) initiatives has been very slow.

Fraud and cybersecurity risk is up: Due to growing e-commerce and digital payments volumes, ecosystem fraud is also increasing. Out of all fraudulent activities, the share of account takeover fraud rose from 34% in 2019 to 54% in 2020. Gross card fraud globally is expected to hit USD35 billion by 2025. Social engineering and chargeback fraud may become more prevalent in the current scenario.²³

Buckle up for Payments 4.X – An era spawned by the collision of industry disruption and COVID-19

Our 2020 World Payments Report mapped payments evolution from **Simple Pay** (transactions) to **Invisible Pay** (easy, fast, and invisible). Pandemic after-effects fueled industry transformation to a new era as payments become embedded, immersive, and out of sight. **Embedded Pay** includes payments within products/offerings to enable convenient, personalized customer experience. We call this CX-centric approach the **Payments 4.X** era.

Experience is the defining Payments 4.X feature. Customers increasingly seek seamless and frictionless experiences. This growing demand encouraged the launch of "super apps" as one-stop consumer destinations for seamless, personalized experiences. Now, more and more merchants embed online and in-store payments within the shopping experience.

Now, let's take a look at the stages that led to Payments 4.X, from Payments 1.0 to Payments 4.0.

PAYMENTS 1.0: Payments as a commodity– At this stage, payments are a non-core service and packaged into a core banking component. With everything handled in-house, payments are merely transactions to **pay** all parties involved.

PAYMENTS 2.0: Payments as a differentiator– A few payments pioneers kicked off Payments 2.0 about 15 years ago by investing in technology to enable seamless experiences. **Fast Pay** became a Payments 2.0 strategic differentiator. Firms outsourced certain functions such as processing to gain time and cost advantages. In 2005, US financial firms spent more than USD3.3 billion on outsourced payments processing.²⁴



In the future, payments will be seamless and fully automated with higher straight-through-processing speeds, which will spark a significant increase in instant payments market penetration. Offering robust pre-validations will be a significant value-add in this phase."

– Bruno Mellado

Head of International Payments and Collections, BNP Paribas, France

PAYMENTS 3.0: Payments as information– Data became king in Payments 3.0 because it facilitates **Easy Pay**. Banks began to invest in AI/machine learning, big data analytics, and data lakes. Data became an asset to improve risk analysis, make faster credit decisions, and anticipate customer needs. When PSD2/open banking came into force in early 2018, it opened a gateway for firms to leverage data and improve and personalize services.

- **BBVA's PayStats** offering provides anonymized and aggregated statistical data from millions of transactions performed with BBVA cards and any other cards used at BBVA POS terminals, creating a virtual map of consumers' habits, demographics, and origins for other companies to purchase.²⁵
- **HSBC's Get Connected** App aggregates competitor data to give users a view of all of their bank accounts in one place. The app uses open APIs to suggest where consumers can cut day-to-day costs, which also enhances CX.²⁶

²² [Banking Exchange](#), "Cost of Compliance Expected to Hit \$181bn," April 13, 2020.

²³ [Kaspersky](#), "Kaspersky research shows sharp increase of account takeover incidents in 2020," February 3, 2021.

²⁴ [Finextra](#), "US spending on payments outsourcing to hit \$4bn by 2010," May 8, 2006.

²⁵ [The Paypers](#), "Only 9 percent of major banks monetise payments data – report," July 17, 2020.

²⁶ [Finextra](#), "Open Banking and the Evolution of Digital Payments," October 5, 2018.

PAYMENTS 4.0: Payments as an ecosystem play

– At this stage, firms offer **Invisible Pay** services especially to retail customers in collaboration with FinTechs/PayTechs, third parties, and other stakeholders. Some bank services are standardized and available in white-label mode. The focus shifts from payments as a product to a tool for customer reach and engagement. BigTechs have had an edge because they build payments-related value-added services on top of their core assets (customer base, technological agility, data prowess, and deep pockets).

- **Alipay** integrated with its parent company Ant Financial's broad spectrum of financial services, such as money market investment (Yu'e Bao), insurance service (ZhongAn), credit-rating service (Sesame Credit), and personal credit line (Ant Micro Loan).²⁷
- **Facebook** users can send and receive money through Facebook Messenger once they link their account to a bank. Credit and debit cards also can be used.²⁸



Digital payments are expected to become 'invisible' where transactions are carried out as unseen as possible, and value-added services are offered for better customer experience."

– **Peter Bakenecker**

EVP – President, Mastercard,
Germany and Switzerland

PAYMENTS 4.X: Payments are embedded – As firms extensively share infrastructure and data via platforms, payments become **embedded, invisible, and an enabling function** in a collaborative environment to boost customer experience.

Payments costs go down as data digitalization empowers banks to understand and serve customers and manage risk. Creating a win-win value exchange will be critical as network effects become high-impact success factors.²⁹

- **Barclaycard Payments** extended its partnership with **SAP** in 2020 to embed its payments gateway product *Smartpay* to SAP customers across Europe.³⁰

- **Westpac's** digital Banking-as-a-Service open API platform helps embed their banking services into third-party ecosystems. BNPL player **Afterpay** (planned to be acquired by Square) was the first FinTech to leverage the bank's cloud-based platform, followed by the Australian peer-to-peer lender **SocietyOne**.³¹

New-age players primed to lead in the Payments 4.X era

Low barriers to entry encouraged payments value chain disintermediation and attracted several PayTechs that ventured into payments initiation, processing, customer due diligence, e-KYC (Know Your Client), and payment authorization.

More than 65% of bank executives who participated in our survey said they viewed non-traditional players more competitively than traditional peers. Through analysis, we observed that payments newcomers evolved in three phases. Select examples across B2C segments include **Adyen, Stripe, Square, and CheckOut.com**, and across B2B2C, **PayPal, and Wise**.

Three evolutionary phases

1. At **Inception**, each firm began with a primary payment offering, focusing on building a name and a customer base through its unique value proposition.
2. Next, during **Proliferation**, each newcomer expanded beyond payments to offer additional FS products.
3. Finally, at the **Diversification** phase, each looked beyond financial services to tap into Payments 4.X.

The new era introduced competitive advantages, including handling customer experience through network effects, tackling disintermediation with platform capabilities, and boosting profits with new revenue streams.



Leaders will combat payments commoditization by adding transaction value on an 'in-flight' and 'post transaction' basis while addressing both the 'make' and 'take' sides."

– **Nandan Mer**

Group CEO, Network International, UAE

²⁷ [Medium](#), "The Evolution of Payments & What It Means For Financial Services," July 14, 2018.

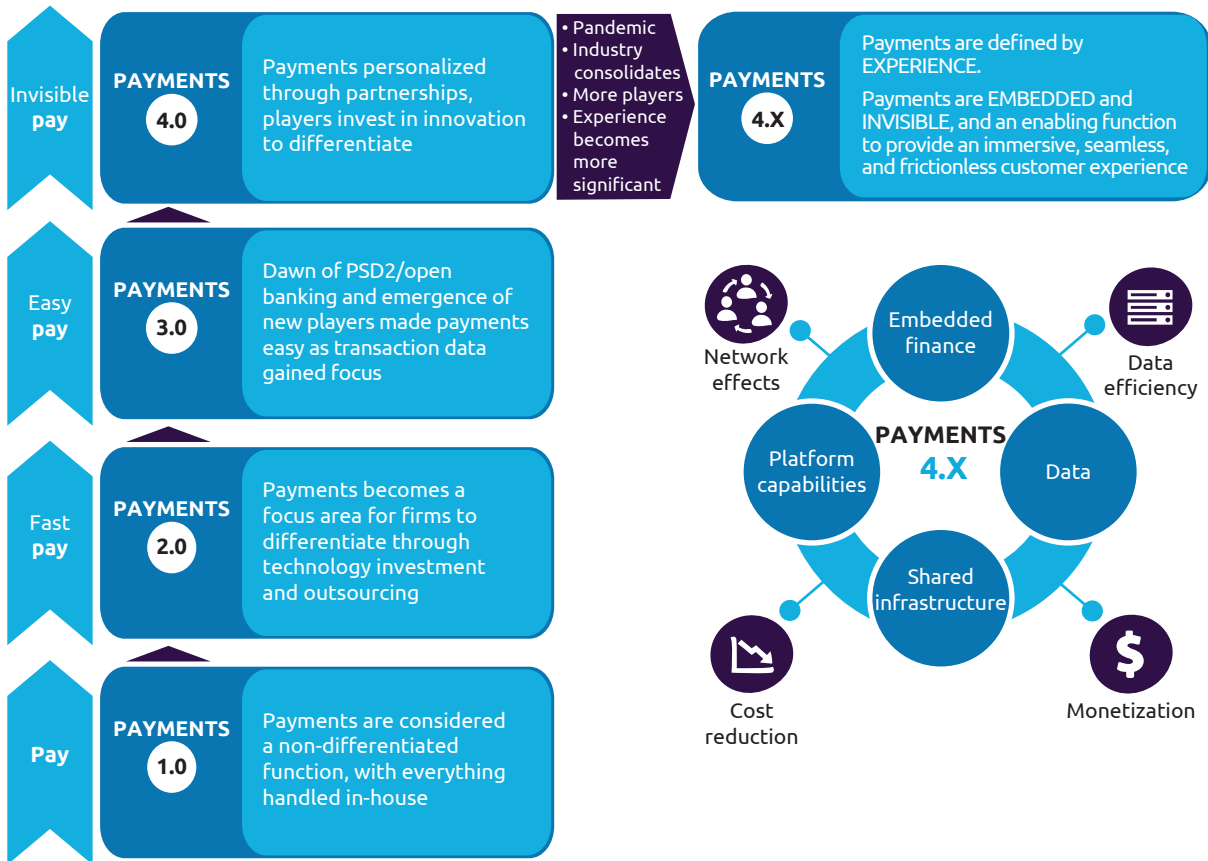
²⁸ [DataArt](#), "Nine Payment Trends Altering the Future of Payments," July 9, 2020.

²⁹ Network effects are a phenomenon through which increased numbers of people or participants improve the value of a product/service.

³⁰ [Ibid.](#)

³¹ [Finextra](#), "Westpac adds marketplace lender SocietyOne to banking-as-a-service platform," February 23, 2021.

Figure 4. Payments 4.X – Customer eXperience defines the post-pandemic era



Source: Capgemini Financial Services Analysis, 2021.

“*Embedded payments will become a lucrative business function throughout all ecosystems. Banks and credit unions may play a crucial role by expanding their offerings and seeking new markets. Companies such as Uber and Starbucks are already making financial products available directly to customers and employees. Leading FinTechs have partnered or are being acquired by FS companies to form the technological backbone for the industry and solve business challenges with data in ways not previously possible.*”

– **Mark Smith**
Worldwide business and market development
for Payments, Amazon Web Services, US

“*Proprietary payment rails – where mega-payment intermediaries set the rules and rates – are unlikely to be the future of payments. The advent of real-time, push-style, cloud-based payments is likely to make them irrelevant. Instead, the ability to assemble specialty service providers in fraud, AML, KYC, and value repositories to build full-service FI firms will gain popularity.*”

– **Scott Lohman**
Industry Go-To-Market Director (Payments),
Salesforce, US

New-age leader capitalizes on payments space opportunities to scale far beyond

Founded in 2009, Irish-American financial services firm **Stripe** has expanded its platform beyond payments processing to handle complex marketplace transactions, facilitate online commerce through complementary services, and expand its internet businesses globally. With payments processing as its core, Stripe added Treasury, issuance, billing, and digital ID verification throughout the past decade.

Early in 2012, Stripe introduced Stripe *Connect* to allow businesses and individual online marketplace sellers to collect payments seamlessly.³² Stripe Connect now powers many commerce-enabled platforms such as Lightspeed, Shopify, and Wix, and marketplaces including Deliveroo, Doordash, and Instacart. Payments processing requires confirming a buyer's identity, and the task is particularly challenging online. In 2016, Stripe introduced *Radar*, which features ML-based fraud prevention tools that integrate into the payments flow and flag potentially illegal transactions as it ingests data from data across millions of global companies.³³

The firm launched *Billing*, an end-to-end billing and subscription management platform focused on the high-growth subscription e-commerce market, in 2018.³⁴ Then, Stripe expanded its initial payments product to physical transactions with Stripe *Terminal*, enabling customers to build an in-person checkout to accept physical-world payments.³⁵

As the company grew its role in enabling marketplaces and platforms with Connect and Billing, the next step was virtual card issuance. Stripe *Issuing* enables corporations to create and issue virtual cards using Stripe's API.³⁶ Next, Stripe launched *Treasury* to enable clients – including e-commerce giant Shopify – to provide Banking-as-a-Service to customers.³⁷ By the end of 2019, it was processing hundreds of billions of dollars a year for millions of businesses worldwide, and it counted heavyweights, including Amazon, among its customers.³⁸ Rising ID theft fueled the recent launch of Stripe *Identity* to bolster online trust and allow online businesses to verify user identities securely. These sophisticated payments optimizations are helping maximize revenue and minimize cost for Amazon, Salesforce, Atlassian, Florida Blue, NASDAQ, British Council, Maersk, and Hargreaves Lansdown – deepening Stripe's relationship with enterprises that leverage multiple products. Stripe is approaching the future strategically with an eye on global expansion into Asia, Africa, and Latin America, where internet economies are growing quickly.³⁹ The pace that Stripe is adapting to new needs and market opportunities is very impressive. The firm is highly responsive and targets profitable areas, emerging as strong competition to banks.



Integration across payment services will become table stakes, especially as businesses want easier ways to facilitate all stages of commerce in today's global marketplace. With this in mind, Stripe's products include automated tax calculation (Stripe Tax), fraud detection (Stripe Radar), payment collection (Stripe Invoicing), and much more. These connected adjacencies are proving valuable to merchants and teams by helping generate more revenue, minimizing fraud, and more deeply supporting customer needs."

– Mike Clayville

Chief Revenue Officer, Stripe, US

³² [Stripe](#), "Blog- Stripe connect," October 10, 2012.

³³ [Stripe](#), "Introducing Stripe Radar 2.0, including Radar for Fraud Teams, with new tools for large businesses," April 18, 2018.

³⁴ [Stripe](#), "Stripe launches Stripe Billing to accelerate boom in subscription-based businesses," April 5, 2018.

³⁵ [Stripe](#), "Stripe announces Stripe Terminal, a programmable point of sale for in-person payments," September 17, 2018.

³⁶ [Stripe](#), "Stripe launches Stripe Issuing to help businesses create their own credit and debit cards," July 26, 2018.

³⁷ [Stripe](#), "Stripe launches Stripe Treasury in major expansion of financial services offering for platform partners," December 3, 2020.

³⁸ [The Wall Street Journal](#), "How Payment Processor Stripe Became Silicon Valley's Hottest Startup," April 13, 2021.

³⁹ [CB Insights](#), "Stripe Teardown: How The \$36B Payments Company Is Supercharging Online Retail," February 25, 2021.

Mindful of the challenges, banks take steps to improve profitability

Banks are taking steps to ensure Payments 4.X era profitability. As part of our World Payments Report 2021 executive survey, we asked participants about their profitability plans. Initiatives covered business strategy, operating models, and technology considerations.



As part of our re-entry into digital payments acceptance, Deutsche Bank partnered with Fiserv to offer new services to our 800,000 small-business customers in Germany and non-bank clients. Digital payments acceptance is essential for us to harmonize global offers and build client intimacy.”

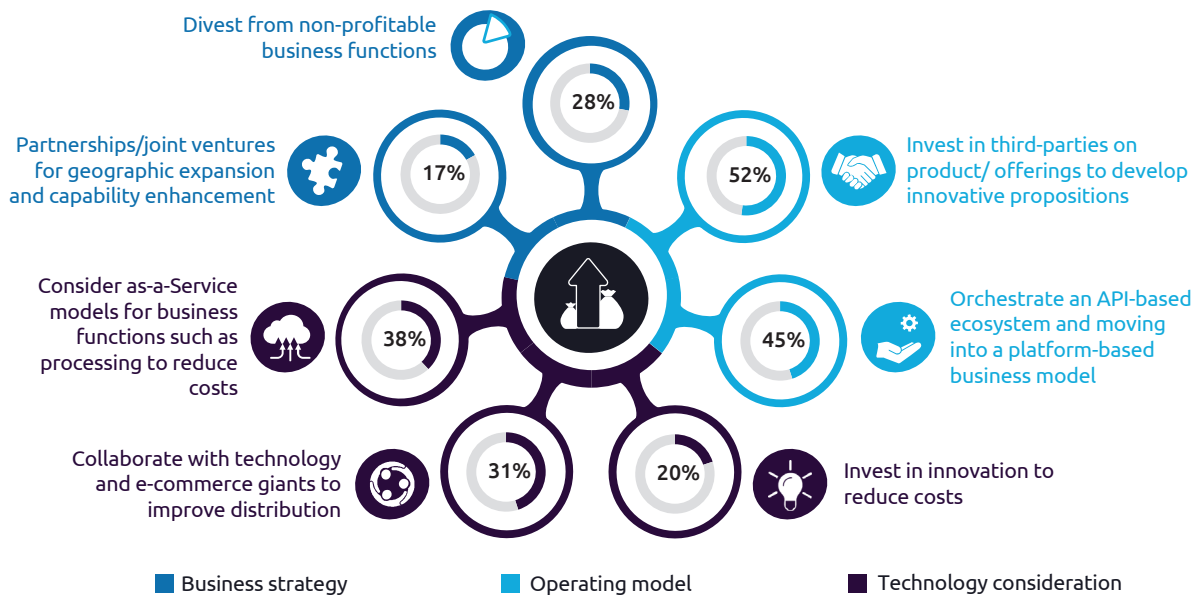
– Kilian Thalhammer

Managing Director, Head of Merchant Solutions, Deutsche Bank, Germany

Most respondents opted for operating model measures such as **investing in third parties to develop innovative propositions (52%)**, **orchestrating an API-based ecosystem, and moving into a platform-based business model (45%)**.

- Australian financial services provider **CBA** acquired HealthTech **Whitecoat** to offer end-to-end digital payments, claiming, and directory solutions to the healthcare industry. The solution aims to increase efficiency through streamlined back-office administration, practice management software integrations, payment reconciliations, real-time reporting, and processing Medicare, private health insurance, and government schemes.⁴⁰
- Similarly, the Netherlands’ **ING** built a global front-end insurance platform that provides customers with an end-to-end, digital experience plugged into ING business units by connecting with French multinational insurance firm **AXA** via APIs. ING may open the platform to other providers to offer additional connected services.⁴¹

Figure 5. How banks plan to boost payments profitability (by %)



Source: Capgemini Financial Services Analysis, 2021; World Payments Report 2021 executive survey, N=164

Question asked: What are the measures that you plan to take to improve profitability?

⁴⁰ [CBA](#), “CBA strengthens digital healthcare capabilities with Whitecoat acquisition,” May 4, 2021.

⁴¹ [ING](#), “Insurance, done direct!,” July 16, 2020.

As a technology-related option, executives told us they were considering initiatives, including as-a-Service models, collaboration with technology and e-commerce giants to improve distribution, and investing in innovation to reduce costs.

- **Lloyds Banking Group** entered a strategic partnership with UK FinTech **Form3** to develop a cloud-native Payments-as-a-Service (PaaS) platform.⁴²
- **JP Morgan, DBS, and Temasek holdings** launched *Partior*, a blockchain-based platform to reduce current frictions and latency in cross-border payments, trade transactions, and foreign exchange settlements.⁴³



To integrate into the new market dynamics, the payment providers are required to reassess/reinvent their business model, leverage data, and redefine operating models for flexibility, and technology-driven innovation that responds to the market.”

– **Samer Soliman**

Chief Executive Officer, Arab Financial Services, Bahrain

Business strategy measures emerged as a third profitability option. **Nearly 28% of executives said they might consider divesting from non-profitable business functions**, as they are unable to improve profitability of their payments businesses on their own. However, such a move could be considered as an option before exiting the market.

- **ANZ bank** sold the controlling stake (51%) in its acquiring business to Worldline for USD365 million. The joint venture aims to improve cross- and up-sell opportunities via digital onboarding, alternative payment methods (APMs), fraud detection, online and omnichannel capabilities while leveraging the **Worldline's** existing merchant portfolio.⁴⁴

About 17% of payments executives told us they might consider launching specialized business arms to gain agility and market focus.

UAE-based **First Abu Dhabi Bank** spun off payments business **Magnati** to handle four business lines: acquiring, government solutions, consumer payments, and captive issuer processing.⁴⁵

Further, banks collaborate around technology and operational resources to build shared infrastructures to stem competition and safeguard their domain. Initiatives such as the **European Payments Initiative (EPI)** and **P27** exemplify the partnership trend. Industry collaboration is growing in anti-money laundering detection, know your client (KYC), and cybersecurity.

- Transaction monitoring Netherlands (TMNL) is an initiative founded by **ING, ABN AMRO, Rabobank, Triodos Bank, and de Volksbank**. TMNL will work closely with Dutch financial regulators and law enforcement agencies to curb money laundering.⁴⁶



Payments infrastructure consolidation, along the lines of business or players will continue to evolve. It serves as a constructive model to reduce existing barriers while unlocking opportunities for the industry and users.”

– **Mehdi Manaa**

CEO, BUNA Payment platform, UAE



Today's market consolidation, evolving business models, and growing payment instrument costs are pushing the industry to reinvent itself – shifting from legacy to build on digital, monetize data, leverage real-time infrastructure, and enhance trust.”

– **Sylvie Calsacy**

Head Public and Regulatory Affairs, Worldline, France

⁴² [Retail Banker International](#), “Lloyds taps payments fintech Form3 to deliver digital transformation,” July 22, 2020.

⁴³ [JP Morgan](#), “DBS, J.P. Morgan and Temasek to establish platform to transform interbank value movements in a new digital era,” April 28, 2021.

⁴⁴ [Worldline](#), “Worldline Announces a Major Strategic Commercial Acquiring Alliance with ANZ Bank in Australia,” December 14, 2020.

⁴⁵ [Magnati](#), accessed July 2021.

⁴⁶ [Ropes & Grey](#), “Transaction Monitoring Netherlands: A novel solution to the banking industry's AML puzzle?,” December 16, 2020.

API monetization and data maturity are Payments 4.X journey mileposts that require action

Banks have still not unleashed the fullest potential from ecosystem-based models, as they still make the most money from transaction-based APIs. The fees/charge is payable upon completion of a payment transaction. **While 40% of surveyed banks have been monetizing transaction-based APIs for a long time, other categories of APIs such as co-branding and white labeling are low at 10% and 25%, respectively.**



An API monetization challenge includes awareness and discoverability. If you can't find something, you can't use it! And once an API is discovered, governance may not be well established, and access poorly metered."

– Bruno Baloi

Director, Platform Solutions, MuleSoft, Canada

Data exchange APIs are monetized based on per-call/per-request charges (e.g., details of a potential prospect looking for card approval rates/pre-approvals.) These are discouragingly low, with only 20% of banks saying they have monetized data exchange APIs for a measurable period and revenue impact is still minimal.

Creating value from data is essential to survive. **But, only 18% of firms say they consider data an asset to be shared with third parties for value exchange.** Data monetization is hampered by perceptions that compliance may be a hindrance, talent/resources to harness data are scarce, and subject matter expertise is not readily available.

It is essential to leverage data and consider it as an asset class. The recent announcements from two firms are reflective of this trend.

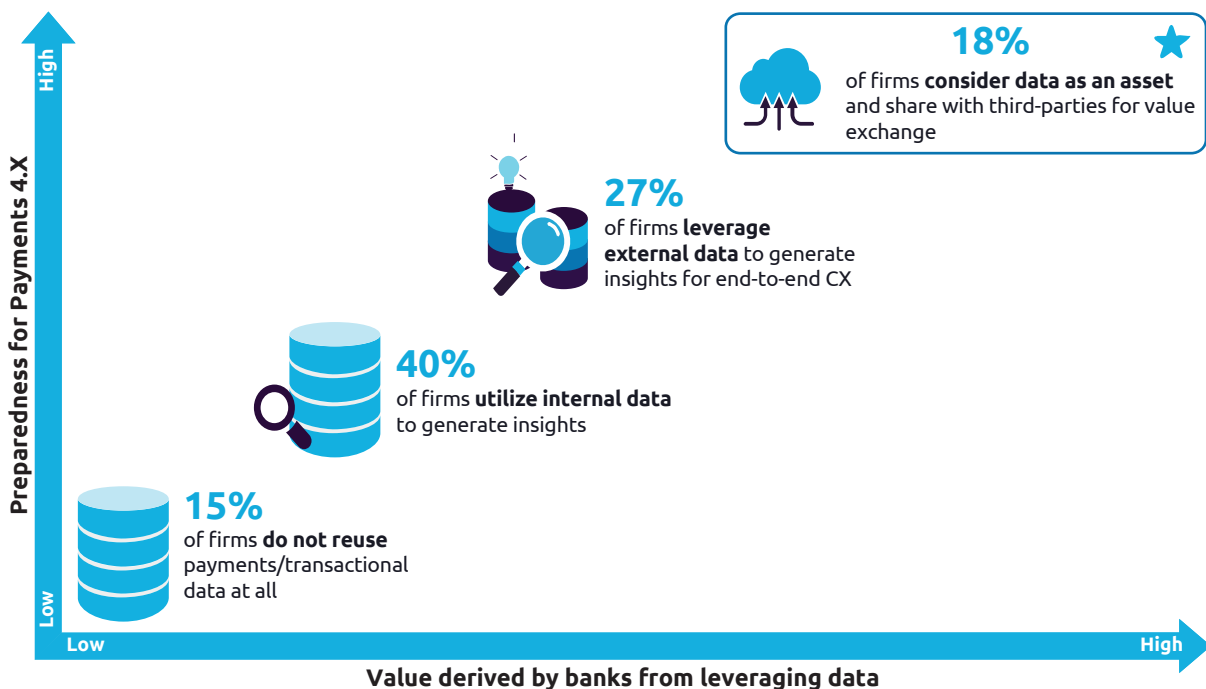


We are entering an era of an explosion in data in payments. Players who truly harness the value of that data for customer good will win."

– Shane Conway

Executive, Transaction Banking & Enterprise Payments, National Australia Bank, Australia

Figure 6. Firms' maturity in using data as an asset (by %)



Source: Capgemini Financial Services Analysis, 2021; World Payments Report 2021 executive survey, N=164.

Question asked: Please select the option with regards to re-using transactional data and generating insights.

“ We have heavily leveraged data to generate leads for payments business and identifying cross-selling avenues as well. We have also created an in-house initiative to share leads with our sales team. Almost 80% of them generate follow-up activity, thus increasing our footprint in the payments business. We leverage data to get a 360-degree view of the customer that helps us offer a solution rather than a product.”

– **Alain Schmid**
Head of Business Banking, Credit Suisse, Switzerland

Visa announced its plan to acquire Tink for USD1.8 billion to tap Tink’s data from 3,400 banks and FIs.⁴⁷ This move would give Visa a foothold in open banking by connecting consumers to multiple FIs. In another instance, the European payments processor Worldline launched Data-as-a-Service (DaaS) for online payments. By leveraging the platform, Worldline customers can act in real time, investigate datapoints individually (such as separate transactions or disputes), take control of data and identify, and resolve conversion, chargebacks, or fraud-related issues much faster.⁴⁸

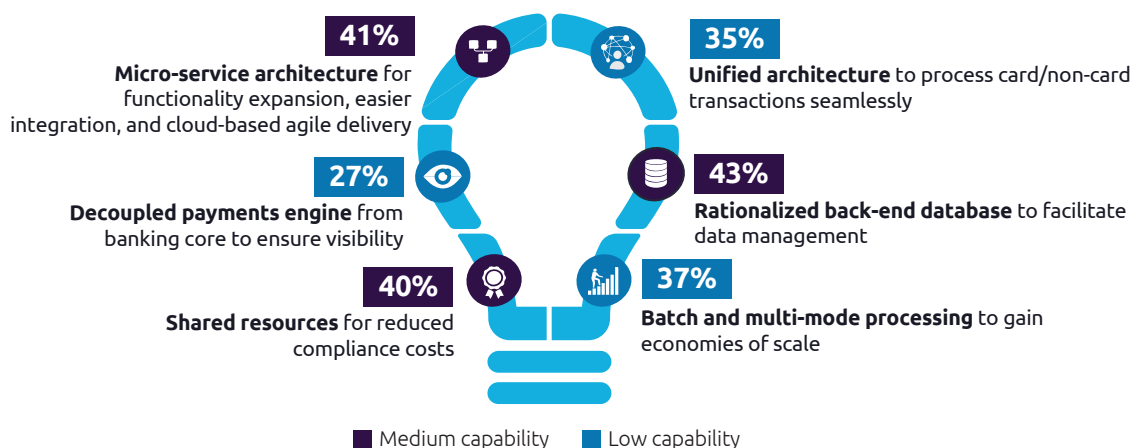
New-age processing requires infrastructure revamp

Banking infrastructure generally falls short of capabilities necessary to handle rising digital payment volumes performed on various instruments/methods, across geographies and time zones, and with always-on availability. Some banks have invested in infrastructure modernization and have reaped benefits from microservices architecture, a rationalized back-end database, and shared resources to reduce compliance costs. Yet, there is work to do. Requisite functionalities such as unified architecture to process all card/non-card transactions, multi-mode processing, and decoupled payments engines are at glaringly low levels, <40%.⁴⁹

Implementing PaaS has benefits such as avoiding capital expenses, flexibility to add new functions, payment schemes, clearing access, and the ability to launch new products faster. In addition, PaaS services may include add-on value-added services such as standardization controls and fraud screening.

- **Natixis Payments** recently launched *Xpollens*, a white label *Payments in a Box* offering for FinTechs, corporates, and retailers. The PaaS platform offers a complete set of payment solutions and services that can be white labeled in any business activity and adapted to clients’ existing tools and interfaces.⁵⁰

Figure 7. How capable are firms around core payments processing platforms? (by %)



Source: Capgemini Financial Services Analysis, 2021; World Payments Report 2021 executive survey, N=164. Question asked: Please rate the degree of capability of your current core payments processing platforms.

⁴⁷ Tink, “Visa signs agreement to acquire Tink,” June 24, 2021.

⁴⁸ Worldline, “Worldline launches data as a service platform for online payments,” January 12, 2021.

⁴⁹ World Payments Report 2021 executive survey, N=164.

⁵⁰ XPollens.com, accessed July 2021.



Straight-through processing and cost reduction are significant PaaS adoption drivers. Successful PaaS depends on the technology platform its as-a-Service offering is delivered on, especially the range of self-service features added into it. We can seamlessly include value-added services, such as sanctions screening, fraud monitoring, and real-time analytics. Another major PaaS added value is the ability to choose from an extensive catalog of banking services efficiently integrated into the platform and available to cover gaps in account servicing, cash/liquidity management, and treasury services.”

– **Mick Fennell**

Business Line Director, Payments, Temenos, UK

Given the different capability levels of firms, there is no “silver bullet” solution. There is a growing appetite to implement payment hubs because they facilitate payment instrument convergence, network connectivity, personalization options, and greater customization and control for banks with higher processing and geographic reach needs.

Customized end-to-end payment hub solutions move banks toward building a centralized payment factory for creating and executing payments by combined optimal automation and human intervention to enhance processing. In addition to payment localization, custom-build payment hubs also address the complexity of settlement and reconciliation. As a result, customized payment hubs are more akin to digital payments ecosystems: service-focused, cloud-based, highly configurable, API-centric, and easier to upgrade to keep up with compliance.

Leveraging core competencies can help firms score quick monetization wins as they identify niche markets for a Payments 4.X first-mover advantage

Data can potentially turn entire payments business processes into discrete consumable entities covering use cases across retail and corporate payments. Payments data can be transformed into a profitable portfolio of value-added commercial services/features



ANZ is focused on platforms and ecosystems to deliver new services to our customers, leverage scale, and drive growth. Our payments platform forms the basis for serving our existing customers and enriching these services with data and other capabilities, such as compliance. Our architecture allows other financial institutions to reuse this platform, driving economies of scale at the same time. For example, we offer the New Payments Platform (NPP) as PaaS for 11 Australian regional and foreign banks.”

– **Peter Reynolds**

CIO, Corporate Services & Global Payments, ANZ, Australia

to increase data monetization avenues. In the short term, banks can monetize their current offerings through overhauling technology and specializing services.

- **Société Générale** partnered with treasury software specialist **Kyriba** to create a cloud-based payment automation solution to streamline corporate clients’ daily treasury management.⁵¹



As the payment ecosystem expands, banks must foster symbiotic relationships with market players. Opportunities around co-creation, co-innovation and value creation are enormous. But finding the sweet spot matters most. When non-banks develop value-added payment capabilities, incumbents should focus on expediting innovation, shortening development timeframes, and connecting the dots. It can be through co-creation, due diligence support, regulatory assistance, financial crime prevention, and helping to remove payment friction.”

– **Philip Panaino**

Global Head, Cash Management, Standard Chartered Bank, South Africa

⁵¹ [Finextra](#), “SocGen and Kyriba co-develop cloud-based treasury management system,” June 14, 2021.

In the medium term, banks can augment technology capabilities to enhance and commoditize offerings.

- **JP Morgan** developed a blockchain-based wholesale payments settlement network that lets banks and firms conduct cross-border B2B transactions.⁵²
- US banks are integrating the open APIs of shared data access network **Akoya** to give select FinTechs and data aggregators permission-based access to customer data.⁵³

In the long term, investments in innovation and technology for value-added services will offer competitive advantages.

Decouple the payments engine from the banking core to improve profitability

Shrink the core and modernize the surroundings will be the basis of tomorrow’s payments architecture. Decoupling the payments engine from the banking core will help monetize the payments platform. Firms’ payments core offerings will include native technology stack and integration modules, API stack, and cloud-based distributed data.

Firms can integrate a portfolio of services with a payments engine, including PaaS, cloud (shared utility),

shared infrastructure (payments processing), third-party offerings, consent management, and digital identity databases, and other shareable registries. These services can speak to the core via API calls.

Together, the core and a services portfolio will help enable tailor-made sector-specific client solutions. And, depending on respective sector volumes, this is where processing capabilities come into play.

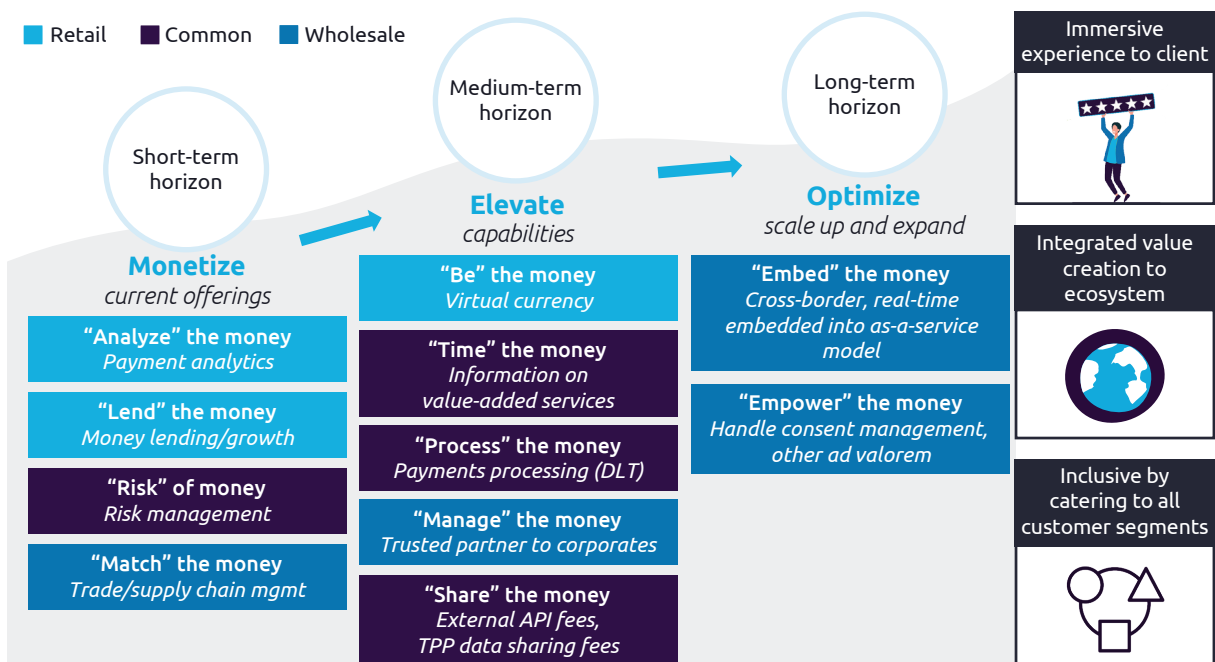
Client data can be stored, retrieved, and monetized. As a result, firms that build an ecosystem based on a platform with many providers and users are likely to achieve success, mainly because such platforms also deliver data for strategizing future business models.

Value-added services help us strengthen our business-client relationships. Improving revenue generation through value-added services can simultaneously help our customers and improve our profitability.”

– **Wouter Bartels**

Tribe Lead Payments, Acquiring and Open Banking, ABN AMRO, the Netherlands

Figure 8. Where is the money?



Source: Capgemini Financial Services Analysis, 2021.

⁵² [JP Morgan](#), accessed July 2021.

⁵³ [Akoya website](#), accessed July 2021.

Saudi bank digitally transforms through payments hub implementation

Riyadh-based **Saudi British Bank (SABB)** is a Saudi joint-stock company and an associate of HSBC Holdings. It offers personal, commercial, investment, institutional, and Islamic banking products and services. SABB is one of the largest banks in the Kingdom, with 1.54 million retail customers and a 114-branch network.

BUSINESS CHALLENGE AND OBJECTIVE: SABB sought to tap into Saudi Arabia's accelerating digital payments growth after the Kingdom launched an instant payments scheme (IPS) Sarie in February 2021. The bank's goal was to capitalize on digital payments capabilities enabled through the new IPS infrastructure while simultaneously addressing the bank's monolithic legacy payments core. The initiative was particularly complex because it would happen as HSBC Saudi Arabia agreed to transfer its asset management, retail brokerage, and retail margin lending businesses to Alawwal Invest, a SABB unit.⁵⁴

STRATEGY: SABB implemented front-end upgrades to enable digital payments through a hybrid-agile approach and a defined Target Operating Model (TOM) to align the bank's business vision with operational capacity and strategic objectives. The plan included a scalable Payments Hub with a last-mile connectivity gateway to accommodate the Kingdom's expected exponential digital payments growth.

SOLUTION: Capgemini led end-to-end product selection, TOM definition, customer journey alignment, instant payments product roadmap, target architecture, and implementation of Volante Technology's VolPay cloud-native product.

BENEFITS: SABB's transformation journey included industrialization levers such as workbench requirements and an interface matrix to measure quantifiable benefits throughout implementation. The real-time-process (RTP) workbench covered 40% of the conditions a mature payments engine needs, which helped to optimize development time. The integration framework enabled the team to quickly integrate the Payments Hub with the surrounding system and allow record-time completion.

While fast and efficient solution implementation was crucial, scalability to new payment schemes and rails are also important. The project's reusable test cases will be able to accommodate new payment schemes in the future. And, now SABB is free to focus on customer experience and value-added services. Thanks to its new Payments Hub, SABB can leverage revenue streams such as alias-based payment collection (a temporary or virtual unique identifier used for a limited period or changed every time) and expand its on-us payment capability. SABB's technological milestone brings the bank closer to customers and positions it to maximize FinTech partnerships.⁵⁵

Banks enjoy competitive advantages compared with tech giants, PayTechs, and digital banks. Incumbents have earned the trust of their direct customers and enjoy extended reach across markets. Additionally, they draw strength from customer data, the capital structure that provides financial backing, and

regulatory oversight that complements responsible investing and social ethos. However, time is of the essence. Competitive advantages may not last for too long. Bank transformation requires a disciplined and strategic response to tap the burgeoning Payments 4.X market potential.

⁵⁴ [Arab News](#), "HSBC Saudi Arabia to transfer three units to SABB-owned Alawwal Invest," May 18, 2021.

⁵⁵ [Zawya](#), "SABB partners with Saudi Fintech Geidea to launch Tap on Phone," March 28, 2021.

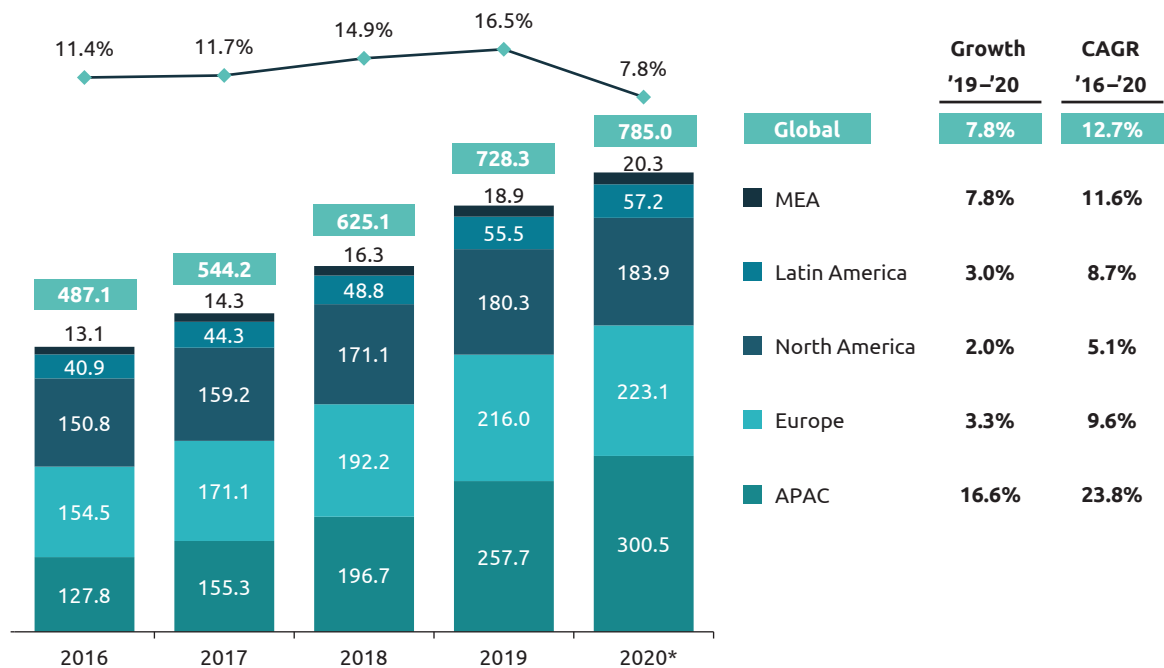
NEW CUSTOMER HABITS AND PAYMENT METHODS SPARK PAYMENTS 4.X

After eight years of double-digit growth, global non-cash transaction volumes increased merely 8% in 2020

The unrelenting double-digit volume growth within the global non-cash payments industry came to a screeching halt in 2020, succumbing to COVID-19 lockdowns, stifled business activity, and reduced spending. The pandemic upended nearly every aspect of life, and consumer spending was no exception. Globally, governments and central banks distributed USD15 trillion in economic stimulus packages by May 2020, but relief plans failed to boost spending and, instead, spurred savings and debt payments.⁵⁶

Consumers, spooked by speculative market conditions and employment uncertainty, kept their wallets shut. As a result, private consumer expenditure (PCE) in the EU declined by 4.1% in Q1 2020 compared to Q4 2019. The downward slide continued in Q2 2020 at 12%. As pandemic constraints abated during the warmer months, Luxembourg, Ireland, Malta, Slovenia, and Spain recorded a 20% quarter-on-quarter increase. Despite significant Q3 2020 increases, spending in almost all countries nevertheless remained below the pre-crisis level.⁵⁷ In emerging market India, subsequent pandemic waves prevailed, and business activity fell nearly 25%.⁵⁸

Figure 9. Worldwide non-cash transactions volume (billions), and YoY growth (%), 2016–2020



Note: *Non-cash transactions data for 2020 is sourced from the countries' central banks. In case of data unavailability, forecasted figures are used.

Sources: Capgemini Financial Services Analysis, 2021; ECB Statistical Data Warehouse, BIS Statistics Explorer, countries' central bank annual reports.

⁵⁶ Reuters, "\$15 trillion and counting: global stimulus so far," May 11, 2020.

⁵⁷ Destatis, "COVID-19 leads to a decline in private consumption expenditure in 2020," accessed August 10, 2021.

⁵⁸ Times of India, "Lockdowns pull down business activity to 76% of pre-pandemic level; unlikely to impact GDP: Report," April 27, 2021.

Conversely, customers saved a whopping USD5.4 trillion during 2020.⁵⁹ North America and Europe – where lockdowns and government support had a significant impact – topped the consumer savings list.⁶⁰

Global non-cash transaction growth decelerated to 7.8% in 2020 (close to the 8.1% we predicted last year), down from 16.5% in 2019. Advanced economies will continue to be affected as GDP levels are expected to remain ~3% to 4% below their pre-virus trend paths until 2025. A year of growth is needed to tread the recovery path.

Rising customer adoption, new payments methods, and increased spending foreshadow five-year growth

Despite COVID-19 continuing to cast shadows, 2021 appears poised for a rebound. After a 3.5% contraction in 2020, global GDP is projected to rise – 5.6% in 2021 and 4.3% in 2022 – before settling in to a 3.0% 2023–25 growth pace, primarily driven by robust recoveries in matured economies.⁶¹ Consumers are

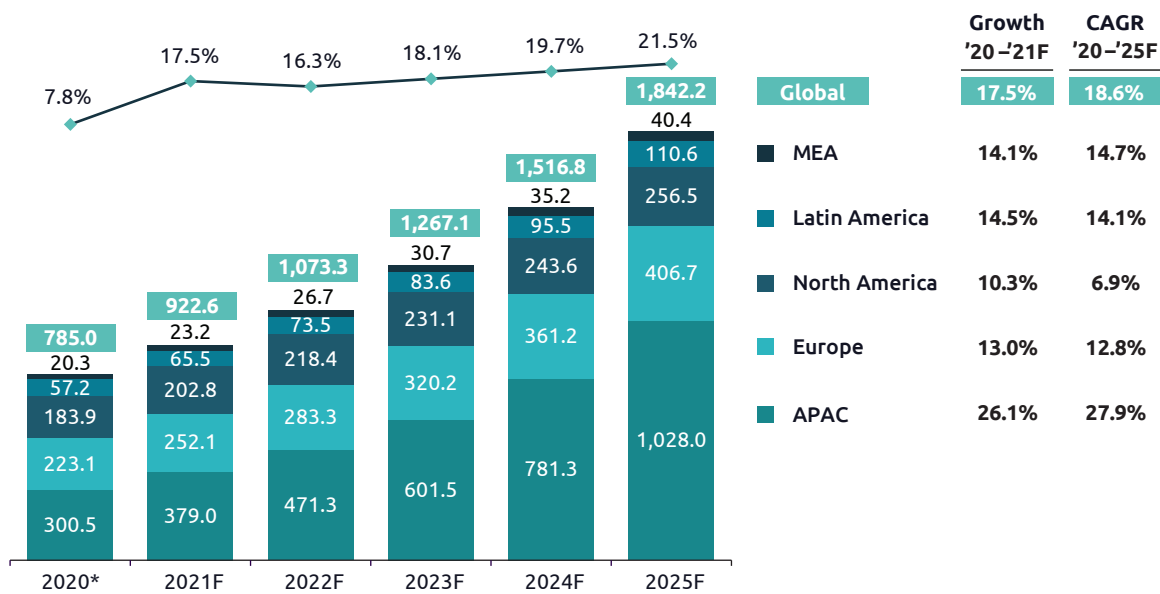
expected to spend nearly a third of their 2020–21 savings as vaccinations advance, markets ease restrictions, planes and hotels begin to see tourists and business travelers again, and shopper confidence builds.⁶² The result may be a global spending boom focused on services, travel, and leisure.⁶³

An unprecedented need for faster payments, business-to-business (B2B) e-commerce, and cross-border transactions is fueling modernization initiatives and is on track to accelerate B2B payments.

We anticipate global non-cash transactions to reach 1.8 trillion by 2025, led by APAC transaction volumes. Non-cash transactions are set to grow worldwide at pre-pandemic levels by 2021 and beyond, sparked by the spending boom and rapid adoption of digital payments. The 1 trillion transaction landmark may be reached by 2022, beating our 2020 estimates by a year.

Global non-cash transactions are poised to grow at 18.6% CAGR (2020–2025F) and are projected to reach 1.8 trillion in volume by the end of the forecast period.

Figure 10. Worldwide non-cash transactions volume (billions), and YoY growth (%), 2020–2025F



Note: *Non-cash transactions data for 2020 is sourced from the countries' central banks. In case of data unavailability, forecasted figures are used.

Sources: Capgemini Financial Services Analysis, 2021; ECB Statistical Data Warehouse, BIS Statistics Explorer, countries' central bank annual reports. Figures are forecasted for 2021 and beyond.

⁵⁹ Pymnts, "Global Consumer Saving Stockpile Reaches \$5.4 Trillion," April 18, 2021.

⁶⁰ CNN, "Consumers have \$5.4 trillion in excess savings. That could unleash a global spending boom," April 19, 2021.

⁶¹ World Bank, "The World Bank Global Economic Prospects," June 8, 2021.

⁶² Moody's analytics, "Hot Start for High-Yield," April 22, 2021.

⁶³ Yahoo Finance, "With an Extra \$5.4 Trillion in Savings, Are Global Consumers Primed for a Massive Spending Boom?," April 20, 2021

The burgeoning e-commerce segment (~20% CAGR, 2020–25), mobile payments (~30% CAGR, 2020–27), and digital wallets (~15% CAGR, 2020–26) will be pivotal drivers of non-cash payment volumes.^{64, 65, 66}

APAC is on track to represent more than half of global non-cash transactions by 2025, with a noteworthy 28% CAGR from 2020–25. The fact that 46% of APAC's online population regularly uses digital wallets is likely to drive digital payments growth.⁶⁷ APAC is a frontrunner in the race to a cashless world. In 2020, the region accounted for 45% of total globally registered mobile money accounts – the highest among all markets.⁶⁸

This trend is set to grow as more initiatives encourage mobile payments across the region. PayNow in Singapore, Faster Payment System (FPS) in Hong Kong, PromptPay in Thailand, and New Payments Platform (NPP) in Australia have made instantaneous fund transfers between individuals and merchants possible.

In Europe, we project mobile payments and cross-border e-commerce to ramp up and drive the region beyond 400 billion transactions in 2025 at a CAGR of 13% (2020–25F). More than half a billion Europeans say they will shop online in 2021, where cross-border represents 25.5% of the total.^{69, 70}

North America is predicted to stabilize non-cash payments volumes due to plateaued card transaction growth and slow mobile payments adoption.

In the Middle East and Africa (MEA), e-commerce and digital payments are bound for significant growth in 2021 and beyond. Nearly 75% of MEA consumers say they shop online more since the pandemic, and 95% are considering the use of emerging payment instruments such as wearables, biometrics, and digital wallets.⁷¹

Latin America is one of the fastest-growing mobile markets globally. However, nearly 70% of its population is underbanked, which means the environment is favorable for mobile payments growth.⁷² Flourishing FinTech and challenger bank ecosystems play a vital role in driving LATAM digital payment adoption, especially among the young and tech-savvy, to close the region's financial inclusion gap.⁷³



During the pandemic, companies offering online payments experienced accelerated business and growth. The massive switch of customers to e-commerce – both domestic and cross-border – will drive the rapid upswing."

– Philippe Gelis

CEO and Co-founder, Kantox, UK

⁶⁴ [Euromonitor](#), "Global E-Commerce Market To Expand By \$1 Trillion By 2025," April 19, 2021.

⁶⁵ [Fortune Business Insights](#), "The Global Mobile Payment Market Size, Share and Industry Analysis," August 27, 2020.

⁶⁶ [Juniper Research](#), "Digital wallet spend to exceed \$10 trillion globally in 2025," January 25, 2020.

⁶⁷ [Techwire Asia](#), "Almost half of Asia Pacific prefers digital payments," February 11, 2021.

⁶⁸ [GSMA State of the Industry Report on Mobile Money 2021](#), accessed August 2021.

⁶⁹ [Internet Retailing](#), "European eCommerce revenues jump 30% to US\$465bn in 2021," accessed July 2021.

⁷⁰ [E-Commerce News Europe](#), "25.5% of ecommerce in Europe is cross-border," March 31, 2021.

⁷¹ [Mastercard](#), "73% of Consumers in Middle East and Africa are Shopping More Online Since the Start of Pandemic, Reveals Mastercard Study," November 24, 2020.

⁷² [Rapyd](#), "6 Emerging Trends in eCommerce and Fintech Across Latin America," June 21, 2021.

⁷³ [Finance Magnates](#), "How Latin America is Fast Becoming the Capital of FinTech," January 4, 2021.

With B2B payments poised to take off, payments automation is a must

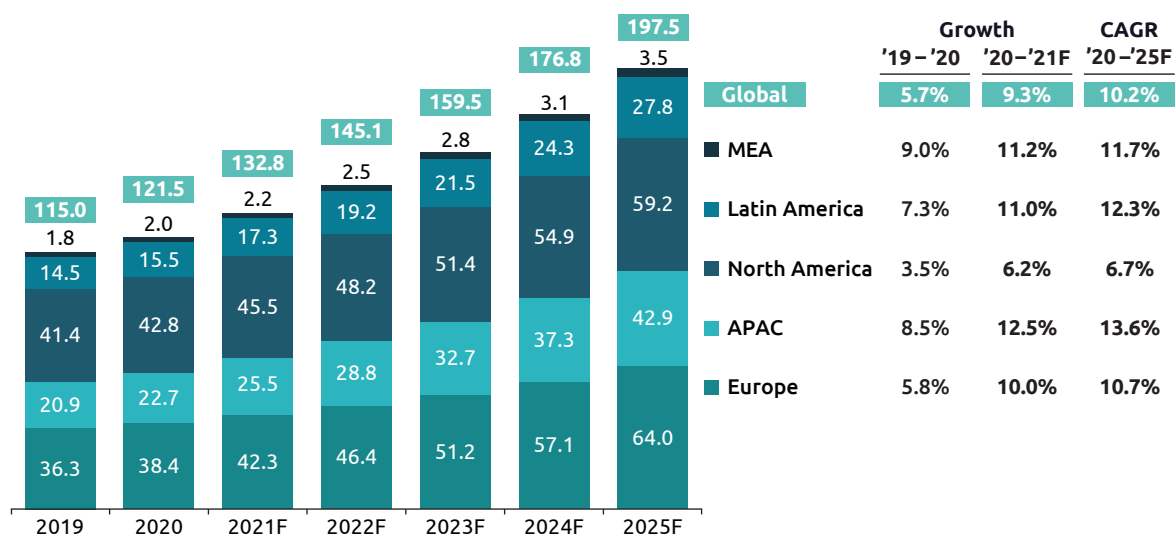
According to our estimates, global B2B non-cash transactions will increase at a 10.2% CAGR during 2020–25F to reach nearly 200 billion transactions by 2025. While in some regions, such as the United States, B2B payments are often paper-based, but digital payments are progressing as more businesses go digital.

For Europe – the largest B2B payments market (by volume) – rapid migration to ISO 20022 for traditional payments infrastructures (Target, EBA, and SEPA) will be critical for continued growth.^{74, 75} Moreover, ISO 20022 adoption will introduce cross-border interoperability and payment standardization to boost operational efficiency.⁷⁶

Paper and offline-based transaction methods remain prevalent in North America leading to slow adoption of non-cash B2B payments. Electronic invoicing and digital payments penetration are limited, and in the US, nearly 60% of B2B payments are still made with paper checks, generating process inefficiencies and high overhead costs.⁷⁷

In APAC and Latin America, micro, small, and medium-sized enterprises (MSMEs) account for more than 90% of businesses.^{78, 79} MSMEs offer enormous potential for digital B2B payments to make inroads and drive transactions volume in these regions, as most currently rely on legacy paper-based payments. Electronic invoicing and B2B e-commerce are on the rise, supporting the digital B2B payments boom. What’s more, the growing focus on **cross-border payments standardization** will further bolster the e-commerce landscape and fuel these regions’ B2B payments trajectory.

Figure 11. Worldwide B2B non-cash transactions volume (billions) by region, 2019–2025F



Source: Capgemini Financial Services Analysis, 2021.

⁷⁴ [Euro Banking Association \(EBA\) Clearing](#): A provider of pan-European payment infrastructure solutions, owned by 48 of the major banks operating in Europe.

⁷⁵ [Single Euro Payments Area \(SEPA\)](#): A payment-integration initiative of the European Union for simplification of bank transfers denominated in euro.

⁷⁶ ISO 20022 is an emerging global and open international standard for exchanging electronic messages between financial institutions. It creates a common language and model for payments data.

⁷⁷ [LinkedIn](#), “Mapping the B2B Payments Tech ecosystem – On the road to consumerization,” June 1, 2021.

⁷⁸ [Asia-Pacific Economic Cooperation](#), “Why small and medium enterprises matter to APEC,” accessed July 2021.

⁷⁹ [IDB Invest](#), “Micro, Small and Medium-Sized Enterprises,” accessed July 2021.

Enhanced focus on deeper transaction security, swift data transfer, and faster settlements in B2B payments put **virtual cards** in the spotlight. Increasingly, businesses leverage platforms and tools that support automated virtual card processing – especially on cross-border B2B payments – to reduce the number of intermediaries and optimize their payments processes.⁸⁰

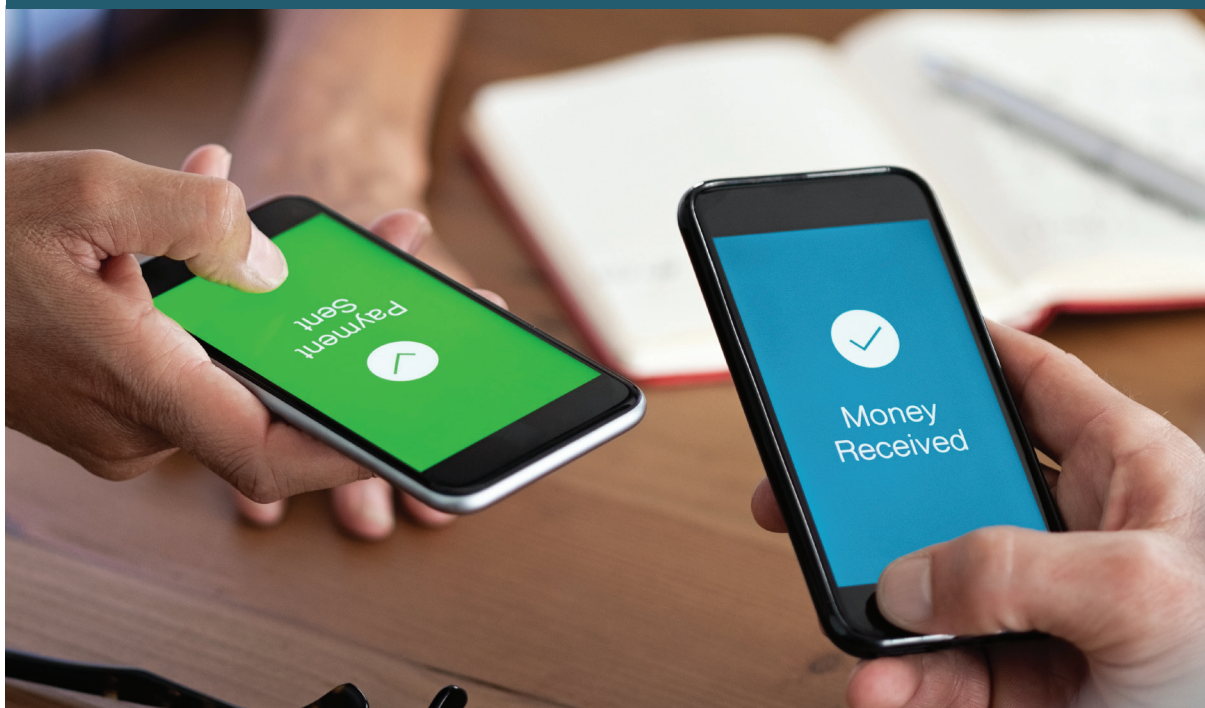
We analyzed the global non-cash payment instrument mix in two ways.

1. Traditional payments alone (checks, direct debits, credit transfers, and cards)
2. Traditional and new payments (instant and e-money payments, as money stored in digital wallets or prepaid cards in electronic/digital form).

Thanks to ongoing high use across Europe, APAC, and the United States, cards dominate the traditional payments mix. However, their share in the global non-cash payments instrument mix is stagnant.⁸¹ Furthermore, the rapid adoption of regional and local payment schemes – RuPay (India) and P27 (Nordics), and regional payments initiatives including iDEAL (Netherlands) and the planned European Payments Initiative (EPI) – may further challenge card dominance. **Nearly half of our 2021 Voice of Customer survey respondents said they prefer using regional payment schemes.**⁸²

We predict that by 2025, instant payments and e-money payments will account for more than 25% of global non-cash transactions, from 14.5% in 2020.

The **P27** (Nordics Payment Platform) and **Mastercard** are developing a multi-currency, real-time, batch payment system to replace a fragmented Nordic payment infrastructure with a single platform featuring standard scheme rules, software, and digital overlay services. Eventually, individuals in Nordic countries will pay each other using mobile devices, regardless of what service they use or their country of residence. Meanwhile, businesses will have access to a broader network of customers and suppliers. By consolidating batch and real-time clearing and settlement infrastructures across countries and currencies into one platform, P27 will improve efficiency and provide a platform for further innovation in payments.⁸³ The P27 name represents the 27 million people residing in Sweden, Norway, Denmark, and Finland.



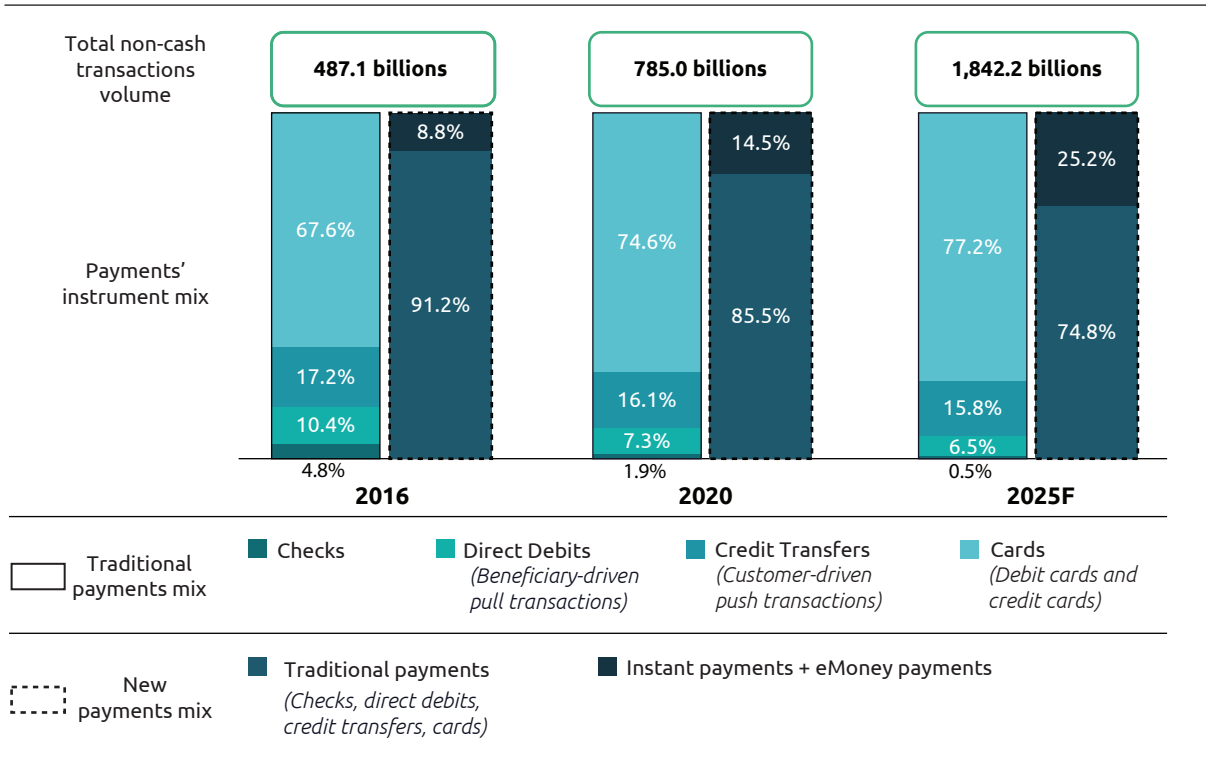
⁸⁰ [Pymnts](#), “Virtual Cards Moving Deeper Into B2B Payments,” December 21, 2020.

⁸¹ [The Paypers](#), “Japanese consumers prefer card payments to cash amid COVID-19 outbreak, finds GlobalData,” August 14, 2020.

⁸² In India, China, and Germany where indigenous payment schemes are present.

⁸³ [Insights Nordea](#), “P27 – On the way to becoming a reality,” September 26, 2019.

Figure 12. Comparing traditional vs. new: global non-cash payments' instrument mix, 2016–2025F



Sources: Capgemini Financial Services Analysis, 2021; ECB Statistical Data Warehouse, BIS Statistics Explorer, countries' central bank annual reports.

Moreover, these new-fashioned payments are being adopted quickly thanks to surging mobile wallet growth – up from 18.9% in 2018 to an astonishing 46% in 2020.⁸⁴

APAC markets remain the epicenter of real-time payments innovation as volumes surge and account for two-thirds of global instant payments volume.⁸⁵ The United States, Europe, and the Middle East represent a vast, largely untapped real-time payments market that banks and PSPs can competitively exploit.⁸⁶ US instant payment transactions grew 117% during March 2020–21, driven mainly by the increased transaction limit from USD25k to USD100k, which benefitted large disbursements and business transactions.⁸⁷

Real-time payments are still nascent in use cases and focus mainly on peer-to-peer (P2P) payments. However, as consumers embrace the speed of real-time settlements and inclusion, we believe

e-commerce payments, in-store checkouts, and cross-border transactions will cannibalize slower and less convenient payment methods. On the B2B side, instant payments offer a chance for financial service providers to unlock new revenue streams and develop data-driven services, such as instant liquidity transfers, for corporate clients.

“New payment methods create smarter payments' infrastructure and/or better orchestration of current payment types, to deliver enhanced payment experiences that clients now demand.”

– Shirish Wadivkar
 Global Head – Payments,
 Standard Chartered Bank, Singapore

⁸⁴ ACI Worldwide, “Global Real-Time Payments Transactions Surge by 41 Percent in 2020 as COVID-19 Pandemic Accelerates Shift to Digital Payments,” March 29, 2021.

⁸⁵ ACI Worldwide, “Prime Time for Real-Time report,” March 2021.

⁸⁶ The Financial Brand, “Beyond P2P: The Future of Real-Time Payments,” May 13, 2021.

⁸⁷ Capgemini World Payments Report 2021 executive interview with the Clearing House, US, July 27, 2021.

Retail non-cash transactions growth will be driven by next-gen payments, although they currently represent a relatively small share in the payments landscape

The pandemic fast-tracked emerging digital payments trends that were gaining ground even before the crisis. The unprecedented need for contactless payment options, faster transaction settlements, top-notch payment security, and a better payment experience accelerated the shift to digital payments.

And now we see enthusiastic adoption of a range of **next-gen payments** options – buy now, pay later (BNPL), invisible, biometric, and cryptocurrency.

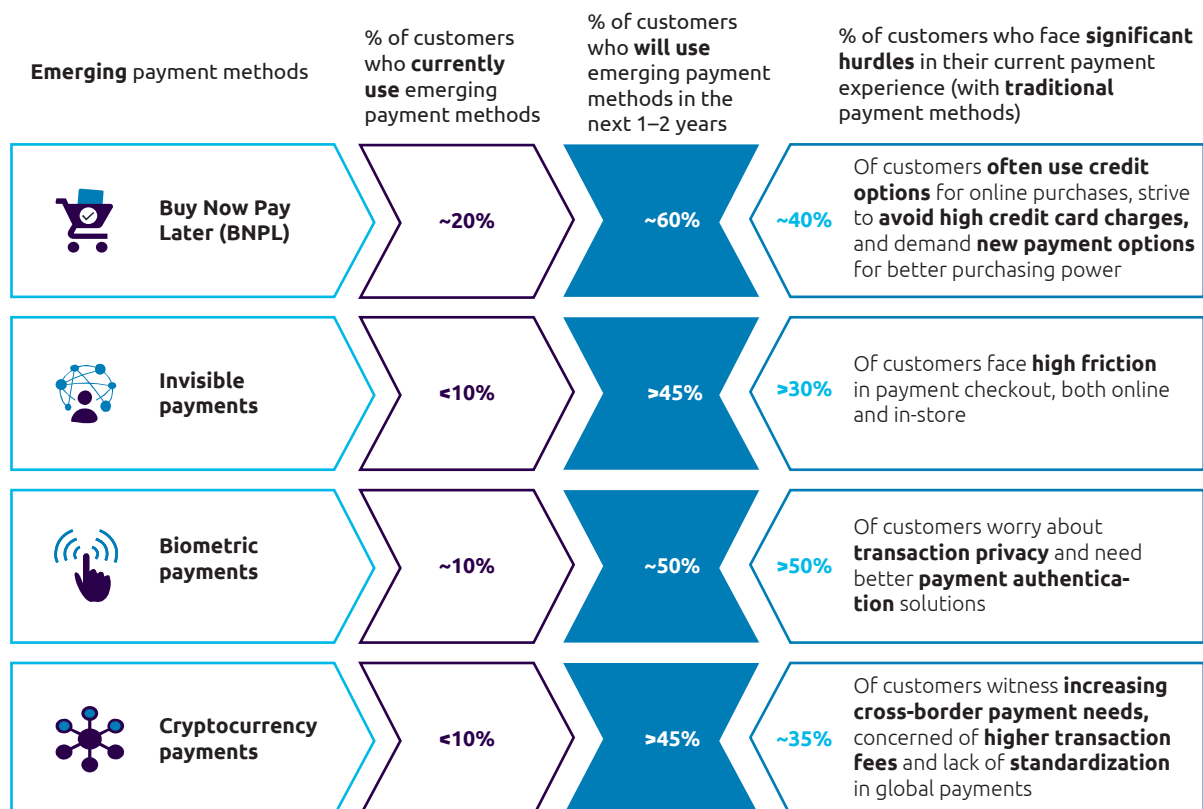
Buy now, pay later has been making gradual inroads since the mid-2010s in revolving credit. And credit EMIs (equated monthly installments or fixed

payments) became popular during the pandemic, especially among younger generations and new-to-credit populations. As consumers and retailers grappled with crisis-related headwinds, BNPL emerged as a win-win solution.

In Europe, 2020–24 BNPL compound annual growth is expected to nearly double and account for 13.6% of the region’s e-commerce spend.⁸⁸ As a result, payment firms started equipping themselves with BNPL capabilities to help drive sales for e-commerce platforms and retailers’ in-store checkouts.

- **Apple** is developing a BNPL service with **Goldman Sachs** so customers can make Apple Pay payments in installments.⁸⁹
- Southeast Asia’s leading super app, **Grab**, tapped Dutch payment firm **Adyen** to enable BNPL in its wallet so that merchants could offer pay-later solutions at checkout.⁹⁰

Figure 13. Emerging payment methods are becoming popular, yet many customers still seek a more fulfilling payments experience



Sources: Capgemini Financial Services Analysis, 2021; World Payments Report 2021 Voice of Customer survey, N=6,300.

⁸⁸ [Worldpay](#), "The Global Payments Report 2021," accessed July 2021.

⁸⁹ [Reuters](#), "Apple plans 'buy now, pay later' service – Bloomberg," July 14, 2021.

⁹⁰ [Finextra](#), "Grab taps Adyen to extend BNPL offering across Southeast Asia," July 21, 2021.

Customers enjoy greater purchasing power, easy credit with a minimal financial burden, and flexible repayments. **Nearly 20% of our Voice of Customer survey participants said they currently use BNPL solutions, and we expect the number to jump to 60% within the next two years.**

Invisible payments are making a significant impact on retail checkouts and even have the potential to take the edge off cash, cards, and wearables in the traditional payments journey – creating a convenient and speedy experience.

- **Amazon Go** (live in the US and UK) and China's **Bingobox** are invisible payments frontrunners that allow shoppers to simply walk out of a store, leaving their mobile device to process the payment automatically.⁹¹

More than 30% of consumers face significant online and in-store check-out hurdles, according to our Voice of Customer survey. Invisible payments are poised to offer a frictionless check-out experience.

Biometrics radically simplify proximity payments, increase security, and boost users' convenience. So, it's not surprising that contactless biometric card implementation is inching upward.

- **BNP Paribas** plans to roll out biometric cards to its customers across markets for an annual fee of less than USD30.00 by the end of 2021.⁹⁶
- Moscow-based **VTB bank** is working with a Russian FinTech and **Visa** to let diners pay restaurant checks by glancing into a camera to streamline the payment process and enhance CX.⁹⁷

Fast-growing e-commerce payments provider implements a BNPL platform that scales through a *build-once-and-grow* model

Stockholm-based **Klarna** is an e-commerce payment solutions platform for merchants and shoppers.

BUSINESS CHALLENGE AND OBJECTIVE: As part of a geographical expansion initiative, Klarna executives wanted to offer consumers in Australia and the US a smooth in-app shopping experience through BNPL.

STRATEGY: In 2020, Klarna partnered with US FinTech **Marqeta**, an API-based card-issuing platform, to pilot services to Australian and US merchants, including ghost card issuance, transaction authorization, and just-in-time (JIT) funding.⁹²

SOLUTION: Marqeta's platform enables shoppers to choose their mode of payment. And the solution's open APIs allow Klarna engineers to independently make real-time changes, avoiding complex ISO formatting for API calls for card issuing. What's more, the technology gives Klarna control over the entire transaction flow, from card-issuing through transaction authorization with just-in-time (JIT) funding. These features with in-app provisioning to digital wallets and customizable webhooks were the critical levers Klarna sought to ensure customers enjoyed a seamless shopping experience.

BENEFITS: The new platform enabled innovation, speed, and reliability to support Klarna's expansion into two key markets. And, thanks to the solution's scalability, Klarna can focus on regional/geographic expansion.

Today, Klarna processes around two million daily transactions, supporting 90 million shoppers through 250,000 merchants (including 78,000 in-store live retailers) across 17 countries.⁹³ Powered by Marqeta's easy-to-implement and agile solution, Klarna made a successful Australian debut. With a high appetite for cards spending, the Australian market is digitizing rapidly. By early 2021, Klarna had attracted 575,000 Australian customers from 400 different retailers.⁹⁴

With more than a million monthly users in the US by June 2020, the firm launched Vibe, a no-fee loyalty program. When US Vibe members pay off purchases on time, they earn a redeemable reward point for every dollar spent.⁹⁵

⁹¹ [Finextra](#), "The future of invisible payments," January 13, 2020.

⁹² [Marqeta](#), Klarna case study, accessed August 2021.

⁹³ [ACI Worldwide](#), "Spotlight on Klarna," June 8, 2021.

⁹⁴ [Savings.com](#), "Buy now, pay later platform Klarna surpasses 500,000 Aussie customers," January 28, 2021.

⁹⁵ [Retail Dive](#), "Klarna debuts 'Vibe' no-fee loyalty program," June 12, 2020.

⁹⁶ [Electronic Payments International](#), "Biometric cards unlikely to take off due to growth of digital wallets," May 17, 2021.

⁹⁷ [Finextra](#), "VTB and Visa test 'pay-by-glance'," June 25, 2021.

Beyond active authentication payments, passive authentication uses behavioral patterns and other contextual biometric signals to bolster payment security.

- **Barclays, Citi, HSBC, and National Australia Bank** joined **American Express** in Q4 2020 to invest in a behavioral biometrics company to focus on behavior as a predictive tool to prevent online fraud.⁹⁸

Cryptocurrency payments are becoming an increasingly popular alternative payment option among many businesses, even though the current adoption is nascent.

- **PayPal, Yum brands, and Coca-Cola** started accepting leading cryptocurrencies for payments, and **eBay** is actively exploring the possibilities.⁹⁹

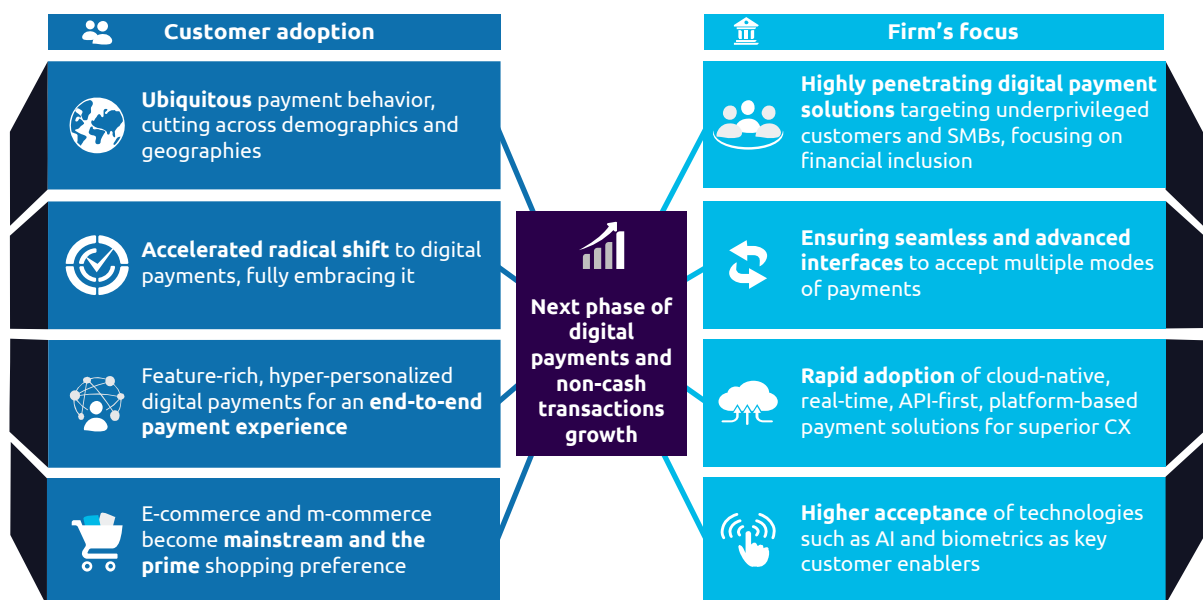
Cryptocurrency market volatility indicates a lack of maturity. Still, crypto-linked cards are taking the lead in the crypto-payments space fueled by global card player initiatives to create a fertile crypto-payments ecosystem.

With the pandemic delivering an unprecedented push, digital payments have changed customer engagement forever

COVID-19 catalyzed digital payments acceptance across various transaction types, age groups, and markets. **According to our 2021 Voice of Customer survey, nearly 45% of consumers frequently use mobile wallets to make payments (>20 transactions a year), up from 23% in the 2020 poll.**¹⁰⁰

Why are consumers jumping on the digital payments bandwagon? Thanks to the e-commerce boom! Global e-commerce market sales are predicted to surpass USD7 trillion by 2024 (a ≈20% CAGR 2019–24), with digital wallets accounting for more than half of all payments.¹⁰¹ From a business perspective, now banks and payment service providers offer solutions to support SMBs and penetrate underprivileged populations. Additionally, businesses are enthusiastically adopting cloud-native, real-time, API-first, and platform-based payment solutions to deliver *WOW*-factor customer experience.

Figure 14. Digital payments are growing thanks to rapid customer adoption and payment firms' focus on a seamless experience



Source: Capgemini Financial Services Analysis, 2021.

⁹⁸ [Finextra](#), “Big banks invest in BioCatch,” October 1, 2020.

⁹⁹ [Business Insider](#), “More companies, including PayPal and Xbox, are accepting bitcoin and other cryptocurrencies as payment. Others are weighing up their options,” May 7, 2021.

¹⁰⁰ [World Payments Report](#), Voice of Customer survey 2020 and 2021.

¹⁰¹ [WorldPay](#), “The global payments report 2021,” accessed July 2021.

A financial technology firm aspires to be a financial super-app with its data-first approach

UK-based **Revolut**, offers a fully-featured banking application that handles every aspect of Payments and money management such as currency exchange, debit cards, virtual cards, Apple Pay, cryptocurrencies, and commodities. With more than 2 million people using the Revolut app, the key to its success remains to focus on data analytics for all decision-making. With the success of the banking app, the business experienced a massive growth in its customer base, which dramatically increased the volume of data to be processed. Revolut processes 150 million transactions a month from retail and business customers around the world. The firm scaled their data platform to increase the speed of queries and accomplish complex analytical tasks owing to the growth of customer base. By choosing to partner with Exasol, a Germany-based analytics database firm, and implementing their solution, Revolut could expand self-service data analytics to all its employees and scale their data-driven decision processes. The cloud-based solution gives the ability to use and analyze large datasets spanning several sources for fraud detection, improving customer satisfaction, and financial reporting – saving a significant number of work-hours and effort in extraction, transformation, and loading (ETL) of data.

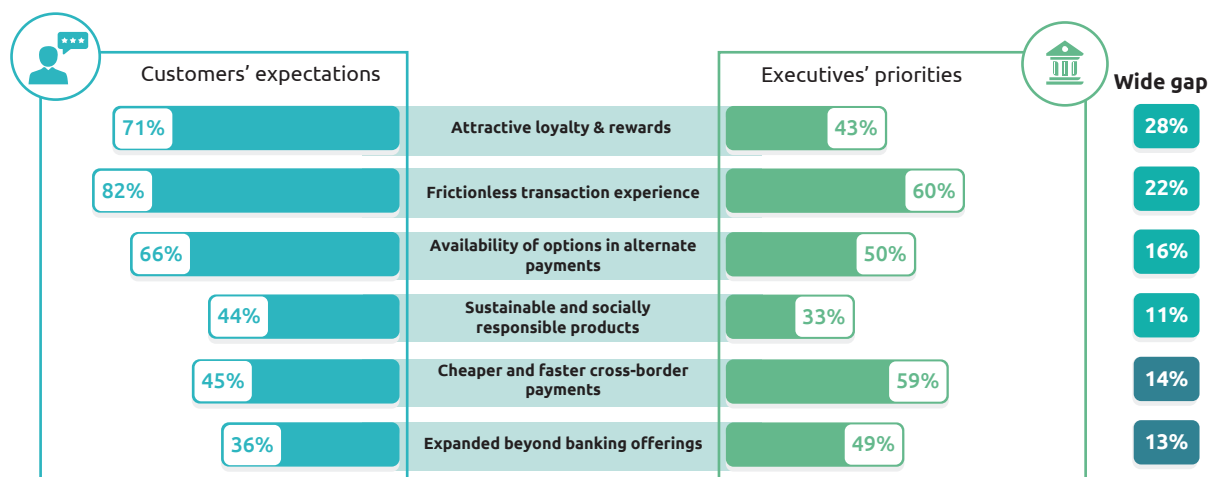
Uncertainties and fulfillment gaps stoke transformational urgency. Banks and payment firms face practical dilemmas

Unfulfilled customer demand for advanced payment methods indicates that a significant percentage of customers are not happy with their payments experience. According to our Voice of Customer survey, there is a wide gap between what customers expect and what banks and payment firms prioritize. Attractive loyalty and rewards, frictionless

transaction experience, availability of options in alternate payments, and sustainable and socially responsible payment products are the key areas in which gaps exist.

Banks and payment firms need to rapidly accelerate their transformation efforts to tackle unmet customer demands and plug the gaps! Seamless, feature-rich new-gen payments are the way forward, while regulators strive to create a level playing for firms and a risk-free environment for customers.

Figure 15. Wide gap between customers' expectations and executives' priorities



Source: Capgemini Financial Services Analysis, 2021; World Payments Report 2021 Voice of Customer survey, N=6,300; World Payments Report 2021 executive survey, N=164.

REGULATORY ACTIONS SUPPORT A COLLABORATIVE ECOSYSTEM AS FIRMS INDUSTRIALIZE INNOVATION EFFORTS

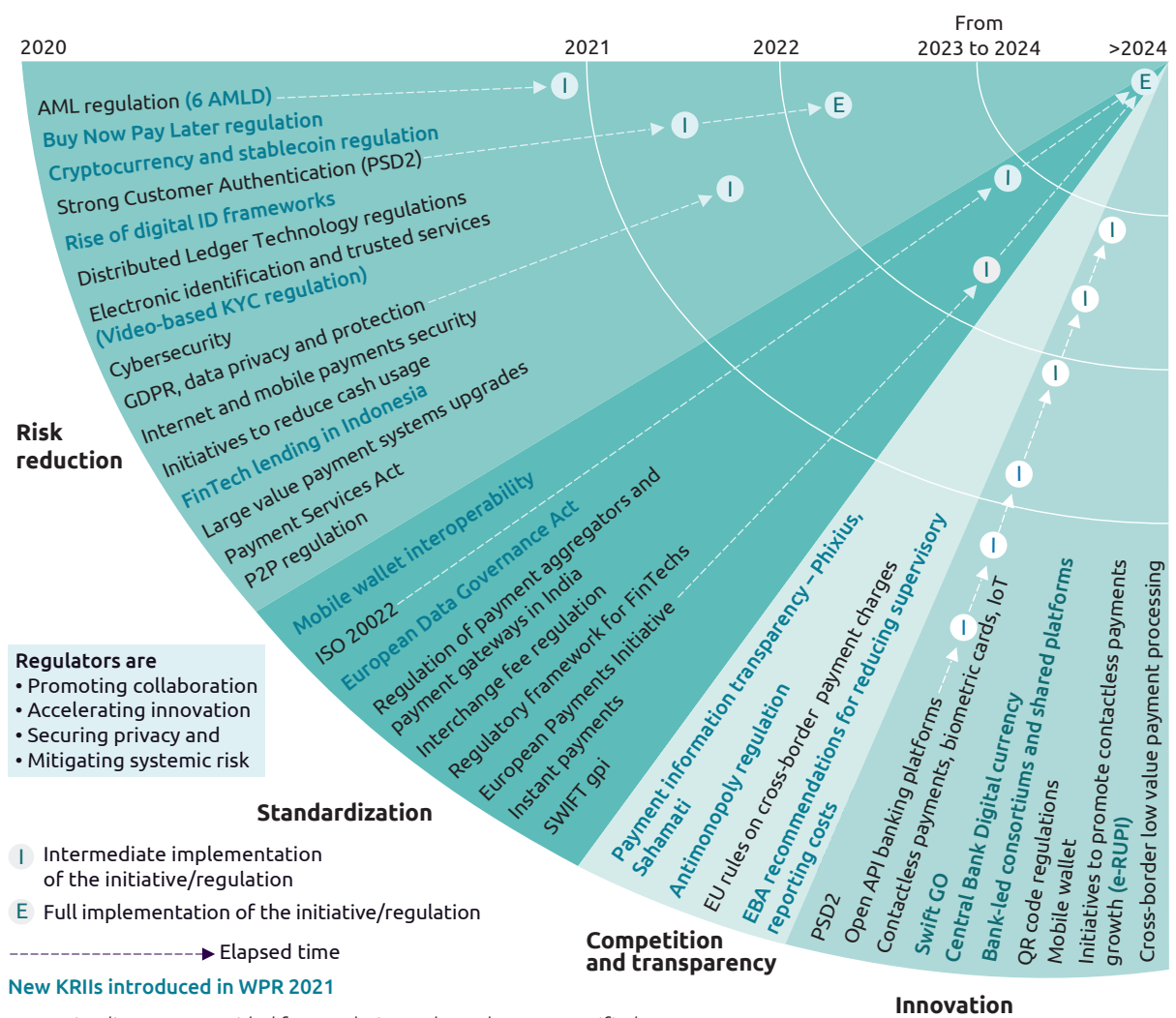
Regulators strive for equilibrium through a balanced focus on all KRIs

In 2020–21, regulators focused equally on all key regulatory and industry initiative (KRIs) primary

objectives – risk reduction, standardization, competition and transparency, and innovation.

Interestingly, this is the first time we have observed concurrent supportive action across all primary

Figure 16. Key Regulatory and Industry Initiatives (KRIs) grouped by primary objectives, 2021¹⁰²



¹⁰² Figure 16 note: Timeliness are provided for regulations where specified. No timeliness are specified for industry-trend KRIs.

objectives to promote and facilitate a payments-friendly environment. Regulators consistently added new KRILs to support each primary goal, substantiating their aim for equilibrium within the payments landscape.

Unchartered payment methods drive regulators to mitigate risk

Recent KRILs focus on customer protection and risk mitigation around evolving payment methods, including BNPL, cryptocurrency, and stablecoins (cryptocurrency backed by an asset, most often a fiat currency, crude oil, gold).

BNPL adoption is gradually picking up steam and is anticipated to grow at a 28% CAGR globally over the next five years.¹⁰³ As a result, BNPL oversight has become imperative to protect customers from debt risks. Regulators in Europe, France, the UK, Australia, and Singapore are reviewing their approach to BNPL firms and tightening rules on back-office payments processing, KYC, customer due diligence, and anti-money laundering (AML).

While **cryptocurrency and stablecoin** have become global sensations, the outlook is hazy. Globally, there are mixed reactions towards the adoption of cryptocurrencies. Some central banks (Russia, India, UAE) see potential in adoption and regulate cryptocurrencies and stablecoin.^{104, 105, 106} On the other hand, others (China, Egypt) have imposed bans to staunch the rising risk of illicit transactions.^{107, 108}

Several regulators are laser focusing on user **identification through digital frameworks**. Singapore introduced *SingPass* digital signing service in late 2020.¹⁰⁹ Australia's national debit card system **eftpos** launched *ConnectID* in June to allow users to authenticate their identity with merchants, hotels, hospitals, insurers, and government agencies by linking to a verified digital ID.¹¹⁰ And in early 2021,

the United Arab Emirates launched facial biometrics to prevent digital ID theft and ensure secure transactions in public and private sectors.¹¹¹

To accommodate pressure from merchants and payments players, the UK's Financial Conduct Authority (FCA) extended its original 2019 implementation deadline for **PSD2-SCA**, which demands a two-step verification process for online purchases using euros (EUR), to mid-March 2022.¹¹² And, although the UK opted out of the European Union's Sixth Anti-Money Laundering Directive (**6AMLD**), all FIs and legally accountable organizations operating across the European Union are aligned and expected to meet 2021 compliance requirements. The directive beefs up policy, procedures, and processes – especially around screening and monitoring high-risk, high-value transaction flows.¹¹³



As a central bank, we play a pivotal role in maintaining the safety and integrity of the payment system. We also acknowledge and closely monitor how alternative payments are radically reshaping the provision of payment services. We are committed to ensuring effective governance with a clear framework of accountability and liability that will facilitate value exchange with efficiency among all parties in the ecosystem."

– Ziad B. Al-Yousef

H.E. Deputy Governor for Development & Technology, Saudi Central Bank (SAMA), Saudi Arabia

¹⁰³ [FIS global](#), "Digital Wallets to Represent Half of Global eCommerce Sales by 2023, According to 5th Annual Worldpay Global Payments Report," February 27, 2020.

¹⁰⁴ [Reuters](#), "Russian lawmakers approve legal status for cryptocurrencies, but ban use as payment," July 23, 2020.

¹⁰⁵ [Business Insider](#), "India's new crypto regulations are ready for the monsoon session of parliament, says the country's Finance Minister," July 6, 2021.

¹⁰⁶ [Wamda](#), "UAE Securities and Commodities Authority approves crypto assets regulation," October 26, 2020.

¹⁰⁷ [Pymnts](#), "China Bars Banks, Payments Cos From Cryptocurrency Services," May 19, 2021.

¹⁰⁸ [Al-Monitor](#), "Central Bank warns Egyptians away from Bitcoin as value skyrockets," April 15, 2021.

¹⁰⁹ [Govtech Singapore](#), "New "Sign with SingPass" service provides greater convenience in documentation signing," November 4, 2020.

¹¹⁰ [NFCW](#), "Eftpos rolls out secure digital identity exchange for Australian consumers," June 29, 2021.

¹¹¹ [Biometric update](#), "UAE Cabinet approves trial of facial recognition for private sector services," February 17, 2021.

¹¹² [Finextra](#), "FCA extends SCA deadline by a further six months," May 20, 2021.

¹¹³ [Finextra](#), "Meeting the requirements of AML 5 and 6," January 11, 2021.

Regulators identify competition bottlenecks and promote transparency to ensure payments ecosystem standardization.

One of the prominent KRIs in this area is the EU's **Data Governance Act (DGA)** proposed in Q4 2020 to foster data availability by ensuring trust in data intermediaries and boosting data-sharing mechanisms across Europe through cross-sectoral standardization.¹¹⁴ In a similar move, the Reserve Bank of India (RBI) introduced a **mobile wallet interoperability** initiative in May 2021 focused on payments standardization.¹¹⁴ The initiative requires all licensed prepaid instruments or mobile wallets (**Paytm, PhonePe, MobiKwik**, etc.) to be interoperable beginning in fiscal 2023.¹¹⁵

People's Bank of China (PBoC) announced antitrust rules in early 2021 to ensure competition in the payments space. As a result, any non-bank payments processor with over a third of the non-bank payments market – or two companies with a combined half of the market – could be subject to State Council regulatory warnings. This draft rule to root out quasi-monopolies could be challenging to industry leaders **Alibaba, Tencent, Meituan, and Baidu**.^{116, 117}

Following the Wirecard debacle in 2020, Singapore firms are pushing for multiple versus stand-alone payments processors. In the event of disruption of services from one payment processor, merchants and consumers will access alternate processors to handle transactions.

RBI released a **New Umbrella Entity (NUE)** framework in 2020 to select retail payments consortia. The groups may launch instant payment networks to rival Unified Payments Interface (UPI), developed by the National Payments Corporation of India (NPCI). This move will reduce NPCI dominance and invigorate innovation and market competition.¹¹⁸

Providing payment information transparency through collaboration between financial firms is also essential to establish trust between participants in the payments landscape. Phixius, Nacha's US

interoperable payment information exchange utility, and Sahamati – a collaboration between major financial regulators in India – are ensuring tight security when users' payment information is shared.^{119, 120}



Standardization is key to achieving critical mass in industry adoption, as it reduces the technical debt by all parties. Akoya is an excellent example, where consumer personal finance data is shareable through an API hub. We are also working on a digital document repository offering that can streamline e-invoicing, billing, and remittance processes."

– Peter Davey

SVP, Head of Product Innovation,
The Clearing House, US

Regulators are also enabling financial inclusion and improving payment systems efficiency by fostering innovation

Regulators and policymakers are becoming more actively involved in financial inclusion initiatives worldwide. Today, 69% of adults, globally, have a banking account.¹²¹ The next milestone moves from account access to account usage for countries where 80% or more of the population have accounts (China, Kenya, India, Thailand). These countries rely on reforms, private sector innovation, and a push to open low-cost accounts, including mobile and digitally-enabled payments. Also, the pandemic amplified the need for cashless payments and sparked innovation and adoption of mobile wallets, contactless cards, and QR-code payments.

- **Argentina** launched *Transferencias 3.0* in late 2020 to allow any domestic business to charge for services and receive payment via QR code on a mobile phone.¹²²

¹¹⁴ [European Digital SME](#), "Data Governance Act: DIGITAL SME welcomes Commission's proposal to strengthen data sharing in the EU," April 23, 2021.

¹¹⁵ [Economic Times](#), "RBI makes mobile wallet interoperability mandatory from FY23," May 2021.

¹¹⁶ [TechCrunch](#), "China's draft payments rules put Ant, Tencent on notice," January 22, 2021.

¹¹⁷ [Bloomberg](#), "Beijing Just Tore Up China's Giant Internet Playbook," November 11, 2020.

¹¹⁸ [The Economic Times](#), "Six consortiums apply to RBI for NUE licence for retail payments," April 1, 2021.

¹¹⁹ [Nacha-Phixius](#), accessed July 2021.

¹²⁰ [Sahamati](#), "Certification Framework For The Account Aggregator Ecosystem," accessed July 2021.

¹²¹ [World Bank data](#), accessed August 2021.

¹²² [Library of Congress](#), "Argentina: National Digital Payment System Implemented," January 28, 2021.

- **Singapore** and **Thailand** collaborated to enable real-time cross-border payments through mobile numbers.¹²³
- The **Indian** government introduced *e-RUPI* in Aug 2021. This e-RUPI voucher shared via SMS or QR code eliminates intermediaries by ensuring that service sponsors connect directly to the beneficiaries.¹²⁴

Various markets are implementing open banking frameworks to bolster innovation. In early 2021, Brazil commenced the phased implementation of an open banking initiative to protect customer data.¹²⁵ And the **Saudi Central Bank** (erstwhile SAMA) announced its intention to launch open banking during the first half of 2022.¹²⁶ Similar to regulatory initiatives, industry initiatives foster payments ecosystem innovation.

- **Swift** launched *Swift Go* to boost cross-border payments by enabling a seamless, highly secure, low-value service for small and medium-sized enterprises directly from their bank accounts.¹²⁷
- To promote QR code payments, Indian firm **Paytm** launched an all-in-one QR code for merchants in early 2020. The service enables a single reconciliation platform for all payments through the *Paytm for Business* app.¹²⁸

CBDCs are a trending topic now for various regulators/central banks. Currently, the impact of CBDC pilot projects on PSPs is limited, but broader adoption could lead to changes in data sharing and competition, according to Fitch Ratings. The possibility that regulators may stir PSP competition

by enabling more firms to access digital currency payment transaction data could be significant.¹²⁹ For example, the Indian government is touting the e-RUPI as a precursor to a future CBDC launch. (For more CBDC information, see page 38.)



CBDC could drive further substantial innovation in payment systems. However, what is important - from our perspective - is the model that will be defined and implemented to distribute and manage digital currencies."

– **Marcello Vittorio Ronco**

CIO, Digital transformation manager, technology explorer, UniCredit, Germany

Largely, 2021 has been a year of proactive regulatory synergy across all primary objectives – paving the way for an open finance future. While it is inevitable that FIs will need to lead coordination and integration efforts to steer open finance migration, regulators are actively facilitating the move.

The open finance framework shaping up in the UK sets the stage for more significant financial innovation through efficient and effective data exchange. Australia, Canada, the United States are considering the open finance path for a broader understanding of a consumer's financial situation and to offer customized and innovative solutions.^{130, 131, 132}

¹²³ [Pymnts](#), "Singapore And Thailand Collaborate For Real-Time Payments," April 30, 2021. [Moneycontrol](#), "What is e-RUPI and does it lay the ground for RBI's digital currency?," August 3, 2021.

¹²⁴ [Moneycontrol](#), "What is e-RUPI and does it lay the ground for RBI's digital currency?," August 3, 2021.

¹²⁵ [Labsnews](#), "Brazil's Central Bank changes rules for open banking's second phase," April 19, 2021.

¹²⁶ [Pymnts](#), "Saudi Arabia's Open Banking Plan Aims To Advance Digital Innovation," January 14, 2021.

¹²⁷ [Business Wire](#), "SWIFT Launches SWIFT Go, a Fast, Cost-Effective Service for Low-Value Cross-Border Payments," July 27, 2021.

¹²⁸ [Economic Times](#), "Paytm launches all-in-one QR for merchants," January 8, 2020.

¹²⁹ [Fitch Ratings](#), "China's Digital Currency Could Affect Alipay and Weixin Pay," June 21, 2021.

¹³⁰ [FinTech Futures](#), "What are the opportunities in open finance?," May 11, 2021.

¹³¹ [Finextra](#), "Why Biden's Executive Order is a green light for US open banking," July 28, 2021.

¹³² [Pymnts](#), "In Canada, Basic Open Banking Just Got An Upgrade To 'Open Finance'," August 2, 2021.

Decentralized Finance (DeFi) is an up-and-coming trend in parallel with CBDC. An open finance model increases convenience and access points to incumbent banking systems, whereas **DeFi focuses on security and privacy**. Transactional DeFi operations are completed on a public decentralized blockchain network, allowing users to execute smart contracts using decentralized peer-to-peer applications (DApps) without an intermediary. With traders locking more than USD60 billion in DeFi contracts (May 2021), the trend is gaining momentum and could potentially disrupt the payment landscape.¹³³

Cryptocurrencies that work on the DeFi platform (Bitcoin, Ethereum) are becoming more widely accepted for payments. For example, **Visa** allows transaction settlement using *USDC*, a stablecoin powered by the Ethereum blockchain, co-founded by **Circle Internet Financial**.¹³⁴

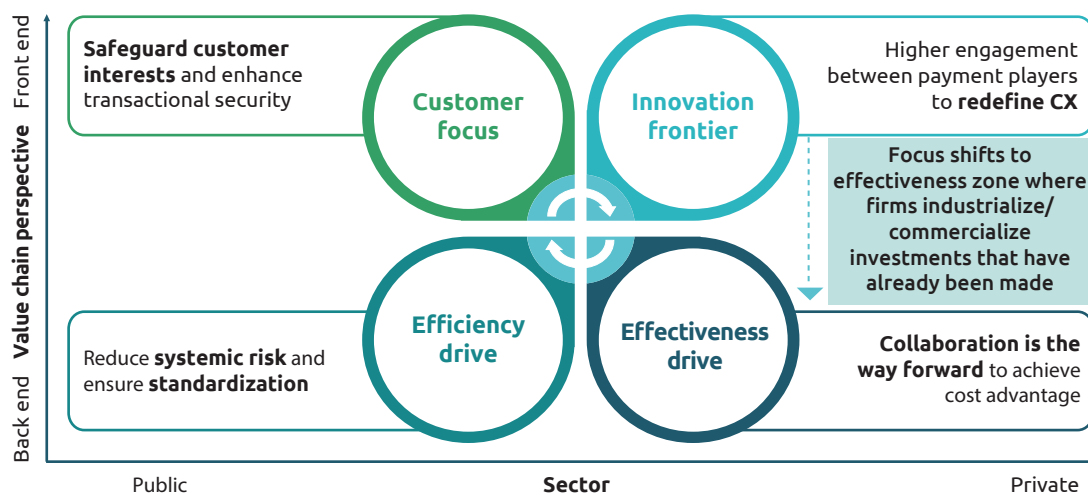
Overall, DeFi is expected to create a borderless, trusted, open, and inclusive financial system that may spur financial firms to include decentralized offerings. However, despite the advantages, there are still unanswered questions around performance, accountability, and user experience, along with unique regulatory challenges. In late 2020, the **World Economic Forum** released a *DeFi Policy-Maker Toolkit* for regulators. As retail banks anticipate and prepare to provide new DeFi products and services, decentralized payments and stablecoins may attract mainstream adoption for payments.

Efficiency to effectiveness – The KRII journey delivered positive changes

KRII initiatives are evolving across four categories: Efficiency, Customer focus, Innovation, and Effectiveness. Placed in a matrix format, the Y-axis depicts the value-chain perspective, and the X-axis indicates impacted sectors (public to private) to form a KRII framework.

Efficiency: A decade ago, there was a strong focus on driving efficiency, enforced mainly by the public sector. Firms launched initiatives to strengthen their back-end operations with an eye on reducing systemic risk and ensuring stability through standardization. Examples in this area include large-value system upgrades (e.g., TARGET in EU) and payments modernization initiatives around the globe.¹³⁵

Figure 17. KRII journey – value chain perspective vs. industry adoption



Source: Capgemini Financial Services Analysis, 2021.

¹³³ [DeFi Pulse](#), "Crypto Volatility Index (CVI) introduces margin trading for volatility tokens," accessed August 2021.

¹³⁴ [Forbes](#), "Visa partners With Ethereum Digital-Dollar start up that raised \$271 million," December 2, 2020.

¹³⁵ [Fineksus](#), "TARGET Consolidation Project of the Eurosystem," December 27, 2020.

Regulators and central authorities continue to be active in this category with recent additions such as the European Data Governance Act, ISO 20022, instant payments, to name a few.^{136, 137}

“*Seamless transaction experiences require an optimized back end and an innovative front end with efficient straight-through processing. The foundation of a frictionless payments system is transaction data. Migrating to standards such as ISO 20022 will provide an opportunity to leverage all data to serve customers better and provide value-added services such as fraud protection.*”

– **Harry Newman**
Head of Banking Strategy, SWIFT, UK

Customer focus: As digital payments grew thanks to efficient systems and enthusiastic customer adoption, regulators focused on customer protection. Critical areas include transaction security, data protection, and privacy, and safeguarding customer interests. Introduced initiatives include BNPL, cryptocurrency/stablecoin regulation, PSD2-SCA, and others.^{138, 139}

Innovation: Eventually, we began to record public-sector *push*, as well as private-sector *pull* that led to an innovation frontier featuring initiatives such as open banking API platforms, sandbox experiments, cryptocurrency, stablecoin, and contactless payments. These initiatives fostered higher engagement between payment players, which was instrumental in redefining payments customer experience.

Effectiveness: As a natural consequence of the earlier innovation stage, we see several initiatives in this *holy grail* category. Firms now focus on the benefits of investing in innovation, customer protection, and risk reduction. There is a quantifiable rise in industry collaboration, cross-sectoral partnerships, and alternative infrastructure. The industry is adopting a collaborative approach to add value and fight commoditization.

- Examples include the **European Payments Initiative (EPI)**, founded by a collaboration of European banks backed by the **European Central Bank (ECB)**, and the rise of non-government digital IDs such as **eftpos** in Australia.^{140, 141}

What's more, offers from bank-led consortium platforms – we.trade, Marco Polo, Partior, and DirectBooks – to share payments infrastructure are likely to become increasingly popular.^{142, 143, 144, 145}

Will regulators eventually revert to an efficiency drive that sparks a cyclical KRII framework? Let's wait and watch.

“*While regulators are striving to attain market equilibrium in payments, it might also impose pressure on the payment players (both traditional and new age). To reduce this pressure, players have started collaborating through initiatives such as EPI to attain low-cost effectiveness drive.*”

– **Claus Richter**
COO, P27 Nordic Payments, Denmark

¹³⁶ [Ibid.](#)

¹³⁷ [Finextra](#), “Big banks back Swift's new platform and ISO 20022 roadmap,” June 24, 2021.

¹³⁸ [Ibid.](#)

¹³⁹ [Sysnet](#), “Payment Services Directive (EU) 2015/2366 (PSD2) & Strong Customer Authentication,” January 22, 2020.

¹⁴⁰ [EPI](#), “Creating a comprehensive payment solution for Europe,” accessed July 2021.

¹⁴¹ [Finextra](#), “Eftpos Australia rolls out national digital identity service,” June 30, 2021.

¹⁴² [Marco Polo](#), accessed July 2021.

¹⁴³ [we.trade](#), “A secure digital platform that makes it easier for buyers and sellers to trade globally,” accessed July 2021.

¹⁴⁴ [JP Morgan](#), “DBS, J.P. Morgan and Temasek to establish platform to transform interbank value movements in a new digital era,” April 28, 2021.

¹⁴⁵ [PR Newswire](#), “DirectBooks Launches Communications Platform for the Primary Issuance of Corporate Bonds,” November 19, 2020.

Ambitious European Payment Initiative (EPI) aims to become a *home-grown leader* by 2025

Sixteen leading **European banks launched EPI** (backed by the European Central Bank) in July 2020 to create a unified, pan-European payment solution leveraging SEPA Instant Credit Transfer (SCT Inst). Currently, around 30 European banks/credit institutions and two third-party acquirers are **EPI** shareholders. However, as more firms enroll, the initiative is expected to become more prevalent.^{146, 147}

The **EPI** founding banks set up an interim company in October 2020 with a Q4 2021 deadline to meet design objectives, after which it becomes a holding company, covering scheme management and processing. In case the shareholders decide to pursue the initiative, **EPI** wallets with SCT Inst and cards will launch into the EU market in Q1 2022. EPI's full-fledged rollout is slated for 2025 as it earns trust and international acceptance.¹⁴⁸

EPI implementation goals:

- **EUROPEAN SOVEREIGNTY:** Through independent and sovereign governance, **EPI** will create a new payments network without the impact of global card schemes and BigTechs.
- **COST-EFFECTIVENESS:** The modern, standardized, and end-to-end payment solution will run on SCT Inst rails instead of multiple and arduous cards rails.
- **ROBUST DATA PROTECTION:** Customer data will reside and be stored within the European region, safeguarded with tight data privacy and protection guidelines.

EPI's estimated addressable market size: EUR2.6 trillion, the value of cards transactions estimated to be processed in 2022. **By 2025, we project a 30% increase, with EPI transaction value reaching EUR3.4 trillion.**¹⁴⁹

EPI is a response to competition from BigTechs and new players, and the initiative benefits from tier 1 sponsors. However, its success should not be considered an inevitable *slam dunk*. Instead, accelerated time to market, speed of adoption by both merchants and banks, and the ability to launch safe and innovative services to consumers and merchants will ultimately determine the scheme's success.



¹⁴⁶ [European Payments Council](#), "EPI: towards a new European payment solution?," September 9, 2020.

¹⁴⁷ [Ibid.](#)

¹⁴⁸ [Reuters](#), "European banks plan 'home grown' rival to Visa and Mastercard by 2025," February 24, 2021.

¹⁴⁹ Capgemini analyzed ECB and BIS data.

CBDC gains momentum across all regions as a potential alternative to private cryptocurrencies

Central Bank Digital Currency (CBDC) is a digital form of a nation's money issued by its central bank that people can use just like cash. The process allows digital currencies to flow directly between participants by bypassing complex legacy settlement processes and eventually reducing transaction fees.

Distributed ledger technology (DLT)-based smart contracts that monitor and control digital currency movement is a revolutionary CBDC feature. Central banks may leverage networks of smart contracts in their CBDC system to manage their nation's monetary policies – interest rates adjustments, money supply, and direct stimulus payments to individuals.

In addition to providing frictionless payments, CBDCs can act as a gateway for financial inclusion by helping unbanked customers set up accounts and keep pace with the evolving digital payments landscape. Considering the potential benefits of CBDCs, several markets worldwide are experimenting, and some have progressed to the pilot phase.

China is at the forefront and expected to become the first major economy to launch.¹⁵⁰ And, as the United States, France, Sweden, Russia, and South Africa continue CBDC pilots, these projects may soon become a reality.^{151, 152}

Canada, India, and the European Union are actively working toward pilot phases^{153, 154} Argentina and New Zealand are showing growing interest, as well.^{155, 156}

As governments and central banks contemplate CBDC adoption, three implementation approaches generate the most industry chatter – **retail**, **wholesale**, and **hybrid** CBDCs.¹⁵⁷

- **RETAIL:** Widely accessible digital currency issued by a central bank to the public through e-wallet for retail transactions. Robust pilots are nearing the go-live phase in China, Sweden, and Argentina.^{158, 159, 160}
- **WHOLESALE:** Issued by central banks to facilitate inter-banking transactions for financial institutions (FIs). Bolstered by DLT solutions, wholesale CBDCs will enhance FIs' payment and security settlement efficiency for domestic and cross-border transactions. As of July 2021, no projects had gone live. However, advanced pilots are under way in Singapore,¹⁶¹ Canada,¹⁶² and France.¹⁶³ Saudi Arabia and the UAE are collaborating on the cross-border project, *Aber*.¹⁶⁴ Additionally, France and Singapore have partnered on a multi-CBDC project. One significant challenge for wholesale inter-bank transactions is that FIs will need to convert CBDC into commercial bank money in general-purpose transactions.
- **HYBRID:** A two-tiered model issued by central banks to the public and intermediaries (banks and other FIs). Consumers carry out retail transactions via intermediaries. Hybrid CBDC pilots are underway in Russia, Hong Kong, and China. This two-tiered model may offer intermediaries opportunities to innovate with CBDC offerings and play a prominent payment activity role. In Russia,¹⁶⁶ Hong Kong,¹⁶⁷ and China.¹⁶⁸ This two-tiered model may offer intermediaries opportunities to innovate with CBDC offerings and play a prominent payment activity role.

¹⁵⁰ [China briefing](#), "China's Digital Yuan: Development Status and Possible Impact for Businesses," May 12, 2021.

¹⁵¹ [Finextra](#), "Digital Dollar Project preps US CBDC pilots," May 3, 2021.

¹⁵² [Coindesk](#), "Bank of Russia Eyes Digital Ruble Prototype in Late 2021," March 11, 2021.

¹⁵³ [Finextra](#), "Pandemic accelerates Bank of Canada's CBDC work," February 10, 2021.

¹⁵⁴ [ECB](#), "Eurosystem launches digital euro project," July 14, 2021.

¹⁵⁵ [Decrypt](#), "Argentina Is Starting to Think About a Digital Peso," February 12, 2021.

¹⁵⁶ [Coindesk](#), "Reserve Bank of New Zealand to Consult on Potential CBDC," July 7, 2021.

¹⁵⁷ [101 Blockchains](#), "What Are Retail And Wholesale Central Bank Digital Currencies," January 15, 2021.

¹⁵⁸ [Ibid.](#)

¹⁵⁹ [Reuters](#), "Sweden to bring in banks in next stage of e-krona project," April 6, 2021.

¹⁶⁰ [Payments.ca](#), "Central Bank Digital Currency (CBDC): Retail CBDC Global Developments," December 2020.

¹⁶¹ [Asia Times](#), "Singapore developing wholesale CBDC," November 23, 2020.

¹⁶² [Bank of Canada](#), "Digital Currencies and Fintech: Projects," accessed July 2021.

¹⁶³ [Coindesk](#), "Banque de France Extends Wholesale CBDC Experiment," June 21, 2021.

¹⁶⁴ [The FinTech Times](#), "Monetary Authority of Singapore and Banque de France Report Success from CBDC Experimentation," July 15, 2021.

¹⁶⁵ [Forbes](#), "Project Aber From Saudi Arabia And The UAE Addresses Cross Border Payments With Digital Currencies," December 29, 2020.

¹⁶⁶ [The Paypers](#), "Bank of Russia presents new CBDC concept," April 9, 2021.

¹⁶⁷ [Finextra](#), "Hong Kong delves deeper into CBDCs," March 26, 2021.

¹⁶⁸ [Central Banking](#), "Some thoughts on CBDC operations in China," April 1, 2020.

However, CBDC implementation challenges exist as central banks focus resources on instant payments and open banking models, and digital currency takes a back seat. For example, Brazil recently put its CBDC debut on hold for two years.¹⁶⁹ Other implementation challenges might include obtaining universal acceptance for CBDCs capable of supporting all payments with the ability to convert to other forms of payments such as bank money.

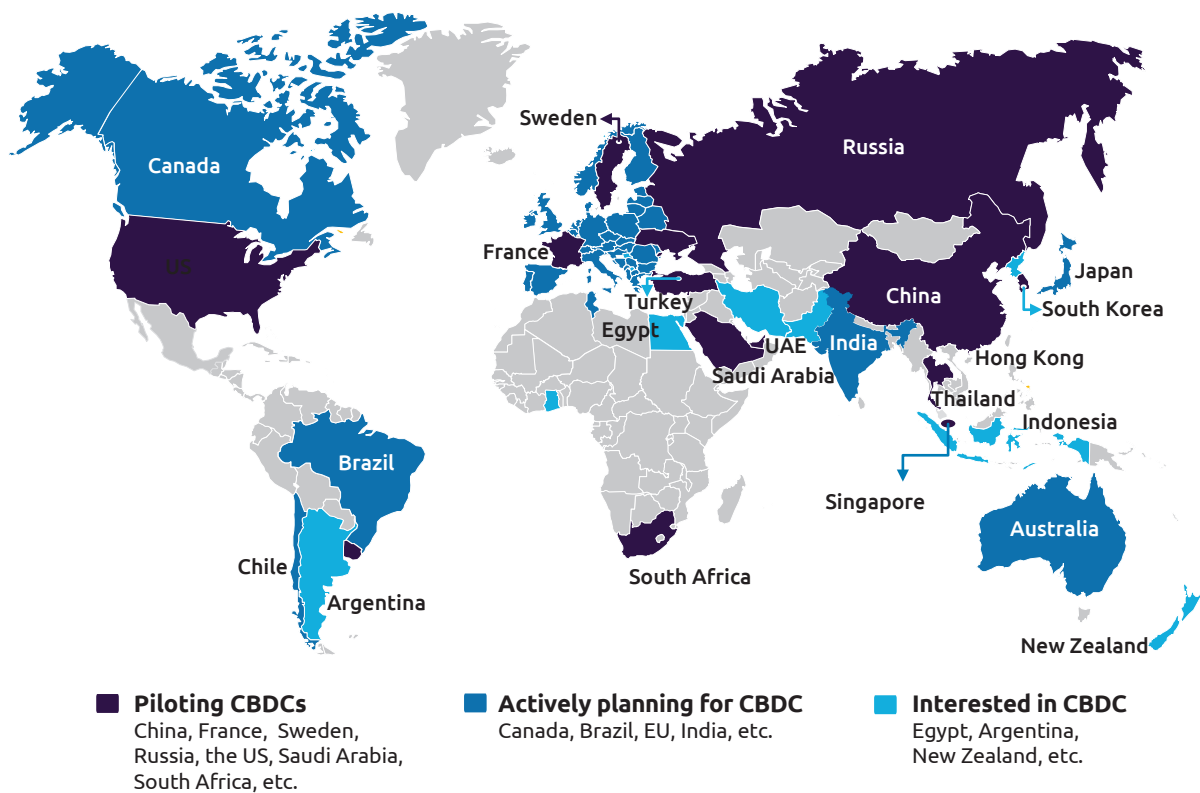
What’s more, ecosystem collaboration will be a critical implementation driver. Over the long term, central bank digital currency with access to the necessary payment infrastructure and effective execution can catalyze the transition to a cashless or less-cash society. However, as critical enablers, central banks must exercise CBDC implementation with caution. In monetary terms, M0 (cash and most liquid form of money) and M1 (cash + deposits + checking accounts) can be the basis for CBDC. Currently, there is a lot of hype and speculation over CBDCs, undermining the necessary action

for comprehensive implementation and migration, including tax structure, settlement speed, governing regulation, integration of players, and checks and controls. Hence, although a novel idea, it may take years for CBDC to transition from concept to reality.¹⁷⁰

“If introduced, retail CBDCs should be developed and implemented through public/private sector collaboration from the start to ensure that deployment complements other payment methods and leverages payment service providers’ expertise, market knowledge, and customer relationships.”

– Etienne Goosse
 Director General, European Payments Council, Belgium

Figure 18. CBDC adoption heats up across global markets



Source: Capgemini Financial Services Analysis, 2021.

¹⁶⁹ [Pymnts](#), “Brazil’s Central Bank Puts CBDC Debut On Hold 2 Years,” June 13, 2021.

¹⁷⁰ [Bloomberg](#), “Powell Says Fed Has Made No Final Call on Digital Currency,” October 19, 2020.

CONCLUSION

Work strategically for Payments 4.X relevance and profitability

In combination with COVID-19, social, legal, economic, political, and technological (SLEPT) forces were catalysts that broadly extended transaction banking and payments frontiers within a compressed time frame. Industry frontrunners seized upon uncertainty and quickly pivoted to gain a sustainable competitive Payments 4.X lead. PayTechs (newcomers specializing in payments technology) embraced a plug-and-play utility mindset to navigate the tumultuous environment deftly.

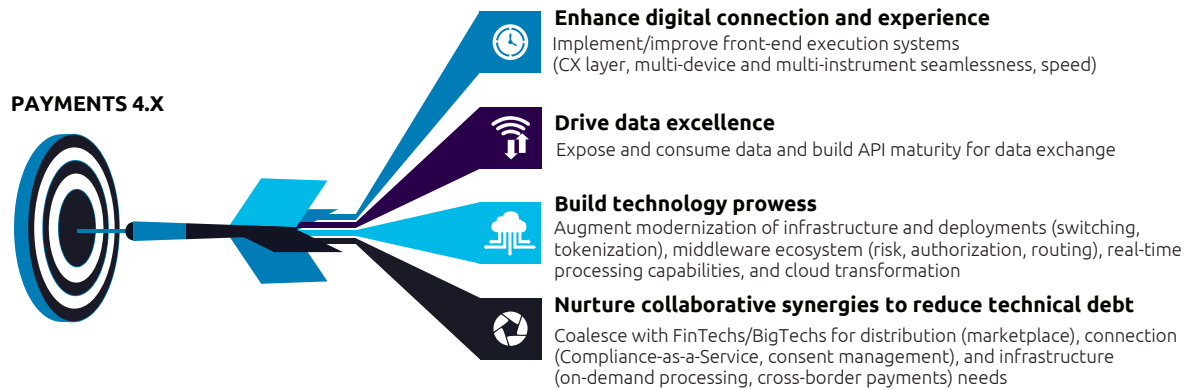
New business models are emerging, with several tech giants successfully promoting *super apps* to help consumers and small businesses combine daily-life needs or multi-layered business functions into a single application. Similarly, the pandemic powered B2B digital adoption to a high-flying trajectory. Data-powered platforms will shape the future, and the payments function will progressively fade to the background, enabling **embedded finance**.

It goes without saying that high-performing Payments 4.X early adopters will become tomorrow's embedded finance leaders. Increasingly, as-a-Service models will make the value chain modular, opening up opportunities for new disruptors with novel business models. However, success within an atmosphere of continuous fluidity, short development cycles, and intense competition will depend on a robust partner ecosystem.

Needless to say, each firm is at a unique evolutionary stage, grappling with specific challenges. Thus, while there is no standard playbook, a **customized game plan** is essential. But where to begin?

Start by setting a plan in motion to leverage data, build digital prowess, enhance customer engagement, and nurture collaborative synergies. Most importantly, **calibrate** scope (customer segments, types of offerings) and **collaborate** to scale (geographical expansion, product innovation, capability augmentation) for profitability.

Figure 19. Transform *payments* to *possibilities*



Source: Capgemini Financial Services Analysis, 2021.

PARTNER WITH CAPGEMINI

Payments advisory/consulting services

Players must align emerging outside-in imperatives (KRIs) with internal context/realities.

Capgemini's payments advisory offerings help you adapt through strategic analysis, opportunity sizing, scenario modeling, definition of financial business case, product portfolio revision, revising the payments operating model, development of roadmap addressing product, process, and platform dimensions.

Payments hub transformation

Existing monolithic, hard-to-replace payment solutions are hindering the full potential of emerging payments. Long cycles are required to make meaningful business changes. What's more, legacy complexities inhibit the integration of new partners and market infrastructure. The result? High change-and-run costs in people, processes, and platforms, which slow the realization of value from payments. COVID-19 has crystalized the criticality of payment systems modernization.

Capgemini's payments hub solution is an end-to-end transformation framework, including advisory services, migration/implementation, and support for product solutions from leading commercial off-the-shelf (COTS) partners for cards management, switching, fraud management, core real-time as well as traditional payments schemes. Our Smart Payments integration framework is an API-based integration framework based on open-source technology that comes with an interface connection component that enables 30+ interfaces across the payments lifecycle, along with interface- and static data matrix.

Capgemini can help clients implement **Microservice architecture** through cloud migration, re-platforming with semi PaaS/full PaaS, cloud-native (API, microservices, and serverless) applications, and modernization strategy.

Cards portfolio migration

Retailers are looking for new partnerships for their co-branded and private label cards as non-cash payments rise. Issuers/banks are undergoing cards transformation with portfolio migration as digital and cost become key strategic levers. Processors/Product Players are introducing new digital and scalable solutions to meet changing industry needs.

Capgemini's strong accelerators can efficiently migrate cards portfolios and de-risk the entire migration.

Digital payments and data

Digital is leading to exponential growth in customer expectations. FinTechs are redefining the way organizations, businesses, and customers interact and transact. The emergence of mobile wallets, third-party payment platforms, and cryptocurrency is revolutionizing payments. All these new business models require a modern data platform.

Capgemini's cloud data solution supports data-centric, data-driven decisioning for organizations and helps to embed data, analytics, and AI across all business functions. The solution can help democratize payments data and support monetization propositions while exploring new business models, products, and services. Capgemini's financial services industry cloud offerings provide an option to have an issuer-owned, anonymized, data-agnostic environment with best-in-class consumer identification and enhancement services enabling strategy development, new product offerings, and data deployment to production systems. These systems can be configured to leverage your existing application solutions supporting data insights and exploration, application decisioning, authorizations, collections management, line management, and offers execution.

Instant payments

Instant payments cater to digital and non-cash payments that are becoming a financial industry standard. Banks can seek to align their payments back-office technology to a standalone instant payments solution or combine it with a payments hub.

Capgemini's instant payments offerings include payments strategy, impact analysis, program management, platform selection, architecture redefinition, and end-to-end implementation (including quality assurance) in line with local scheme requirements.

Cash and liquidity management

Cash and liquidity management has emerged as a critical focus area in the post-pandemic environment.

Capgemini's cash and liquidity transformation offerings include end-to-end implementation of virtual account management (VAM), multi-currency management solutions from leading customized-off-the-shelf (COTS) solution partners.

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ACKNOWLEDGMENTS

We would like to extend special thanks to all the financial institutions and individuals who participated in our Executive Interviews.

The following firms agreed to be publicly named:

FS Firms: ABN AMRO; Abu Dhabi Commercial Bank; Arab Financial Services (AFS); Australia and New Zealand Banking Group (ANZ); Bank of Ireland; BNP Paribas; Bol.com; Budget Insight; Buna Payment Platform; Commercial Bank of Dubai (CBD); Computop AG; Credit Suisse; de Volksbank; Deutsche Bank; DZ Bank; Emirates NBD; European Payments Council; ING; International Card Services (ICS); Kantox; Magnati; Marqeta; Mashreq; Mastercard; ME Bank; National Australia Bank (NAB); Network International; Nordea; Open Bank; P27 Nordic Payments; Saudi Central Bank (erstwhile SAMA); SEB Group; Security Bank; Standard Chartered Bank; Stripe; SWIFT; The Clearing House (TCH); UniCredit Bank AG; Visa; Worldline.

Technology firms: Amazon Web Services (AWS); Google; MuleSoft; Salesforce; Temenos.

Survey partners: Dynata, US.

We would also like to thank the following teams and individuals for helping to compile this report:

Jeroen Hölscher, Christophe Vergne, Elias Ghanem, Jerome Buvat, Chirag Thakral, Vivek Singh, Srividya Manchiraju for overall leadership for this year's report. Swaroop Francis, Shanmugapriya M, Shabhat Shakeel, and Mahendra Bassarmalani for in-depth market analysis, research, compilation, and drafting the findings. Tamara Berry for editorial support and content leadership. Dinesh Dhandapani Dhesigan for graphical interpretation and design.

Capgemini's Global Payments Network for providing insights, industry expertise, and overall guidance: PSV Venugopal, Fredrich Andreas, Marwan Farah, Thierry Morin, Stefan Huch, Johan Bergstrom, Gerold Tjon Sack Kie, Mark Ashton, Marco de Jong, Rushikesh Tole, Ravi Vikram, Sriram Kannan, Subhabrata Sanyal, Rajesh Hegde, Richard van den Engel, Jens Korb, Rishabh Shah, Alan Gregory, Jean-François Biragnet, Hugo Bitton, Edouard Morio de l'Isle, Joost van Putten, Alexander Eerdman, John Conlon.

Vijaydeep Singh, Marion Lecorbeiller, Pranoti Kulkarni, Swathi Raghavarapu, Sai Bobba, Anirudh Malyala, Brent Mauch, Martine Maître, Bipin B., Chandrashekhar Modi, and Jyoti Goyal for their overall marketing leadership for the report, and the Creative Services Team for producing the report: Pravin Kimbahune, Kalasunder Dadi, Sushmitha Kunaparaju, and Suresh Chedarada.

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METHODOLOGY

Retail non-cash transactions volume analysis: The World Payments Report 2021 offers insights across 44 payments markets within various geographical regions. For worldwide macro descriptive graphs, we defined five regions: Europe, North America, Asia-Pacific, Latin America, and MEA, grouped by geographic, economic, and non-cash payment market maturity criteria.

B2B non-cash transactions volume analysis: The World Payments Report 2021 offers insights across five regions: Europe, North America, Asia-Pacific, Latin America, and MEA, grouped by geographic, economic, and non-cash payment market maturity criteria.

Market coverage: **North America:** Canada and the United States. **Europe:** 32 markets: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Russia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine, the United Kingdom, and other CE markets. **Asia-Pacific:** Australia, Japan, Singapore, South Korea, China, Hong Kong, India, and other Asian markets. **Latin America:** Brazil, Mexico, and other Latin American markets. **Middle East and Africa:** South Africa, Saudi Arabia, and other MEA markets.

Because of a lack of reliable historical trend information, the data for some countries were estimated and grouped under the appropriate

regional heading: other Asian markets, other Latin American markets, or other MEA markets.

Data sources: Latest Bank for International Settlements (BIS) statistics explorer (2019 data released December 2020); European Central Bank (ECB) Statistical Data Warehouse (2019 data released November 2020); central bank publications and websites; macroeconomic indicators (gross domestic product (GDP) and population) collected from the World Bank. COVID-19 statistics and recovery rates accessed from IMF, World Bank, and Standard and Poor's estimates.

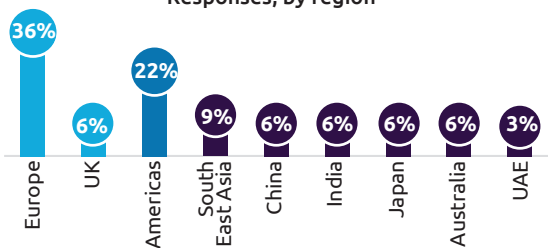
Primary research details:

World Payments Report 2021 Voice of Customer survey: The survey questioned customers on their personality dimensions such as lifestyle, employment, payment behavior, preference of alternative payment options, satisfaction levels, and friction during payments. Participants were also asked questions on their willingness to share customer data, affinity towards environment-friendly payments, and their interest in using payments from non-banks.

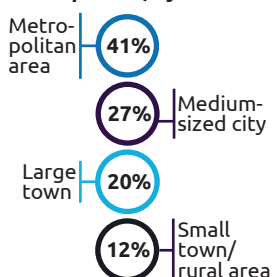
World Payments Report 2021 industry stakeholders surveys and interviews: The report includes insights from focused interviews and surveys with over 210 senior executives of leading banks, FinTechs, Payment Processors and PSPs, and Technology Service Providers representing all the three regions: Americas (North America and Latin America), Europe, and Asia Pacific & Middle East.

Voice of Customer survey: 6,300 customers

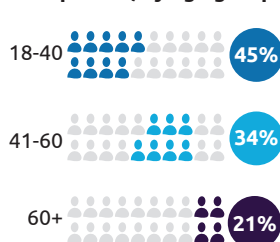
Responses, by region



Responses, by location



Responses, by age group

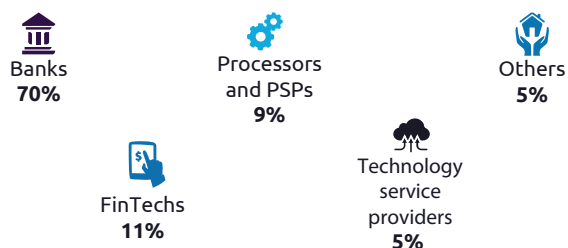


Executive surveys and interviews: 214 banking and payments executives

Responses, by region



Responses, by firm type



ABOUT US



Capgemini is a global leader in partnering with companies to transform and manage their business by harnessing the power of technology. The Group is guided everyday by its purpose of unleashing human energy through technology for an inclusive and sustainable future. It is a responsible and diverse organization of 290,000 team members in nearly 50 countries. With its strong 50 year heritage and deep industry expertise, Capgemini is trusted by its clients to address the entire breadth of their business needs, from strategy and design to operations, fueled by the fast evolving and innovative world of cloud, data, AI, connectivity, software, digital engineering and platforms. The Group reported in 2020 global revenues of EUR16-billion.

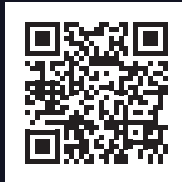
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