

Payments Top Trends 2021

Drivers, opportunities, and risks shaping financial services





TABLE OF CONTENTS

Executive Summary		4
Trend 01	Payments-as-a-Service gains traction among small- and mid-tier institutions	6
Trend 02	Super-app operating models offera path to one-stop functionality markets and end-to-end CX	8
Trend 03	Payments firms turn to DLT for efficiency and economy	10
Trend 04	Data-driven offerings are the latest winning propositions for payments firms	12
Trend 05	Digital ID is becoming an invisible payments enabler for retailers	14
Trend 06	COVID-19 is fast-tracking alternative payments adoption	16
Trend 07	With an eye on expansion, tech giants augment payments offerings to attract new customers	18
Trend 08	Tech investment surges as payments firms augment transaction data security	21
Trend 09	Regulators beef up scrutiny of new players and offerings as the ecosystem evolves	24
Trend 10	Evolving regional payment schemes are poised to challenge the powerhouse status quo	26
Conclusion		28
Ask the experts		29



Executive Summary

Lessons learned help us focus on the future

History will earmark 2020 as one of the most transformational years for the payments industry. It heralded an era of new trends in technology adoption and consumer behavior. It has tested **digital mastery in payments** as the focus shifted towards innovation and payment risks – and banks have had to adapt quickly to the new normal by virtually engaging customers and collaborating with FinTechs. **Risk reduction** became a critical priority amid the COVID-19 pandemic. **Non-cash transactions** are on a robust growth path, accelerated by increased adoption during COVID-19. Regulators are working to instill **trust** and address **non-cash payments risk** amid unparalleled growth as players collaborate to quell uncertainty.



Customer experience continues to be critical for both regulatory and industry stakeholders. Investments in **emerging technologies** are on the rise to mitigate **fraud, data-driven offerings** are being considered for providing value-added propositions, and **distributed ledger technology** is in focus for digital currency solutions, efficiency enhancement, and cost gains.

Regional initiatives such as **P27** (Nordics real-time payments system) and the **EPI** (European Payments Initiative) are gaining traction in response to country-level fragmentation and competition. In a scenario in which business and revenue models are challenged – and digital mastery is the competitive differentiator – players are implementing *super-app* models to expand and fortify their ecosystems. As apps converge and the marketplace approach becomes pivotal, robust **digital identity** measures are needed to ensure consumer protection.

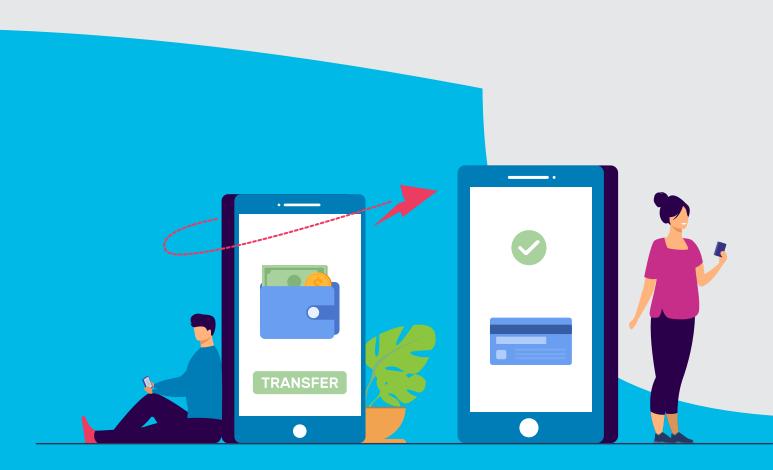
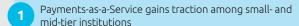
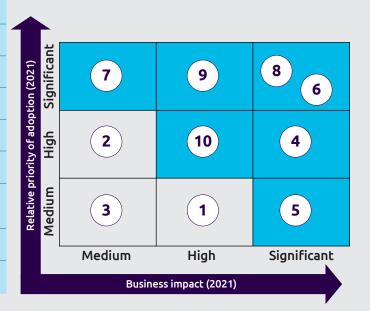


Exhibit 1: Top payments trends 2021 - Priority matrix



- 2 Super-app operating models offer a path to one-stop functionality markets and end-to-end CX
- 3 Payments firms turn to DLT for efficiency and economy
- Data-driven offerings are the latest winning propositions for payments firms
- Digital ID becomes an invisible payments enabler for retailers
- 6 COVID-19 is fast-tracking alternative payments adoption
- With an eye on expansion, tech giants augment payments offerings to attract new users
- Investments in emerging technologies upsurge as payments firms augment their focus to combat fraud and fortify transaction data security
- 9 Regulators beef up scrutiny of new players and offerings as the ecosystem evolves
- Evolving regional payment schemes are poised to challenge the powerhouse status quo

Source: Capgemini Financial Services Analysis, 2020.



Adoption priority refers to the urgency of accepting a particular trend to maximize value creation in 2021. The rating is relative and based on identified trends for payments firms operating in the

Business impact represents the impact of an identified trend on a payments firm's 2021 business. The impact could be on customer experience, operational excellence, regulatory compliance, or profitability.

The matrix represents the view of Capgemini analysts for a hypothetical firm working in the current operating environment:

• Low-interest rates

current environment.

- Operational disruption due to COVID-19
- · High competitive environment and increased focus on customer centricity due to new-age players
- Operational cost overruns and high capital lock-ins
- Uncertain regulatory environment.

This will vary for each firm depending on its business priorities, geographic location, and several other factors. For specific requirements, please contact <u>payments@capgemini.com</u>.

Payments-as-a-Service gains traction among small- and mid-tier institutions

Payments-as-a-Service (PaaS) is becoming the option of choice for cost-effectiveness and go-to-market speed as bespoke payment technology stacks struggle to accommodate dynamic regulatory and technology updates.

Context

Banks and financial institutions are outsourcing their payments platform technology and operations to boost digital innovation and stay relevant in a competitive environment.

- PaaS will efficiently and cost-effectively support legacy payment infrastructure upgrades and enhance customer experience (CX).
- The trend is gaining momentum, especially among mid- and small-segment banks and FIs with restricted capital flows.



- Changes in regulatory regimes are a challenge for banks seeking to upgrade their payments infrastructure.
- PaaS enables the flexibility to add new payment schemes and clear evolving access at a predictable operating cost.
- COVID-19 brought modernization into sharp focus as near 100% digital delivery became a competitive imperative.
- Growing customer expectations around convenience and competition from technology companies make PaaS an attractive option.

- PaaS is a cloud-native environment with a set of individual payment services configured and delivered to end-users, significantly reducing the implementation timeline and budget.
 - An offshoot of the Banking-as-a-Service model, PaaS is swiftly gaining traction within the payments landscape.
 - While some players create full-fledged payment products for end users, others offer platforms to third parties, facilitating unique solutions for customers and partners.
- Why is PaaS becoming popular now? The mindsets of banking executives are shifting.
 - The PaaS market is on course to grow from USD5.7 billion in 2019 to USD16.7 billion by 2024, at a CAGR of nearly 24%.¹
 - Almost 68% of payments executives believe they run a significant risk of losing prospective clients and markets if they do not prioritize technology transformation.²
- As COVID-19 reduces investment and puts balance sheets under pressure, financial firms are eyeing a PaaS model for cost-effective on-demand services.





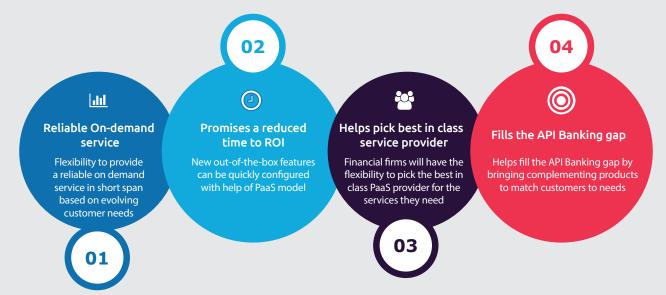


¹ Markets and markets, "Payment as a Service Market by Component (Platform and Services), Service (Professional (Integration & Deployment and Support & Maintenance) and Managed Services), Vertical (Retail and Hospitality), and Region - Global Forecast to 2024," May 2019.

² Capgemini, "World Payments Report 2020," October 06, 2020.

- Bank Austria teamed up with FinTech PayKey to give clients instant access to various financial services, including peer-to-peer (P2P) payments and balance checking from social and messaging mobile apps.³
- Lloyds Bank partnered with PaaS platform Form3 to underpin the entire banking group's payment processes.⁴
- Milan-based UniCredit Bank partnered with Nordic EquensWorldline to process its payments in Austria and Germany including Single Euro Payments Area (SEPA), instant, multi-currency, domestic, and high value.⁵
 - Commerzbank outsourced much of its payments technology and transactions to EquensWorldline as a multi-year roadmap exercise to run until 2023.6
- Payments platform specialists are creating a mark for themselves.
 - UK-based FinTech ClearBank offers a payment clearing platform that customers access through PaaS.
 - Marqeta offers a card-issuing platform that allows FIs to instantly issue virtual cards and integrate them into a digital wallet.⁷

Figure 1: PaaS adoption – A cost-effective game changer





- PaaS can help firms quickly configure new features for better return on investment (RoI) time.
- Firms can benefit from additional services such as AML screening, reconciliation, and settlement, in addition to payments processing and client connectivity.
- PaaS can help fill the API banking gap to seamlessly bridge complementary services and products with existing legacy/monolithic infrastructure.

³ Finance Magnates, "UniCredit Bank Austria Integrates PayKey's Solution for Instant Services," February 24, 2020.

⁴ Fintech Futures, "Lloyds partners with Form3 to create group-wide payments platform," July 23, 2020.

⁵ Fintech Futures, "UniCredit finds two new partners in Tel Aviv's PayKey and equensWorldline," February 28, 2020.

⁶ Finextra, "Payments as a Service - a new normal future of payments," January 19, 2020.

⁷ Marqeta, accessed September 2020.

Super-app operating models offer a path to one-stop functionality markets and end-to-end CX

The shift from single- to multi-purpose apps is cascading globally – even for players outside APAC – thanks to their power to create a seamless, integrated, contextualized, and efficient experience.

Context



- Easy access to a range of goods and convenient payment options spurs mobile wallet adoption.
- Several FS firms have recognized the power of mobile/digital wallets as a way to leverage customer proximity, and they are developing super apps to build insular ecosystems.

Catalysts

- The mobile wallet market was valued at EUR900 billion in 2019 and is projected to reach EUR6,400 billion by 2027.9
- As smartphone adoption increases, the trend to mobile device-based financial services is picking up steam because of convenience and cost-effectiveness. The result is that FIs and tech players are now zeroing in on mobile apps to provide payment services.
- As a hedge against new entrants, more and more incumbents are looking to simplify user interfaces, create seamless CX, and integrate value-added services offered through mobile wallets.
- The pandemic has raised the significance of digital channels such as mobile apps and wallets. Nearly 70% of payments firms' executives say they would be interested in significantly investing in mobile apps and digital wallets even after the crisis ends.¹⁰

- The super-apps phenomenon originated in China, spread to India, Singapore, and Vietnam, and is now cascading into South America and other geographies.
 - In most Asian markets, the lack of mature infrastructure such as card rails presents opportunities for new, digital-native payments firms and services. The reported merger of Yahoo Japan's parent Z Corp and LINE is an example. However, the merger, announced in November 2019, was postponed until 2021 due to the ongoing pandemic.¹¹
 - With a utility-of-utilities reputation, Indonesia's Go-Jek and India's Paytm have used super apps to build wide moats around payments.
- The latest trend is the development of local services into super apps that drive usage at scale.
 - China-based Meiutan, an on-demand delivery platform with 412 million users, is on track to 26% annual growth.¹²



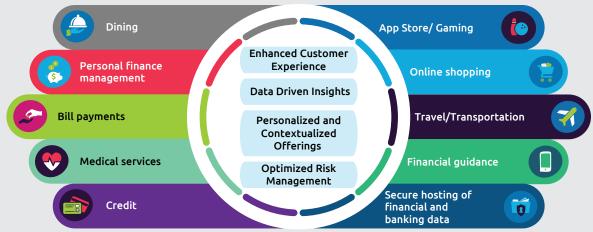




- ⁸ Robosoft Technologies, "The Superpower of Super Apps and How to Create One," July 1, 2020.
- ⁹ PRNewswire, "Mobile wallet market size report," July 8, 2020.
- ¹⁰ Capgemini, "World Payments Report 2020," October 06, 2020.
- ¹¹ Nippon, "Yahoo Japan Parent's Merger with Line to Be Delayed," June 30, 2020.
- ¹² Robosoft technologies, "The super power of super apps and how to create one," July 1, 2020.

- A platform-based business model is an underlying key for super-app success. The model weaves around a core product, scalable supply-side economy, and strong partnerships to fortify the ecosystem.
- Incumbents realize the power of super apps to sway customers from mobile devices to interoperable and portable ecosystems.
 - PayPal's Xoom remittance platform now covers 32 countries includes an e-commerce platform to add more value to its merchant and consumer bases.¹³
 - The State Bank of India supports a digital ecosystem via its YONO app, a B2C platform linked to 75 international e-commerce players (Amazon, Uber, Airbnb, Booking.com, and Expedia) across various categories (fashion, electronics, home furnishings, travel, holidays) to cater to customer lifestyles.¹⁴
 - Banks are partnering with super apps to leverage their reach and user base. For example,
 Thailand's Siam Commercial Bank partnered with Indonesia's Go-Jek to reach 10 million users.
 - Neobanks, such as Moscow-based Tinkoff, are also aiming big with their super app strategy. Based
 on AI and machine learning, the super app is the next step in the evolution of the bank's existing
 mobile app. It combines all Tinkoff ecosystem components and is scalable to meet the needs of 20
 million people by 2023.¹⁶

Figure 2: Super apps redefining marketplace and customer experience





- Digital wallets offer affordable implementation compared with a traditional banking core.
 - Traditional players and incumbent firms can provide a fantastic app experience with beautifully
 designed applications offering customers features such as in-app sign-up, virtual cards, spend and
 save tools, analysis of expenditures, and in-app access to various micro-financial services.
 - Super apps have tremendous reach and user bases. For example, WeChat's monthly active user (MAU) base exceeds one billion. So, the worldwide expansion of this trend seems inevitable.
 - Several use cases ranging from merchant payments, customer engagement and personalization, lifestyle shopping, digital access to loyalty schemes, and financial planning/guidance will make super apps a vital element of payments firms' digital strategy.

¹³ Pymnts, "Why super apps could have super powers," October 28, 2019.

¹⁴ SBI, "YONO by SBI," accessed August 2020.

¹⁵ Reuters, "Indonesia's Go-Jek to announce tie-up with Thai lender," July 10, 2019.

¹⁶ Efma, "Tinkoff: Creating a banking super-app," July 1, 2020.

Payments firms turn to DLT for efficiency and economy

Federated digital identity and currencies reap socio-economic benefits from Distributed Ledger Technology (DLT), a cross-border payments enabler.

Context



Despite COVID-19 setbacks, the financial services sector was expected to cumulatively invest more than EUR1.4 billion in blockchain solutions in 2020, according to a report from IDC. The top three DLT use cases in 2019 were cross-border payments and settlements, trade finance, and identity management.¹⁷

• Firms are initiating DLT-based projects to examine and analyze issues associated with operational capacity, resiliency, liquidity savings, settlement finality, and privacy.

Catalysts



- Cross-border payment inefficiencies stemming from existing banking models prompt DLT platform consideration.
- In supply chain financing, investments in blockchain hedge against higher trade costs and delays and offer an efficient way to track goods and mitigate payment fraud.
- COVID-19 has encouraged central banks to issue DLT-based digital currencies as an alternative to fiat currencies.
- Federated digital identity is emerging as a DLT application because of its decentralization functionality.



- Brazil's Banco Rendimento partnered with Ripple to adopt RippleNet Cloud, enabling faster crossborder transactions via blockchain.¹⁸
- Bank of America, BNY Mellon, and Credit Agricole joined the Marco Polo Network, a trade and working capital finance network, to bring efficiencies to international trade using blockchain technology.
- Spain's CaixaBank joined the we.trade blockchain platform (developed by a consortium of 15 European FIs) to benefit from efficiencies in foreign trade transactions.¹⁹
- Backed by the Italian banking association (ABI), Spunta Banca is a DLT-based initiative that provides infrastructure for interbank reconciliation processes. Spunta Banca is fully operational, with more than 100 banks supporting the initiative.²⁰
- Several central banks and commercial banks are exploring the potential of DLT to launch digital currencies.
 - People's Bank of China is piloting Central Bank Digital Currency (CBDC).²¹ China's four largest state-owned commercial banks are testing a wallet application to store, send, and receive Digital Currency Electronic Payment (DCEP).

¹⁷ IDC, "IDC Reports Worldwide Blockchain Spending to Slow Down to US\$ 4.3 Billion in 2020," June 22, 2020.

¹⁸ Pyments, "Blockchain Makes Inroads Against Cross-Border Payments Friction," June 16, 2020.

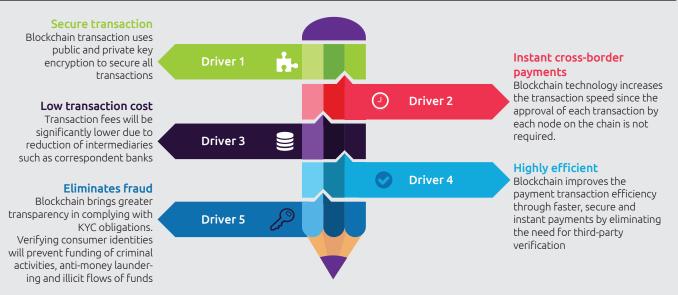
¹⁹ Finextra, "CaixaBank implements we.trade blockchain platform," January 3, 2020.

²⁰ The Paypers, "Italian banks together with SIA, R3, NTT Data join Spunta blockchain infrastructure for payments," October 14, 2020.

²¹ Central Banking, "PBoC confirms digital currency pilot," April 21, 2020.

- The central bank of Sweden is testing e-krona through February 2021.²²
- JP Morgan created a digital token, JPM Coin, and accepted cryptocurrency companies, Coinbase and Gemini, as customers. The coin facilitates money transfer/payments among the bank's clients.²³
- Facebook's cryptocurrency *Libra* becomes a multi-currency model in addition to the proposed Libra token in order to comply with regulatory requirements. Facebook is still contemplating on its launch plans by the end of 2020.²⁴
- Bank for International Settlements (BIS) and a group of seven central banks have published a
 central bank digital currency (CBDC). Participants include the Bank of Canada, Bank of England,
 Bank of Japan, the European Central Bank, the Federal Reserve, Sveriges Riksbank, Swiss National
 Bank, and BIS.²⁵
- Federated digital identity is an increasingly important DLT use case because it is critical to authorization and authentication in an open environment.
 - Blockchain and crypto development company HashCash Consultants plans to create a federated digital identity to help partner banks create digital identities for customers over a decentralized network to mitigate identity theft and forgery.²⁶
 - The Reserve Bank of Australia (RBA) completed the first version of a federated digital identity credential known as *TrustID* designed to allow individuals to establish an online digital identity to prevent payment fraud.

Figure 3: Factors driving DLT investment





- Deploying DLT in payments streamlines the entire transaction process so that payments are updated in real-time and settled instantly with no failures.
- Transaction fees will significantly decrease compared to existing money-transfer methods because fewer intermediaries, correspondent banks, will be needed.
- DLT-based digital currencies can facilitate maximum transparency, reduce money-laundering, and mitigate fraud.
- ²² Theblockcrypto, "Sweden's central bank starts testing its digital currency e-krona," February 21, 2020.
- ²³ Fortune, "Big banks flip the script now it's 'Bitcoin, not blockchain'," August 26, 2020.
- ²⁴ The Verge, "Facebook is shifting its Libra cryptocurrency plans after intense regulatory pressure," March 3, 2020.
- ²⁵ The Paypers, "BIS, central banks publish CBDC report laying out key requirements," October 12, 2020.
- ²⁶ Coin Telegraph, "Blockchain Firm Says Banks Need DLT to Manage Identities Better," August 12, 2020.

Data-driven offerings are the latest winning propositions for payments firms

Big data and analytics empower banks and payment providers with insights that enable hyper-personalized offerings while sparking customer loyalty.

Context



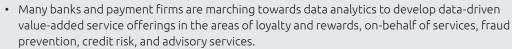
The on-demand economy, vast real-time transaction processing, and data handling are pressuring firms to fortify their infrastructure and technology in data processing and management.

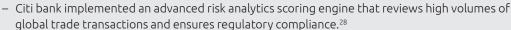
- · Data has become a critical asset for payments firms in deciding their upcoming value-added offerings to improve customer engagement.
- Considerable investments are being made in data analytics to drive value-added services. The global spend on big data analytics was more than USD180 billion in 2019, with the Banking, Financial Services, and Insurance (BFSI) sector garnering the second most funding.²⁷

Catalysts



- · Demand for customer and real-time analytics accelerates the need to build capabilities around the analysis of vast amounts of traditional and non-traditional data.
- The convergence of payments and lending requires robust credit risk management techniques available from multiple sources.
- Predictive analytics is becoming an excellent tool for payment firms to examine security, compliance, and operational nuances.
- Big data has the potential to drive payment methods hyper-personalization such as issuing personalized cards in which the user chooses card graphics – a customized experience.





- Payment firms help merchants by assimilating data that track customer buying behavior, payment habits, location, and cookies to offer appropriate payment options to reduce customer conversion rates.
 - PayPal introduced Smart Payment Buttons that dynamically offer customers relevant payment choices based on location, cookies, and other options. The move complements PayPal's One Touch (single-click payment system) and Shopper Insights tool, which provides aggregated and anonymous data about PayPal customers' shopping trends to help merchants devise personalization strategies.²⁹



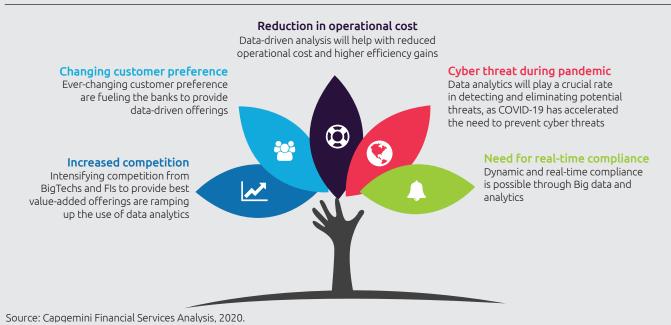
²⁷ Research and Markets press release, "Big Data Analytics Industry Report 2020," March 2, 2020.

²⁸ Fintech Futures, "Citi launches NextGen AI compliance project," April 30, 2020.

²⁹ PayPal, accessed October 2020.

- As IoT adoption increases, customer data volumes are poised to explode, heightening the need for robust data aggregation, assimilation, and synthesis.
 - Rich customer data sets include purchases at points-of-sale, payments done online, customer profile data collected for KYC.
 - One of the most promising use cases is risk-based authentication, in which a fraud-detection engine calculates a risk profile for each channel request that leverages customer analytics to identify irregularities in the user's behavior.
 - Wells Fargo is in the midst of a data transformation journey. The bank aims to personalize individual customer experiences through data science technologies and AI.³⁰
- Card payment firms are using real-time data analysis to provide data-based solutions and derive intelligence.
 - Visa has recently invested in Good Data, an analytics company that will help focus on interactive self-service analytics, user interfaces, and data visualizations.³¹
 - Mastercard uses Brighterion's technology to provide a fraud score for every transaction on its network, making the information available to issuers as part of anti-fraud efforts.³²

Figure 4: Why are data-driven offerings a boon for financial firms?





- Effective data mining models and analysis can speed the acquisition of high-value customers, boost conversion rates, and improve overall acquisition efficiency.
- Personalized end-to-end user journeys using customer segmentation and specific payment habits can be built from user-generated data.
- In the context of open banking, as data becomes transparent and shareable with third parties, advanced data modeling using Big Data techniques will be necessary.
- Big data processing tools such as natural language processing can churn a load of compliance data to pre-empt/identity potential aberrations, especially in a dynamic regulatory environment.

³⁰ Express Computer, "Why data and analytics is so significant for Wells Fargo," January 6, 2020.

Globe Newswire, "Visa and GoodData to partner on development of data products for better customer insights," May 20, 2020.

³² Pymnts, "How Mastercard Uses AI To Fight Fraud And Make Better Credit Decisions," July 8 2020.







Digital ID is becoming an invisible payments enabler for retailers

Payments are now part of the retailers' ecosystem, and digital ID offers shoppers seamlessness and end-to-end value.

Context

- Retailers are scrambling through the digital shift in consumer preferences, accelerated further by COVID-19, to identify ways to retain customers.
- As lines between online shopping and in-store purchase experiences blur, retailers count on technology to boost customer conversion through better CX.
- Digital ID is emerging as a critical success factor for enabling invisible payments as merchants work to reduce friction to pay.

Catalysts

- Digital ID is an essential invisible payments facilitator through seamless authentication and authorization.
- Customer conversion is the most critical RoI lever for retailers, and offering an integrated payments environment can reduce shopping cart abandonment.
- Embedding digital ID into payment solutions is becoming necessary as customers demand fewer touchpoints and want instant integrated data sharing from merchants via their mobile device, IoT device, or Card-on-File (COF).
- By implementing digital ID through customer identity and access management (CIAM), retailers and merchants can drive hyper-personalized offerings.

- Invisible payments are on pace to a mind-boggling 51% CAGR (2017—22) to reach a transactions' market value of USD78 billion.
 - Cashier-less, no-line checkouts delight shoppers, and background authentication eliminates friction.
 - The key benefits of invisible payments include reduced waiting time, cost optimization, and applicability to both online and offline transactions.
- Embedded digital ID functionality adds a different dimension to invisible payments.
 - Coop Norway, which operates grocery and non-grocery stores, launched 24/7 unstaffed shopping with secure ID solutions developed by its PSP, Aera.³³
- As industry associations and governments endorse digital ID-based payment solutions, demand grows.
 - Eftpos Payments Australia, the country's privately-run debit card payment system, will trial a massmarket digital identity service supported by the country's top banks and retailers.³⁴
- The digital identity solutions market size is projected to increase in value from USD13.7 billion (2019) to USD30.5 billion (2024).³⁵
 - Factors such as rising identity and authentication fraud increased biometrics integration into smartphones, and a greater focus on end-to-end CX is driving market growth.

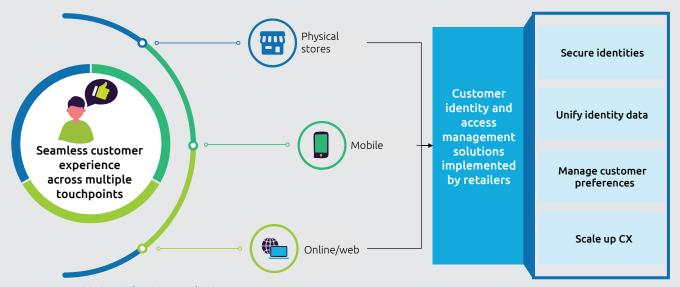
³³ Capgemini, "World Payments Report 2020," October 06, 2020.

³⁴ Finextra, "Eftpos Payments Australia to trial digital identity service," April 29, 2020.

³⁵ Globe Newswire, "The global digital identity solutions market size is projected to grow from USD13.7 billion in 2019 to USD30.5 billion by 2024, at a Compound Annual Growth Rate (CAGR) of 17.3% from 2019 to 2024," March 17, 2020.

- Savvy retailers can leverage digital ID solutions to make strategic decisions based on consumer data.
 - Digital identity enables retailers to compare, contrast, and combine buying habits data and cross-channel history, brands, and business units to maximize each customer's interaction value.
 - A customer's digital identity data can be analyzed and then leveraged by implementing a single-view-of-customer profile to ensure a consistent brand experience at each touchpoint.

Figure 5: Retailer interest in digital ID as a path to seamless CX is growing





- Retailers could reap significant benefits such as reduced shopping cart abandonment, improved CX, and value maximization at touchpoints.
- Digital ID apps can extend functionality, such as real-time telematic location identification and contextual commerce use cases.
- A combination of digital identity, mobility, and analytics can derive insights to offer value-added services and improve customer engagement.



COVID-19 is fast-tracking alternative payments adoption

Demand and preferences for digital payments were already high, and now COVID-19 is prompting demand for more speed, convenience, and superior CX.

Context



The global pandemic and lockdowns are transforming payment habits as consumers increasingly rely on digital transactions.

• Adopting alternative payments is growing for myriad reasons, including the convenience of not carrying cash, regulators' relentless push, and innovative solutions from industry players.

Catalysts



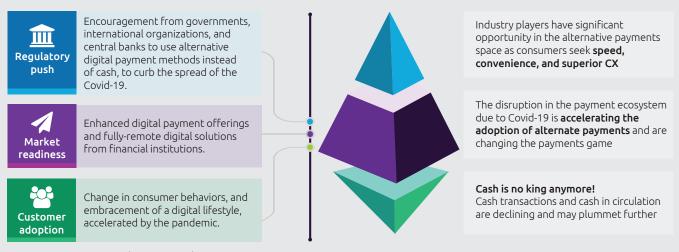
- The pandemic was a catalyst for governments and central banks to urge customers to use digital payments as an alternative to cash.
- It spurred significant consumer behavior changes, a shift from in-store to e-commerce shopping, and a preference for digital payment methods.
- Banks and financial institutions are augmenting digital payment offerings through fee waivers, increased card limits, and new payment solutions to drive adoption.

- Higher payment limits and fee waivers are fueling contactless payments adoption, spurring an
 expected 32% CAGR between 2020 and 2024, reaching nearly USD6 trillion in transaction value by
 2024.³⁶
 - Banks such as JPMorgan Chase are aggressively converting traditional cards to contactless.³⁷
- E-commerce is expected to be the next non-cash payments growth engine, as the shift to online buying/e-commerce becomes a long-term post-pandemic trend.³⁸
 - In support of the trend, e-commerce merchants are promoting alternative payment methods such as buy-now, pay-later, buy online, pick up in-store, and contactless checkout (e.g., SRC or Click to Pay).³⁹
- Digital/mobile wallets are experiencing stupendous growth and are set to be the online payment method of choice for e-commerce purchases by 2023.40
 - In India, digital wallet providers such as Paytm and PhonePe have seen a nearly 50% spike in transactions.⁴¹
 - Commonwealth Bank of Australia says the country's digital wallet spends rose 17% during Feb–Mar 2020 – triple the usual growth rate.⁴²
- Smartwatches and new vertical applications such as AR glasses are steering the wearable payments market to almost USD1.4 trillion for a nearly 22% CAGR (2020 to 2027).⁴³
- ³⁶ Yahoo Finance, "Contactless Payment Transactions to Reach \$6 trillion Globally by 2024, Fueled by Increased Card Use," February 11, 2020.
- ³⁷ Mobile payments today, "Contactless payments tripling by 2024," February 11, 2020.
- ³⁸ Capgemini, "World Payments Report 2020," October 06, 2020.
- ³⁹ NFCW, "EMVCo rebrands Secure Remote Commerce as Click to Pay," June 17, 2020.
- ⁴⁰ Businesswire, "Digital Wallets to Represent Half of Global eCommerce Sales by 2023," February 27, 2020.
- ⁴¹ LiveMint, "E-wallet transactions surge amid covid-19," August 6, 2020.
- 42 Which-50, "COVID-19 Measures Help Digital Wallet Transactions Surge Past \$1 Billion In March," April 9, 2020.
- ⁴³ Allied Market Research press release, "Wearable Payments Market to Garner \$1,373.54 Billion, Globally, By 2027 at 21.7% CAGR," August 13, 2020.



- Belgium's KBC bank will roll out wearable payments functionality to match customers' contactless lifestyle.⁴⁴
- Instant payments are on the rise globally, driven predominantly by Asia-Pacific markets.
 - In India, instant payments are on a 28% compound annual growth (2019–24) trajectory to reach nearly 53 billion transactions, as integration within mobile wallets drives quick adoption.⁴⁵
- E-money transactions are expected to play a pivotal role in the evolving alternative payments landscape, with a substantial 27% CAGR (2018–23), mostly driven by APAC, North America, and developed European markets.⁴⁶
- QR code-based payments will be a significant catalyst for the next growth story of non-cash payments.
 - QR code Payments' potential is evident in China, where offline scan-to-pay transactions have grown 15-fold from 2016, reaching 9.6 trillion yuan (EUR1.1 trillion) in Q4 2019.⁴⁷
- Countries around the world are adoption QR code-based payments, which are cost-effective and provide ease of implementation. For example, Saudi Arabia introduced an interoperable unified QR-based national payment system.
- The Central Bank of Brazil and the government of Ghana also introduced QR codes aimed at greater payments transparency.⁴⁸

Figure 6: Adoption of alternate payment methods will power non-cash payments





- Payments players are eyeing significant opportunities in the alternative payments space as consumers seek speed, convenience, and superior CX.
- Offering customers preferred digital payment methods unlocks new business opportunities for various industry players retailers, health care, Over the Top (OTT) providers, and utility companies.
- Cash is no longer king! COVID-19 greased the skids for cash-use decline while powering the shift to digital payments and cashless societies.

⁴⁴ Finextra, "KBC to roll out wearable payments to all customers," June 26, 2020.

⁴⁵ ACI Worldwide, "Global Payment Trends: Charting the growth of immediate payments," accessed September 2020.

⁴⁶ BIS Red book statistics, Capgemini analysis.

⁴⁷ South China Morning Post, "China's mobile payments to see rebound as offline vendors reopen after coronavirus lockdown," April 2, 2020.

⁴⁸ Finextra, "In the wake of COVID-19, QR codes are taking over the world. Will Visa and MasterCard survive?" April 17, 2020.

With an eye on expansion, tech giants augment payments offerings to attract new customers

BigTechs are steadily expanding their presence and fortifying their market share in payments as a gateway into broader financial services.⁴⁹

Context

- According to the World Payments Report 2020, 30% of consumers already use a BigTech for payment services.⁵⁰
- Payments are a gateway for BigTech firms to encroach further into the FS landscape. Their strategy has been one-stop-shop super/lifestyle apps, around which they have strengthened their ecosystems to get into the larger FS space (wealth management, insurance, lending, SME services, checking accounts).
- Incumbents' business and revenue models feel the heat from BigTechs' growing financial apps user base.

Catalysts

- BigTech firms Google and Facebook see payments as a foothold into market opportunities in large markets such as India and Brazil, and they are expanding with wallets and messenger-based payment apps.
- BigTechs are escalating their business through co-branding with established banks and financial institutions.
- With superior UX and the ability to process millions of bytes of customer data, BigTechs can quickly launch new products and successfully play the long game in payments' low-margin, high-volume environment.

- BigTechs' expanding user base is alarming established players.
 - In 2019, WeChat monthly active users (MAU) exceeded 1.15 billion users, as the daily average of WeChat payments increased by 76%, and the average daily number of users increased by 70%.⁵¹
 - Apple Pay is expected to serve 227 million users by 2020, compared with Google Pay's predicted 100 million users. Samsung is on track to grow from 51 million users in 2018 to 100 million users in 2020.⁵²
- In developing markets such as Brazil and India, BigTechs proliferate with the help of their payment apps.
 - WhatsApp Pay launched in India in June 2020, after two years of testing.⁵³
 - Facebook formed a separate group, Facebook Financials (F2), to build a digital wallet to hold Libra,
 Facebook's cryptocurrency, and drive WhatsApp Pay efforts in India and Brazil.⁵⁴



⁵⁰ Capgemini, "World Payments Report 2020," October 06, 2020.





⁵¹ Utopia, "Alipay & WeChat pay:all you need to know about smart payment in China," accessed October 2020.

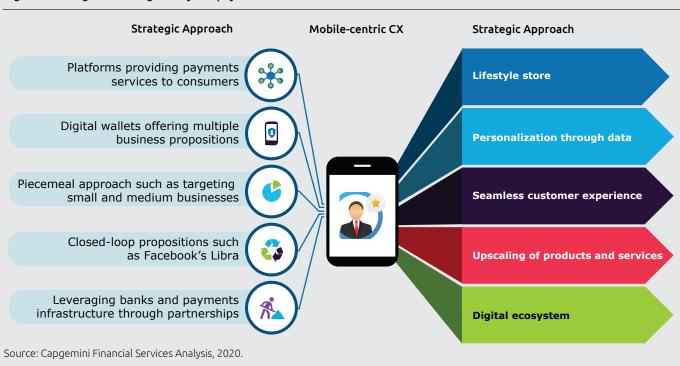
⁵² MSN, "Digital Wallet Users Could Double by 2020," November 14, 2019.

⁵³ Economic Times, "WhatsApp launches payments service, 2 yrs after it began testing in India," June 16, 2020.

⁵⁴ The Paypers, "Facebook forms a group to purse payments opportunities," August 13, 2020.

- Co-branding strategies are helping BigTechs to leverage the capabilities of traditional banks and incumbents.
 - Google is offering personal checking accounts through Google Pay, in partnership with Citi and Stanford Federal. Goldman Sachs has teamed up with Apple on a credit card. And JPMorgan Chase is working with Amazon, Lyft, and Airbnb to offer co-branded products.⁵⁵
 - In India, Google Pay launched NFC-based card payments in collaboration with Visa to compete with Apple's credit card. Partners include Axis Bank and Kotak Mahindra.⁵⁶
 - Samsung unveiled Samsung Money, a digital banking offering with a fee-free money management account and MasterCard debit card (in partnership with US-based SoFi, launched 2011). In the UK, Samsung is partnering with Curve to launch the Samsung Pay Card – providing a new payment solution for customers.⁵⁷
- Chinese firms Alipay and WeChat pay have entered new markets through partnering with major acquirers and payments service providers:
 - Alipay partnered with Bluecode, ePassi, momo pocket, Pagaqui, Pivo, and Vipps to adopt a unified QR code.
 - WeChat Pay partnered with Network International, an acquirer of UAE merchants.
- While BigTechs have the scale and size to expand reach and stifle competition, other industry trends are altering overall market dynamics.
 - The global card schemes, Visa and Mastercard, are building capabilities in the areas of financial infrastructure and data sharing (networks) inorganically, i.e., through acquisitions.
 - Mastercard acquired Transfast (2019), Vocalink and Nets (2016 and 2019), and Finicity (2019).
 - Visa's acquisitions of Earthport (2018–19) and Plaid (2019).
- In 2019 payment service providers such as FIS, Fiserv, Global Payments, and Worldline acquired World Pay, First Data, TSYS, and Ingenico, respectively, to boost their processing capabilities, market reach, and revenue models.

Figure 7: Tech giants set sights beyond payments to maintain a foothold



⁵⁵ Reuters, "Google Pay to offer checking accounts through Citi, Stanford Federal," November 13, 2019.





⁵⁶ Pocket-lint, "A Google Pay debit card is on the way," April 20, 2020.

⁵⁷ Fintech Futures, "Samsung chooses Curve to power its new Samsung Pay Card in UK," June 25, 2020.



- With the latest anti-trust initiatives against BigTechs in the United States, it is highly probable that these firms will soon face more regulatory scrutiny.
 - The European Union is planning to force BigTechs to share their customer data with smaller rivals.58
- The results of these anti-trust trials remain to be seen. But, as BigTechs often surprise the market with strategic cunning, their counter moves will be interesting to track.
- As BigTechs start penetrating other market and customer segments (e.g., B2B payments), competition intensifies for incumbents, as customer experience is the unique selling proposition.
 - Banks are embracing the rise of pan-regional schemes such as the European Payments Initiative (EPI) as a counter-competition measure against the duopoly of BigTechs and card schemes.



⁵⁸ The Paypers, "EU to force bigtech companies to share data: FT," September 30, 2020.

Tech investment surges as payments firms augment transaction data security

Ensuring foolproof customer authentication and transaction security is a prerequisite for firms today, as payments transition to open infrastructure and digital payments continue to proliferate.

Context



As consumers embraced e-commerce and contactless digital payments during COVID-19, criminal activity avenues opened against unsuspecting users/merchants/payment firms during authentication and transaction authorization.

• Identity theft, chargebacks, account takeover, card-not-present, and triangulation fraud are surging exponentially as the pandemic crisis wears on.

Catalysts



- The proliferation of digital payments and the adoption of alternative payment methods can lead customers to trust third-parties and expose their financial data unwittingly.
- Certain regulatory measures are increasing exposure to fraud (e.g., contactless limit relax, government benefits). In the UK alone, fraud scams exploiting the crisis amounted to a loss of close to GBP1 million (USD1.29 million).⁵⁹
- Phishing attacks are also on the rise, as people are more prone to social engineering, resulting in a compromise of personal information.
- In the wake of the ongoing crisis, the financial services sector was the top target, with a 38% increase in cyberattacks against financial institutions.⁶⁰

- Criminals are exploiting vulnerabilities sparked by COVID-19 lockdowns, increasing cyber-attacks, money laundering (ML), and terrorist financing.
 - Ransomware attacks increased 148% in March 2020, over baseline levels in February 2020, according to a Carbon Black survey.⁶¹
 - Recently the Canada Revenue Agency suffered a major cyber heist in which hackers fraudulently acquired 9,000+ key account usernames and passwords.
- Investing in modern identity methods leveraging artificial intelligence and machine learning to spot suspicious activity is the preferred method for combating vulnerabilities, according to 85% of payments executives.⁶³

⁵⁹ Independent, "Coronavirus: Warning over rise of fraud scams exploiting outbreak as UK losses near £1m," March 20, 2020.

⁶⁰ Financial Stability Institute, BIS," Financial crime in times of Covid-19 – AML and cyber resilience measures," FSI Brief No 7, May 2020.

⁶¹ VMware Carbon Black, "Amid COVID-19, Global Orgs See a 148% Spike in Ransomware Attacks; Finance Industry Heavily Targeted," April 15, 2020

⁶² CBC, "CRA shuts down online services after thousands of accounts breached in cyberattacks," August 2020.

⁶³ Capgemini, "World Payments Report 2020," October 06, 2020.

- HSBC, JP Morgan Chase, Banco Santander, and Danske Bank are aggressively investing in AI/ML solutions and partnering with tech firms to bolster capabilities in anomalies' detection and fraud prevention.^{64,65}
- Paytm Payments Bank in India invested in Al-based security to safeguard users by instantly detecting suspicious transactions.⁶⁶
- Biometric authentication methods such as voice, face detection, and iris biometrics can help payment firms and merchants to distinguish fraudsters from legitimate customers during checkouts and payouts.
 - Models based on predictive and prescriptive analytics solutions, including virtual security agents and behavior-based authentication, are being developed to combat payments fraud.
 - BBVA has partnered with Nok Nok Labs to improve its mobile banking services' security and user experience through biometric authentication.⁶⁷
 - NatWest has launched a new biometric payment approval feature to authenticate payments using facial recognition and is developing behavioral biometrics technology for additional authentication.⁶⁸
 - National Payments Corp of India (NPCI) and the Unique Identification Authority of India (UIDAI)
 are testing payment authentication with facial recognition and iris biometrics for welfare scheme
 payouts.⁶⁹
- Network tokenization that replaces card numbers is increasingly incorporated by financial service firms.
 - Dutch bank ING and supermarket giant Albert Heijn plan a tokenized payments service for improving the security of online purchases.
 - New York-based Signature Bank launched digital payments platform, Signet, to enable its commercial clients to access blockchain-based, real-time payments.⁷¹
- Corporations are counting on their trusted banking partners to combat fraud. Therefore, banks are increasingly collaborating with FinTech firms in the area of B2B payments security.



⁶⁴ Towards Data Science, "Artificial Intelligence for Risk Reduction in Banking: Current Uses," January 16, 2020.

⁶⁵ PR Newswire, "ThetaRay Provides Banco Santander with an Anti-Money Laundering (AML) Solution for Correspondent Banking," June 3, 2020

⁶⁶ Outlook India, "Paytm Payments Bank unveils new AI-driven security measures," January 27, 2020.

⁶⁷ BBVA, "BBVA joins forces with Nok Nok Labs to boost the use of biometric authentication on its mobile banking services," January 14, 2020.

⁶⁸ Computer Weekly, "NatWest develops behavioural biometrics as additional authentication," June 15, 2020.

⁶⁹ Economic Times, "Facial recognition, Iris scans may be used for welfare scheme payouts," August 26, 2020.

⁷⁰ NFCW, "ING and Albert Heijn to pilot online payments service that tokenizes customers' bank account details," August 27, 2020.

⁷¹ <u>Business Wire</u>, "Signature Bank Launches Its Digital Payments Platform, Signet™, on the Fireblocks Network," June 23, 2020.

Figure 8a: Passive payment authentication methods using emerging technologies can bolster security

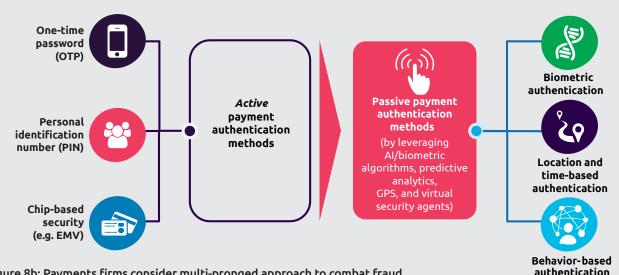
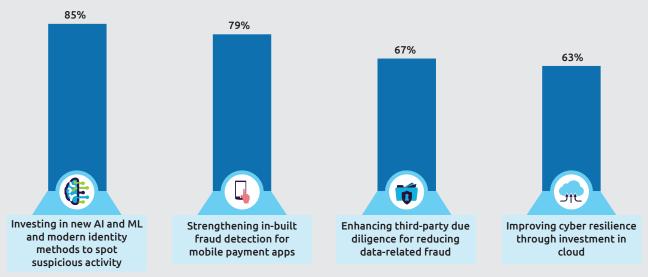


Figure 8b: Payments firms consider multi-pronged approach to combat fraud





- Payments industry players are keen on investing in emerging technologies such as AI, machine learning, biometrics, and tokenization for providing passive authentication and transaction security.
 - By 2024, online payment fraud is expected to increase by 130%. In response, payment players are prioritizing AI and money laundering solutions and will increase spending to USD10 billion in 2024 – a 15% increase from 2020.
- · As consumers continue to demand more security and, at the same time, increasingly frictionless checkouts, technologies will evolve to leverage additional passive authentication methods such a location, transaction time, and even predicted behavior.
- · Collaborative frameworks such as FIDO alliance that aim to address the issues of lack of interoperability and multiple standards in IoT devices are being embraced to remove any security leaks in the system.

⁷² Medium, "Machine Learning-based Digital Fraud Detection," June 5, 2020.

⁷³ The FIDO Alliance is an open industry association with a focused mission to develop authentication standards and to help reduce the world's over-reliance on passwords.

Regulators beef up scrutiny of new players and offerings as the ecosystem evolves

With the entry of new payments players and diverse offerings, the industry will become more complex, requiring regulators' attention to balance the growing market landscape.

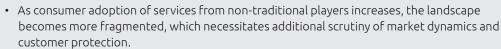
Context



According to the World Payments Report 2020, the industry is poised for double-digit growth over the next five years, presenting a massive opportunity for various players.⁷⁴

- FinTechs and BigTechs are creating a new wave of technology disruption in cashless payments as consumers increasingly adopt digital.
- Regulators are also embracing innovation from new-age and digital players through initiatives such as Open Banking and PSD2 in Europe.

Catalysts





- The recent Wirecard debacle exemplifies audit regulation and accounting enforcement gaps, especially for novice market participants and payment service providers.⁷⁵
- As the adoption of new firms grows, they emerge as major players in the system, thus transcending to become systemically important entities, with a new call to action for regulators.
- The trend is even more impactful as open banking gains traction across geographies, for example, Australia's phased (July–November 2020) open banking implementation and Brazil's open banking API launch slated for October 2021.^{76,77}

- As non-bank payments firms expand globally, regulators are refreshing existing rules to manage potential risks.
 - In September 2019, Australia appointed an external auditor to examine PayPal's compliance with the country's Anti-Money Laundering and Counter-Terrorism Financing Act. The audit is ongoing.⁷⁸
 - The European Commission began seeking public input in April 2020 in preparation for the launch of
 a digital finance strategy/FinTech action plan to set out the priorities over the next five years and
 the policy measures to be implemented to achieve these.⁷⁹

⁷⁴ Capgemini, "World Payments Report 2020," October 06, 2020.

⁷⁵ CNN, "Wirecard files for insolvency after ex-CEO arrested in \$2 billion scandal," June 25, 2020.

⁷⁶ Dentons, "Australian Government delays implementation of Open Banking," January 13, 2020.

⁷⁷ The Korea Herald, "S. Korea formally launches 'open banking' service," December 18, 2019.

⁷⁸ Finance Feeds, "AUSTRAC extends PayPal audit until Aug 31, 2020," March 2, 2020.

⁷⁹ European Commission, "FinTech action Plan," April 3, 2020.

- India's Reserve Bank of India introduced a new set of application criteria and operational guidelines to strengthen these entities' governance and functioning and bring them under its direct supervision.⁸⁰
- Firms that emerge as systemically essential entities merit an extra element of scrutiny as the current setup may not cover their entire operational range.
 - German regulator, BaFin, identified that Wirecard scrutiny was limited to its banking arm and not its core payments processing business.⁸¹
 - Singapore's Payment Services Act went into effect in January 2020 to regulate seven licensable payment services: account issuance, domestic money transfer, cross border money transfer, merchant acquisition, e-money issuance, digital payment token, and money-changing.⁸²
- To insulate consumers and merchants from any one provider's failure, regulators may require PSPs to offer contingency plans that include classification criteria for systemically essential payment providers.
 - While regulators bolster initial onboarding and licensing of firms, a gap remains in financial auditing and reporting, especially as firms scale in size.

Figure 9: Regulators called upon to scrutinize new players, secure systemic stability





- There was a likely mismanagement of nearly USD2 billion (EUR1.7 billion), which has a cascading effect
 on other areas of financial system, for example, the German exchange operator, Deutsche Börse,
 announced a series of reform proposals to revise the membership rules and improve the quality of
 companies that are listed in the blue-chip Dax index.⁸³
- According to the World Payments Report 2020, regulators are focusing on systemic risk reduction and standardization to avoid impending threats and risks to the growing ecosystem.
 - Ongoing developments such as the rise of local schemes and increasing risk create an impetus for collaborative frameworks to fortify risk management and ensure resilience.

⁸⁰ Economic Times, "RBI introduces new guidelines for non-bank payment aggregators," March 18, 2020.

⁸¹ Financial Times, "Lessons from a financial technology scandal," June 22, 2020.

⁸² Library of Congress, "Singapore: New Payment Services Act Takes Effect," April 17, 2020.

⁸³ Forbes, "Wirecard Was Germany's Fintech Star – Now \$2 Billion Is Missing And Its CEO Has Been Arrested," June 23, 2020.

Evolving regional payment schemes are poised to challenge the powerhouse status quo

As regional payment schemes gain ground, they may unify the fragmented landscape and compete with the majors and BigTechs.

Context

Geographically based payment schemes are designed to address payment fragmentation, global card scheme dominance, and BigTech threats.

- Regional payment schemes are becoming popular across the globe.
 - Consumers, merchants, and banks are enthusiastically accepting these payment alternatives because they address personal and regional needs.
- As more banks and regulators support regional schemes, long-time global players and newcomer tech giants face increasingly challenge-worthy competition.

Catalysts

- Regional governance that supports a single payments market such as the European Payments Initiative (EPI) limit external competition.
- Customers' personal information is comparatively safe because transaction and customer data remain within the country.
- Regional schemes have the agility to personalize products for the regional market, which often involves integrating with other domestic service providers to mitigate interoperability challenges among multiple solutions.

- The domestic schemes and switches trend began in Europe but is now becoming popular across other geographies.
- With support from the European Central Bank, 16 major banks from Belgium, France, Germany, the Netherlands, and Spain champion the pan-European payment standard promoted by EPI.⁸⁴
 - This European standard would process card payments and execute transfers, and instant- and mobile payments without using Visa or MasterCard networks.
 - The EPI plan, expected to become operational in 2022, includes a card, digital wallet, and peer-to-peer payments that challenge European BigTechs and card giants.
- Many domestic networks now process merchant transactions thanks to considerable support from central banks and government policies.
 - In China, UnionPay was established in association with major Chinese banks and is accepted in more than 26 million stores in more than 170 countries.⁸⁵



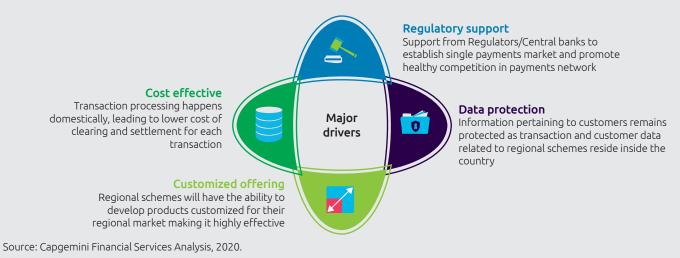


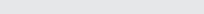
⁸⁴ BBVA, "Major Eurozone banks start the implementation phase of a new unified payment scheme and solution, the European Payment Initiative (EPI)," July 5, 2020.

⁸⁵ Union Pay International press release, "UnionPay's acceptance footprint extends to 174 countries and regions," January 21, 2019.

- The National Payments Corporation of India launched RuPay, which issues debit and credit cards, to reduce dependence on the global cards network.⁸⁶
- Domestic card networks such as MiR in Russia, InterSwitch/Verve in Nigeria, Girocard in Germany, and Nets in the Netherlands break from global payment network monopolies.
- Regional players are beginning to thwart competition from international schemes by providing extended processing functionalities and value-added services.
- Although domestic schemes offer low-cost services, less functionality can cause market share loss.
 - WeChat Pay and Chinese state-owned card scheme China UnionPay have integrated and unified their QR (Quick Response) code systems for mobile payments.
 - The European Mobile Payment Systems Association (EMPSA) was established to unify 11 mobile payment systems, uniting millions of mobile payment users, more than a million merchant acceptance points, and hundreds of European banks.
- Cross-border payments initiatives such as the ASEAN Payments Network (APN) aim to integrate realtime payment infrastructures across Malaysia, Thailand, Cambodia, and Singapore.
 - A cross-border payments platform between Thailand and Cambodia leveraging QR code technology is currently operational. The service is likely to be extended to Singapore and Myanmar by late 2020.⁸⁷
 - Singapore-based FinTech FOMO Pay partnered with Malaysia's OCBC Bank Berhad to develop mobile app OneCollect as its first merchant cross-border QR code collection service.⁸⁸

Figure 10: How are regional payment schemes gaining global ground







- Local and regional payment schemes will help supersede the fragmented payments landscape and subdue dominant global card schemes.
- Regional product right pricing is attractive to banks and payment service providers to offer to customers.
- Local and regional payment schemes will provide customers seamless, regionally-tailored, and unified solutions.

⁸⁶ ICICI bank, "Knowing the Difference Between Visa, MasterCard, RuPay and American Express Debit and Credit Card," November 7, 2019.

⁸⁷ Business Insider, "Thailand Cards and Payments Industry Report 2016-2024," August 26, 2020.

^{88 &}lt;u>Finews</u>, "Singapore Digital Payment Provider Expands Abroad," April 22, 2020.

Conclusion

In a year that demanded digitalization, regulators and payment firms diligently prioritized technology transformation for getting closer to their customers. Digital embracement to provide customercentricity was at the top of most payments executives' agendas and will remain a 2021 focal point. Banks are actively adopting a curate-and-collaborate approach to develop in-house capabilities by collaborating with agile players. COVID-19 was a catalyst to prioritize risk management as it triggered security awareness and safety efforts. A unified industry framework to combat fraud becomes the priority, especially in open networks.

Non-cash transaction continues its strong and steady forward march, as digital payments adoption among customers heightens. Growth is being driven by rapidly increasing smartphone penetration, a booming e-commerce segment, flourishing adoption of digital wallets, and innovations – primarily mobile—and QR-code payments.

For an industry that was already transitioning among several disruptive factors, COVID-19 accelerated the urgency for rapid change. Industry volatility, sluggish economic activity, and the ongoing crisis have debilitated the dynamics significantly. As pressure mounts to revisit business priorities, how will payments firms leverage 2020 lessons to react resiliently to 2021 uncertainties? Will the push to augment traditional models take shape in the months ahead?

Our 2020 lessons learned were to expect the unexpected and prepare to act swiftly to keep customers informed, engaged, and satisfied.

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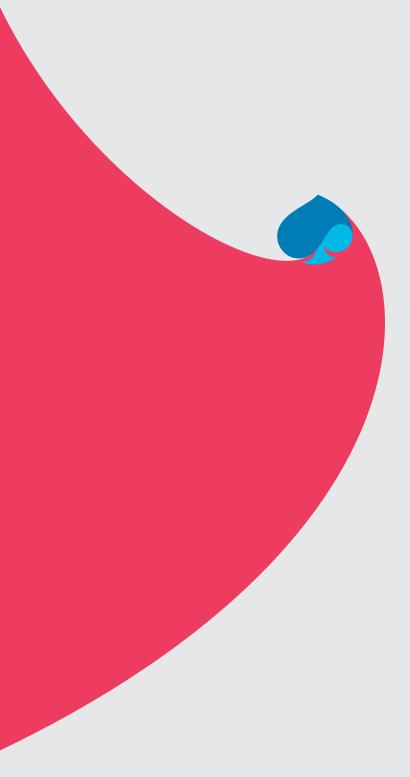
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