THE GLOBAL PAYMENTS REPORT
For Financial Institutions and Merchants

Powering the next payments frontier
2022
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What’s possible in payments continues to be redefined, revisited and reimagined. The traditional lines between banking, payments and commerce have all but dissolved. The rules that once limited who participates in money movement—and how that movement happens—have been rewritten. This connected world is creating new opportunities to shape the future of commerce and financial services.

Just as payments have changed, how we look at them in The Global Payments Report has, too.
In this enhanced seventh edition, you’ll get an in-depth view of how consumers pay when shopping online and at the point of sale in more than 40 markets, along with real-time payments insight from FIS® Flavors of Fast research.

You’ll also see what FIS experts think about the trends transforming the payments ecosystem, including:

- How super apps have transformed Asia and attracted tech giants who want to own a piece of the super-app pie
- What’s in store for merchants and financial institutions as crypto and central bank digital currencies continue to shake up the global financial landscape
- How the simplicity of embedded finance is changing the way customers find and use tools to manage their financial, business and personal lives
- What the fast-moving evolution of real-time payments means for consumers, corporates, businesses and financial institutions
- How financial technology is influencing financial inclusion in unexpected ways to improve access and opportunity
- Key developments transforming Europe’s payments landscape, and how it’s shifting commerce

As technology gets more sophisticated, the rate of change gains more momentum. That’s why we’re providing the insights and tools you need to superpower your business while we power the next payments frontier.
GLOBAL PAYMENT TRENDS

Powering the next payments frontier

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Business Finance Agency
admarkCapital.com
401 Ryland Street, Reno NV 89502
(775) 234-2006

business lending • payments services • customer financing
E-commerce

2021 witnessed strong global e-commerce growth of 14% YoY as the global economy – and the travel sector in particular – began to recover from early impacts of COVID-19, exceeding US$5.3 trillion in transaction value. The share of mobile commerce exceeded that of desktop e-commerce in 2021, with transaction value from mobile devices reaching 52% of all e-com spend. Global e-com projects 12% CAGR through 2025 when it will surpass US$8.3 trillion.
By 2025, e-com is expected to account for 12% of global consumer spend, with 59% of that e-com spend transacted via mobile devices. While e-com growth is expected to slow in APAC due to lingering COVID impact and market maturation, e-com will continue to grow dramatically in the LATAM (19% CAGR) and MEA regions (20% CAGR) through 2025.

E-commerce payment preferences continue to shift away from cash and credit cards towards digital wallets and buy now, pay later (BNPL). Contributing factors in credit cards’ declining share include the rise of alternative payment methods, volume shifting to credit- and debit-linked digital wallets, consumers opting for interest-free credit in the form of BNPL and credit-centric verticals like travel still recovering from pandemic impacts. Accounting for 21% in 2021, credit’s share of global e-com spend is projected to fall to 18.8% in 2025, though absolute value will rise to over US$1.56 trillion. Debit is projected to fall less dramatically, from 13.2% of e-com transaction value in 2021 to 12.9% in 2025, with absolute value rising to over US$1.07 trillion.

Digital wallets comprised 48.6% of e-commerce transaction value globally in 2021, or just over US$2.6 trillion. Wallets are projected to rise to 52.5% of transaction value in 2025. Growth will be driven by digital wallets offering superior checkout solutions, flexibility in underlying payment methods, their anchor role in e-com marketplace ecosystems and local wallets consolidating into regional and global super apps. APAC continues to set the pace in digital wallet use driven by the overwhelming popularity of Alipay and WeChat Pay; digital wallet’s share of APAC e-com is projected to rise from 68.5% in 2021 to 72.4% (over US$3.1 trillion) in 2025.

Bank transfers accounted for 7.4% of global e-com transaction value in 2021. Bank transfer global share projects to decline to 6.2% by 2025, while absolute growth will exceed US$516 billion. Global consumers continue to turn to bank transfer due to the strength of open banking initiatives, the growth of bank transfer-backed real-time payment apps such as Pix in Brazil, and innovations like the multi-payment functionality of bank transfer-backed payments application such as BLIK in Poland.

**The share of mobile commerce exceeded that of desktop e-commerce in 2021.**

BNPL is proliferating globally, accounting for 2.9% of global e-com transaction value in 2021 and projecting to 5.3% share by 2025. BNPL is led globally by Klarna, Afterpay (acquired by Square) and PayPal, with challengers such as Zip, Sezzle and dozens of smaller local competitors emerging to compete for this fast-growing payment segment.

**Point of sale**
POS acquiring rebounded strongly from COVID’s recessionary impact in 2021, as 13% YoY market growth surpassed 2019’s market size much sooner than expected. POS growth in 2021 was strongest in APAC at 15% and weakest in MEA at 6%. A sustained expansion of 6% CAGR is projected globally through 2025 with strongest growth in LATAM (8%) and APAC (7%); other global regions project to 5% CAGR. Global POS transaction values are projected to approach US$58.9 trillion by 2025.
Cash usage dropped sharply in 2020, driven by pandemic-induced business closures. While the trend continued in 2021, it was relatively minor. In markets such as Spain, Colombia and India, cash share even increased, though it remained well below pre-COVID levels. Cash continues to be a vital part of the POS mix, accounting for 17.9% of transaction value (over US$8.3 trillion) in 2021. The continued rapid
digitalization of the global economy will see the use of physical cash fall to 9.8% share in 2025, lowest in North America (5.6%) and APAC (7.7%), and highest in MEA (31.3%) and LATAM (23.6%).

Credit card use dropped in 2021 and debit share increased; however, card usage is increasingly shifting to pass-through mobile wallets. Credit cards accounted for 23.9% of global POS transaction value in 2021 – over US$11.1 trillion – led by a 40.2% share in North America. Credit’s share is projected to decrease to 22.4% by 2025 when it will represent over US$13.2 trillion. Debit cards increased spend share in 2021 to 22.7% globally, led by a 39.7% share in Europe. Debit cards are projecting to fall slightly to 22.3% in 2025.

Mobile wallet usage is increasing across markets, with further growth expected as contactless POS terminal penetration increases. Mobile wallets’ share of global POS transactions jumped over 21% YoY in 2021 rising to 28.6% of global POS transaction value, or over US$13.3 trillion. APAC continues to lead the way in mobile wallet adoption with 44.1% of 2021 POS transaction value; mobile wallets are expected to outpace all other POS payment methods combined in APAC by 2023. Globally mobile wallets are expected to rise to 38.6% share (over US$22.7 trillion) by 2025.

Local retailer and bank financing continues to be an important part of POS credit solutions, accounting for 3.9% of global POS transaction value in 2021, with slight declines to 3.4% share by 2025. While beginning to gain traction, BNPL solutions represented less than 1% of POS transaction value in 2021. Gains to 1.6% are projected for POS BNPL usage in 2025.
globally through 2025. European consumers have gravitated to BNPL solutions at the POS most, where a 1.9% share projects to rise to 2.8% by 2025. Finally, the market for prepaid cards remains viable, accounting for 2.2% of global POS transaction value in 2021, with a slight decline projected to 1.9% in 2021, or over US$1.12 trillion.

**Real-time payments**

Globally, real-time payments continue to grow with four more schemes – Russia, United Arab Emirates, Argentina and Colombia – joining the instant-payment club since 2020. Currently, 60 markets have a live, real-time payments infrastructure with Canada, Peru, New Zealand and Indonesia launching in 2022. This means that almost three-quarters of the world’s population (around 72%) have, or will soon have, access to instant payments.

Many markets are also replacing or renovating their established real-time services, especially those that repurposed their corporate real-time gross settlement (RTGS) services to cater for instant payments, such as Brazil, United Kingdom, Japan, South Africa and Mexico. Similarly, India and the U.S. are introducing additional competing services that will sit alongside the established schemes.

The need to innovate is central to real-time payments; the speed of clearing and settlement is only the first step. Real-time payments enable frictionless commerce where the entire payment process occurs seamlessly and immediately. But a modern, open payments system also provides opportunities to develop creative overlay services on top of the faster payment rails, built along modern open banking standards through API-based services.
Once touted as primarily focused on consumer and retail use cases, real-time payments are increasingly targeting business and corporate applications. Private firms have been quick to see how instant settlement changes their business models for salary payment, accounts payable, mandates for direct debits and bulk payments, especially in APAC and Europe. The public sector in many markets is also seizing the opportunity, with many government departments already utilizing real-time payments for fee and tax collection, and benefit and pension payout.

Once differentiating services such as request to pay, account aliases, e-invoicing, P2P, payee confirmation and payments at POS have now become commoditized and are available in most schemes. However, these root services are driving consumer, merchant and corporate adoption globally; real-time payments are cheaper, faster, more efficient and potentially lower risk means of moving money compared to traditional methods.

Some domestic schemes are also collaborating to enable cross-border, real-time international transactions and remittance payments. Southeast Asia has seen Thailand, Singapore and Malaysia piloting cross-border initiatives, along with Taiwan, India, Australia and Hong Kong. As schemes around the world move closer to standardization and interoperability to promote commerce, cross-border real-time payments could become as routine as domestic payments.
### Global e-com payment methods

<table>
<thead>
<tr>
<th>Method</th>
<th>2021</th>
<th>2025*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital/Mobile Wallet</td>
<td>49%</td>
<td>53%</td>
</tr>
<tr>
<td>Credit Card/Charge Card</td>
<td>21%</td>
<td>19%</td>
</tr>
<tr>
<td>Debit Card</td>
<td>13%</td>
<td>13%</td>
</tr>
<tr>
<td>Bank Transfer</td>
<td>7%</td>
<td>6%</td>
</tr>
<tr>
<td>Buy Now, Pay Later</td>
<td>3%</td>
<td>5%</td>
</tr>
<tr>
<td>Cash on Delivery</td>
<td>3%</td>
<td>1%</td>
</tr>
<tr>
<td>Direct Debit</td>
<td>1%</td>
<td>1%</td>
</tr>
<tr>
<td>PrePay</td>
<td>1%</td>
<td>1%</td>
</tr>
<tr>
<td>Other</td>
<td>1%</td>
<td>1%</td>
</tr>
<tr>
<td>Prepaid Card</td>
<td>1%</td>
<td>0%</td>
</tr>
<tr>
<td>PostPay</td>
<td>1%</td>
<td>0%</td>
</tr>
</tbody>
</table>

### Global POS payment methods

<table>
<thead>
<tr>
<th>Method</th>
<th>2021</th>
<th>2025*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital/Mobile Wallet</td>
<td>29%</td>
<td>39%</td>
</tr>
<tr>
<td>Credit Card/Charge Card</td>
<td>24%</td>
<td>22%</td>
</tr>
<tr>
<td>Debit Card</td>
<td>23%</td>
<td>22%</td>
</tr>
<tr>
<td>Cash</td>
<td>18%</td>
<td>10%</td>
</tr>
<tr>
<td>Retailer/Bank Financing</td>
<td>4%</td>
<td>3%</td>
</tr>
<tr>
<td>Prepaid Card</td>
<td>2%</td>
<td>2%</td>
</tr>
<tr>
<td>Buy Now, Pay Later</td>
<td>1%</td>
<td>2%</td>
</tr>
</tbody>
</table>

Numbers adjusted for rounding may impact totals.

*Forecasted*
The development of e-commerce in North America showed no signs of slowing in 2021. U.S. e-com transaction value grew 10% YoY in 2021, while Canadian e-com grew by 13%. Regional e-com expansion is projected to average 11% CAGR through 2025 to reach nearly US$2.3 trillion in annual transaction value. The trajectory of commerce is shifting decisively to e-com with an emphasis on mobile commerce.
Regional e-commerce growth projects to greater than twice the rate of POS growth through 2025 (11% versus 5% respectively), while m-commerce projects annual growth through 2025 (15%) at nearly twice the rate of desktop e-com (8%). In the U.S., mobile commerce as a share of e-com is projected to rise from nearly 37% in 2021 to over 42% by 2025.

Credit cards were the leading e-com payment method among both Canadian (50.4%) and U.S. consumers (30.2%) in 2021. Debit cards represented an additional 20.6% of regional e-com spend, accounting for 21% of U.S. and 13.4% of Canadian transaction value. Regionally, both credit and debit are projected to see slight declines in share through 2025. In the U.S, declining shares for both credit (to 27.4%) and debit (to 20.2%) are projected, though absolute transaction values will steadily rise for each. In Canada, credit cards will lose longstanding majority status in 2022, projected to decline to 42% by 2025. Debit projects a steady rise of more than 5% share through 2025 to nearly 19%.

Digital wallets continue to rise in popularity among North American e-com consumers, accounting for 29.2% of regional transaction value in 2021. Wallets will take the lead over credit cards in the U.S. in 2022 and are projected to account for nearly one third of regional e-com spend by 2025, led by Apple Pay, Amazon Pay, Google Pay and PayPal. Wallets are projected to remain second choice (behind credit cards) among Canadian consumers, with shares increasing from 21.8% in 2021 to over 24% in 2025. Leading wallets in Canada reflect the growing global reach of Chinese brands, with Alipay cited alongside Apple Pay and PayPal as most popular among consumers.

BNPL continued its dramatic global rise, more than doubling its share of North American e-com in 2021, jumping from 1.6% to 3.8% of transaction value. The growth of BNPL shows no signs of abating, projecting to more than double again to 8.5% of regional e-com transaction value by 2025. In Canada, brands including Afterpay, Flexiti, PayBright by Affirm and Splitit compete for a market projected to grow to nearly 7% share by 2025. Dozens of BNPL firms compete in the U.S. market that is projected to represent upwards of 9% share (nearly US$180 billion) by 2025, including Affirm, Afterpay, Klarna, PayPal Credit, Sezzle and Zip.

Bank transfer remains an important component of North American e-com payments with 7.8% of 2021 e-com share, projecting to fall to 6% share by 2025. PrePay (2.4% in 2021), COD (1.9%), prepaid cards (1.1%) and direct debit (0.8%) remain viable e-com payment methods, though are all projected to see declining shares through 2025.

**Point of sale**

North American commerce at the POS displayed resiliency in 2021, growing nearly 11% YoY to regain losses from the pandemic-driven recession of 2020. Canada POS expanded 15% YoY in 2021, with 3% CAGR projected through 2025. The U.S. posted 10% growth in 2021, projecting 5% CAGR projected for the next four years.
The use of cash continues to decline – to 11% of 2021 regional POS transaction value – though the decline was less dramatic than in 2020 due to the widespread re-opening of brick-and-mortar businesses. Cash accounted for 11.4% of POS value in the U.S. in 2021, down just slightly from 11.9% in 2020. The long-term decline of cash is projected to accelerate, declining by nearly half in 2025 to 5.8%. While cash rebounded slightly in Canada in 2021 to 5.7% share, the long-term decline will resume in 2022, projecting to fall to 3% of POS transaction value by 2025.

While use of physical cash is in decline, the global shift toward digital payments and alternative currencies has prompted interest in CBDCs in both Canada and the U.S. In July 2021 the Bank of Canada published a report outlining “The Positive Case for a CBDC.” In the U.S., the Federal Reserve “remains fully engaged in CBDC research and policy development.”

Cards are expected to retain the leading share of regional POS spend through 2025, while mobile wallets will increase sharply. Credit and debit cards retain over 70% of regional POS spend in 2021 (40.2% credit and 30.3% debit). While overall share of cards will decline only slightly, the gap between credit and debit will close considerably by 2025, with credit projected to nearly 36% and debit to just over 34%. Visa, Mastercard and American Express are the dominant schemes in the U.S. while Visa, Mastercard and Interac account for 97% of transaction value in Canada. Mobile wallets are projected to rise from 10.3% of 2021 regional POS spend to nearly 15% by 2025, with the vast majority of that increase taking place in the U.S.
Retailer and bank financing options represented a healthy 4% share of regional POS spend in 2021 that projects to maintain through 2025. BNPL is expected to continue increasing at POS as e-com players make the shift to in-store payments. Accounting for less than 1% of regional POS spend in 2021, BNPL projects to more than a 2% share (and over US$250 billion) by 2025. Prepaid cards continue to be an important part of the POS payment mix in North America with 3.7% share in 2021 with only a slight decline to 3.6% projected by 2025.

**BNPL is expected to continue increasing at POS as e-com players shift to in-store payments.**

**Real-time payments**
The U.S. now has two operational and complementary real-time payment services, with another in the pipeline. The Clearing House’s real-time scheme RTP® ensures that U.S. institutions of all sizes have access to its network, while competing scheme Zelle®, from Early Warning Services, offers a mature and highly popular P2P payments service. The Federal Reserve’s FedNow scheme is expected to go live within the next two years.

The Clearing House RTP network, launched in 2017, currently offers real-time payment capabilities to 57% of U.S. demand deposit accounts. With a push toward more advanced business, corporate and government agency services, RTP supports real-time bill payments with just-in-time settlement, and instant government payout and collection capabilities. Many insurance
and loan services utilize RTP for instant settlement, and same-day employee wages facilitate the growing gig economy.

Zelle is offered by a private financial services company owned by a group of U.S. banks. It enables individuals to electronically transfer money to another registered user’s bank account using a mobile device, or by way of a participating financial institution. Currently, Zelle processes around 3.3 million transactions per day (representing more than 50% annual growth), with more than $840 million in value transferred.

The U.S. Federal Reserve is developing a new real-time payments and settlement service called FedNow. Expected to launch in 2023, there will be a pilot program to support development, testing and adoption of the FedNow service, with expected participation from more than 110 financial institutions. In parallel, the Faster Payments Council is working with industry stakeholders to maximize the use of real-time payments domestically and internationally.

In 2022, Payments Canada is expected to launch its Real-time Payment Rail (RTR). RTR will support the development of overlay services as a platform for innovation for consumer, business and government payment applications through open APIs. To aid more rapid expansion of RTR usage, the government is exploring open banking standards to give customers greater control of their financial data and safe access to a wider range of financial services, while reducing costs.
### North America e-com payment methods

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<tr>
<th>Payment Method</th>
<th>2021</th>
<th>2025*</th>
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<tbody>
<tr>
<td>Credit Card/Charge Card</td>
<td>31%</td>
<td>28%</td>
</tr>
<tr>
<td>Digital/Mobile Wallet</td>
<td>29%</td>
<td>33%</td>
</tr>
<tr>
<td>Debit Card</td>
<td>21%</td>
<td>20%</td>
</tr>
<tr>
<td>Bank Transfer</td>
<td>8%</td>
<td>6%</td>
</tr>
<tr>
<td>Buy Now, Pay Later</td>
<td>4%</td>
<td>9%</td>
</tr>
<tr>
<td>PrePay</td>
<td>2%</td>
<td>2%</td>
</tr>
<tr>
<td>Cash on Delivery</td>
<td>2%</td>
<td>1%</td>
</tr>
<tr>
<td>Prepaid Card</td>
<td>1%</td>
<td>0%</td>
</tr>
<tr>
<td>Other</td>
<td>1%</td>
<td>1%</td>
</tr>
<tr>
<td>Direct Debit</td>
<td>1%</td>
<td>1%</td>
</tr>
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### North America POS payment methods

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<thead>
<tr>
<th>Payment Method</th>
<th>2021</th>
<th>2025*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credit Card/Charge Card</td>
<td>40%</td>
<td>36%</td>
</tr>
<tr>
<td>Debit Card</td>
<td>30%</td>
<td>34%</td>
</tr>
<tr>
<td>Cash</td>
<td>11%</td>
<td>6%</td>
</tr>
<tr>
<td>Digital/Mobile Wallet</td>
<td>10%</td>
<td>15%</td>
</tr>
<tr>
<td>Retailer/Bank Financing</td>
<td>4%</td>
<td>4%</td>
</tr>
<tr>
<td>Prepaid Card</td>
<td>4%</td>
<td>4%</td>
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Numbers adjusted for rounding may impact totals. *Forecasted
KEY INSIGHTS

Powering the next payments frontier
CRYPTOCURRENCY, CBDC AND THE FUTURE OF PAYMENTS

Bitcoin is the original cryptocurrency, released in 2008. While it’s still the most popular cryptocurrency, there are now thousands of other digital assets. There is no centralized payment service when cryptocurrency is involved. Depending on who you are in such a transaction and your motivation for using cryptocurrency, that could be viewed as positive or negative. Requiring no currency conversion, crypto has proven to be a means to move funds across the world in a matter of seconds, and for a fraction of the costs associated with traditional methods such as wire transfer.
Crypto trading, whether in the form of direct trading or futures, has become such a popular form of investing that some mainstream brokers are making it possible for users to buy and invest crypto within their platforms. With the aggregate market value of cryptocurrency exceeding $2 trillion, it’s not a passing trend.

**Contradictions in the global crypto response**

The role that cryptocurrencies will play in the future global economy, including what parts of the world will deem it legal and which will intervene to restrict cryptocurrency, has become nearly as unclear as the value that any volatile cryptocurrency will command. In September 2021, the People’s Bank of China (PBoC) said all cryptocurrency transactions are illegal. Financial institutions in Colombia are not allowed to facilitate Bitcoin transactions. Russia passed laws in July 2020 to regulate cryptos. The Central Bank of the Republic of Turkey issued a regulation banning cryptocurrency in April 2021. But the view is very different in other parts of the world. In October 2021, the United States Federal Reserve Chairman said he has “no intention” of banning cryptocurrency, but the Federal Reserve is extensively examining how to best regulate cryptocurrencies.

**At the same time, large merchants are increasingly moving toward cryptocurrency acceptance.**

In early 2021, PayPal announced that it would enable nearly 300 million consumers to use cryptocurrencies to buy from the platform’s merchants – without exposing sellers to currency risk. Venmo and Square Cash App now allow users to buy and/or sell crypto. Microsoft accepts it, Tesla has an on-and-off stance on crypto acceptance and Starbucks customers can use the Bakkt app to pay with converted Bitcoin. Visa recently announced plans for a hub that would accommodate multiple blockchain networks to improve crypto interoperability.

**Nabil Manji**, senior vice president and head of Crypto and Emerging Business at Worldpay from FIS expects that the momentum will continue. “Cryptocurrency users are becoming more comfortable with the technology that operates a cryptocurrency wallet, and some now have a significant amount of money in it that they would like to be able to use to transact. We’re seeing many large merchants, particularly in the United States, show interest in how they’ll accommodate that.”

**Cryptocurrency users are becoming more comfortable with the technology that operates a cryptocurrency wallet.**

**The rising role of central bank digital currency (CBDC)**

Whether driven by the desire to offer a competing yet stabilized form of digital currency, reclaim influence on monetary policy, rein in criminal activity, reduce payments friction, enhance payments security, improve inclusion or all of the above, the Bank for International Settlements reports that 86% of central banks are actively researching central bank digital currency (CBDC) as of 2021. CBDC is issued as a legal tender, like
Central banks are in the race to launch a fully functional CBDC because of various private cryptocurrencies. But much like real-time payments adoption, a country’s unique financial infrastructure, existing payment preferences, levels of access to them and involvement by regulators influences the speed of innovation and uptake of a new payment option. Yet, there are many potentially useful benefits CBDC could serve, including:

- A mechanism for new monetary policy tools and greater transmission of monetary policy for central bankers
- Enhanced financial stability, in the case of a black swan event
- Increased penetration of central bank money in the economy
- Greater innovation to the payments landscape with new features like programmable money
- Reduction of existing payment frictions, especially in wholesale and cross-border applications

Following China’s digital yuan live trial, Alibaba’s online grocery stores now allow some clients to pay using the digital currency, and some retailers are accepting digital yuan physically where the trials have been carried out. In certain regions of China, 21 million users have opened a virtual wallet and transacted up to US $5.3 billion, as of July 2021. The Bank of Japan has completed its digital yen trial, and Sweden’s phase one e-krona pilot is also complete. The Bahamas and Cambodia have issued their own quasi CBDCs.

How regulation will influence the digital currency future

Cryptocurrency, stablecoins, CBDC and non-fungible tokens (NFTs) are very different things, but ultimately, all are digital assets that could be used to exchange value. Through that lens, Aman Cheema, FIS senior vice president for Global Real-time Payments, Strategy and Innovation, says the real question is, “which of them have demand going forward?” Cryptocurrency may have been founded on the idea of decentralized and unregulated currency, but he predicts regulation will be exactly what influences which digital currencies reign supreme. “The world watches what China, the United States, Europe and the United Kingdom does. We’ve seen this before when new payments instruments have been introduced. There’s been uptake, and then regulation follows to make sure it doesn’t create any instability in the financial markets. This digital asset category will be no different.”

Regulators in some regions are grappling with how to handle cryptocurrency, in order to provide basic consumer protection and address instability of the financial system without hindering innovation. But Manji thinks the perceived guardrails and rate at which they do come into effect could be key enablers to more mainstream adoption if they relieve consumer and merchant concerns with cryptocurrency. At the same time, the regulation could also create space for central banks to accelerate their activities around CBDC. With regulation, a country may have more freedom to
focus on how to potentially complement their financial system, without having to necessarily solve the cryptocurrency issues they currently face.

**The domino effect on payments**

Regulation may determine how (or whether) consumers are able to use cryptocurrency and/or CBDC moving forward, but it will have a trickle-down effect throughout the value chain. The consumer side will likely lead the way, but that will act as a catalyst to the impact that has on institutions and businesses. “Institutions, much like consumers, are going to become familiar with the technology because they have to — either by market or regulatory forces. As a result of that, they’re probably going to realize the potential for other use cases within their business, whether it’s internal treasury management, cross-border payments or vendor payments,” says Manji.

Many governments and central banks that are considering CBDCs are also experimenting with different design and technology options. “Central banks, motivated by a decline in cash usage and the threat posed by cryptocurrencies, are seriously considering whether they should launch a digital version of cash. They are also looking at whether CBDCs can advance their economies and have societal benefits such as greater financial inclusion. CBDCs would give consumers and business greater choice to a new innovative format of money and would ensure that public access to central bank money is maintained,” says Cheema.
Super apps are the always-open front door to a new generation of immersive digital experiences. One that uses data, artificial intelligence and the cloud to give users a contextually relevant experience that spans well beyond a single need or purpose, whether that be making a payment or communicating with a friend. The rise of super apps raises competitive stakes for brand experiences everywhere. They’re shaping a new future of commerce that redefines how consumers shop, pay and connect with brands.
What makes an app super?
Super app is an umbrella term to describe combinations of popular digital services all housed within a single app. A super app provides a single entry point and user experience to access many services consumers expect – under one roof. From social interactions and shopping to delivery and ride hailing, banking and investing to budgeting and payments, super apps combine an ever-expanding range of services in a singular immersive experience.

Many super apps begin as digital wallets, search engines, messaging, taxi or even delivery services and then undergo an evolution by attaching different products and services. “The growth of a super app requires a balance between offering a strong localized version of the product, along with the ability to use that localized product globally,” says Phil Pomford, Worldpay from FIS senior vice president and general manager of Global E-commerce for APAC.

Once super apps build sufficient scale, they have the power to use their volumes of rich first-party data to create a comprehensive customer profile and experiment with new ways to transform and elevate the customer experience.

Asia’s super app leadership
Super apps first emerged in Asia as powerful disruptors and economic innovators, and the region remains the primary hub of super app leadership. The rise of super apps in China followed a development pattern that leveraged the best technologies of the time. Lacking legacy banking and payment infrastructure, growth in large APAC economies coincided with the widespread availability of inexpensive mobile technology. Hundreds of millions of consumers were coming online at once. Relatively few emerging APAC consumers had access to bank accounts or physical credit cards, but virtually all of them had a mobile phone.

For consumers in China, it’s becoming difficult to go through a typical day without using WeChat or Alipay. The same is true of Grab for consumers in Singapore, Gojek in Indonesia and KakaoTalk in South Korea.

For APAC consumers, a single app opens doors to virtually everything they need or want to do, from social media to payments, ride-hailing and gaming. Super apps are not just a glimpse into the future –
they’re the living future. From Paytm in India to Zalo in Vietnam, the world will continue to look to APAC for leadership in super app best practices. India’s proposed Consumer Protection (e-commerce) Rules, 2020 amendment could soon change super app strategies for Indian players, if rules around related parties, data sharing and cross-selling are impacted. Because the amendment would not allow e-commerce providers to sell their own goods on their own platform, for example, The Tata Group announced in September that it would postpone the launch of its planned super app until there is further clarity.

Super apps have also come to address critical financial inclusion. China’s COVID-19 tracking system, Health Code, was implemented as a mini program within WeChat and Alipay. The app was downloaded more than 50 million times within the first two weeks of release, reaching more than 90% of the population of Hangzhou, Zhejiang province.

**Payments anchor the experience**

Safe, reliable, consistent payments are the glue connecting super app experiences. Super apps use security best practices to authenticate users. Once safely inside the walled garden, payments are simple, secure and, in many cases, instant. Super apps are growing adept at leveraging trust with customers established through critical touchpoints like payments to broaden and deepen customer engagement and bring a growing share of their spend within their apps.

The role payments play in the growth and success of super apps is seen in the number of prominent super apps that started as payment tools: Alipay in China, Paytm and PhonePe in India, PayPal and Square’s Cash App in the U.S. Adding a native payment platform unlocks the “super” achievement for super apps such as Grab’s GrabPay and Gojek’s GoPay.

Super apps are innovation multipliers, helping open payments become more accessible and driving adoption beyond traditional acceptance networks. Payment innovations like QR codes have gained broad global acceptance in large part by the wide exposure offered by super apps. China-based UnionPay reports that 85% of their users paid via a QR code in 2020.

**The table stakes of financial super apps**

Once a super app gains the trust of the consumer to manage their payments, that brand may leverage the trust it has established toward adjacent services,
including traditional banking and functions like insurance and financing. Particularly now that it’s so easy to move money with nothing more than a mobile phone, Pomford says super apps bring about yet another form of serious competition to card rails. Financial institutions, neobanks, person-to-person (P2P) payment companies and even retailers could all find themselves caught in the crossfire of super app competition. “For retailers, keeping up with the pace of interaction with all the different payment methods in a super app requires a very different marketing approach. It’s not just the ‘set up and leave it’ like you do with a credit card network. You’ve got to work with various different tools, including data and information about your customers you didn’t necessarily know before, that could impact your approach these customers.”

For retailers, keeping up with the pace of interaction with all the different payment methods in a super app requires a very different marketing approach.

The unprecedented competitive advantages super apps offer has spurred U.S. and other technology and fintech firms to catch-up to their APAC counterparts. Amazon, Facebook, PayPal, Square and Walmart have all taken steps to morph their existing offerings into super apps. Yet, there are currently broad regional differences in the prevalence super apps play and, perhaps, the cultural comfort level that comes with relying on one app to handle so many parts of a user’s life. “People in the East tend to be very happy to have a single source for everything, but in the U.S. and Europe, that’s not necessarily the case. People also have data and privacy concerns that exist in the West that don’t exist at that level in the East. That may be one of the challenges that any super app faces in becoming truly global,” says Pomford. Whatever the future holds for super apps, competitive pressures are enormous as they push the industry toward bundling, consolidation and simplicity. These platforms are shaping the next frontier of commerce and payments.
Embedded finance is disrupting financial services by blurring traditional lines between financial and non-financial companies. Read on to learn how embedded finance is empowering businesses and consumers – and changing the strategic equation for financial institutions.
What is embedded finance?
Embedded finance involves banking and other financial services being placed in contexts other than financial institutions themselves. Embedding financial services breaks down the barriers that once guarded traditional banking by making financial services available to customers when and where they need them most. From e-commerce platforms to quick-serve restaurant apps, embedded finance puts tools that once required a trip to the bank within a single tap or click.

Embedded finance puts the banking experience into the same front end and same workflow and experience businesses use most.

Matt Collicoat, vice president of Strategy and Business Development for B2B at FIS, explains the impact embedded finance can have on a small business. “Consider a seller on an e-commerce marketplace who uses half a dozen tools every day – like banking, accounting and payroll – to operate their business. Now imagine all of those services in one central place – where they’re all most useful. Embedded finance puts the banking experience into the same front end and same workflow and experience businesses use most,” says Collicoat.

Embedded finance in action
Embedded finance is all around us, seamlessly blending into the flow of everyday consumer and business journeys. Embedded payments are most familiar to consumers, so much so that it’s easy to forget that they’re still in their infancy. Embedded payments make ordering coffee or breakfast via their favorite quick-serve restaurant effortless, their payment rendered virtually invisible in the background. From paying for cars, subway fares and scooters to groceries, take-out restaurants and weekly grocery shopping, embedded payments make once complex multi-party transactions instant and effortless.

In the same way, embedded finance makes banking processes faster, simpler and more convenient. If a business owner wants to pay a bill or a supplier, transfer money, manage payroll or apply for insurance, embedded finance enables all those functions to happen in one place. As importantly, the business owner gains one view of money coming in, payments going out and a single snapshot of cash flow. If there is a cash flow concern, the business owner knows immediately – and has options to address it. Through embedded finance, consumers can apply for bank account overdraft protection, obtain short-term financing or move money in from another account without disrupting their journey.

But Collicoat says that’s also the secret sauce embedded finance offers. Regardless of how the user wants to pay or send out an invoice, the underlying complexity should be mostly invisible to payer and payee. “The business owner doesn’t need to understand the complexities beneath the surface. They should be able to express what they want – and the embedded finance experience delivers. If they want to get paid as fast as possible, they’ll see only options that deliver that. If they want to get paid as cheaply as possible, they’d see only low or no-cost options. It’s about being able to let them make really
simple business decisions about how they want money to move in and out,” says Collicoat.

**Embedded finance is empowering brands**

There are many non-financial companies that want to make embedded finance part of their experience, with good reason. Consumers are embracing financial services offered by the businesses they trust most and that offer attractive combinations of service and convenience. By leveraging their brand equity and customer loyalty, companies across industries can deepen those relationships by offering payment and deposit accounts, and value-added services like insurance, credit cards and financial advising.

“We’re seeing more non-financial companies brand their financial services offering as their own. Rather than making the experience complex for the consumer by exposing that they’re actually working with several different companies, embedded finance keeps the complexity in the background,” says Collicoat. Also known as white label banking or banking as a service, embedded finance lowers what have historically been impenetrable barriers to entry for non-financial companies.

**Changing the competitive equation for financial institutions**

Embedded finance is empowering non-banks to boost revenues by delivering lucrative value-added services, reshaping the competitive landscape and opening new distribution channels for traditional financial institutions. For financial institutions, embedded finance demands a shift in thinking. While financial institutions will continue to own and operate their unique brands, and some customers will want to continue to work directly with them for some or all of their financial needs, embedded finance will begin to push some financial services toward commoditization. That’s the double-edged sword of embedded finance: it enables financial institutions to vastly expand their distribution channels but also invites entirely new classes of competition that displace the customer ownership that financial institutions have long enjoyed.

**Financial institutions still expecting all of their business to come to them directly will miss out.**

They have to be able to provide the services but also make their services available for others to sell. There’s a real marketplace there.

Embedded finance will serve as a catalyst that changes how banks, non-banks and technology partners collaborate. If a fintech company is building an app using Amazon Web Services and there is a workflow where the end user is offered the option to open a bank account, for example, the app developer may potentially turn to an API marketplace to plug in an “open bank account” module. As demand for embedded finance increases, partners that understand the risk appetite, goals and capabilities of both players could also play a critical facilitation role in establishing mutually beneficial arrangements between banks and technology companies.
Benefits of embedded finance

Consumers:
Embedded finance greatly expands financial services options for consumers, making the movement and management of money easier and more convenient. Consumers follow their own individual journeys without leaving traditional banks behind.

Financial institutions:
Embedded finance helps banks reach more customers with lower costs of acquisition, expanded distribution channels and the development of new value-added services, creating unprecedented opportunities of scale.

Non-financial brands:
Without bearing the burden of being a bank, businesses can leverage their ability to deliver financial services at a fraction of the costs of incumbent financial institutions, helping non-financial companies expand into adjacent services and increase lifetime customer value.
FURTHERING THE FUTURE OF FINANCIAL INCLUSION

Financial technology products and services are essential tools to promote inclusion in the financial systems of the future, helping communities around the world build long-term economic resilience and enable financial growth. Given the dynamic challenge of financial inclusion and its connectivity into many global social and economic goals, it is recognized as a target in eight of the 17 UN 2030 Sustainable Development Goals.
Financial inclusion includes efforts to make products and services accessible and affordable by removing barriers that prevent participation in the financial sector. In order to do so, technology plays an important role in overcoming historic barriers to the financial system with new digital and innovative ways of reach more consumers. In its High-Level Principles, the G20 Global Partnership for Financial Inclusion (GPFI) notes that digital financial services combined with effective supervision are an essential aspect to closing the gaps that remain.

While the COVID-19 pandemic created incredible hardships for people around the world, it also helped catalyze fintech-enabled digital solutions that play a critical role in improving access to financial products and services for underserved populations. Recognizing the need to limit physical contact and expedite the distribution of funds, nearly 60 low- and middle-income markets have used digital payments to deliver emergency relief since the pandemic began. Brazil, which has an estimated 34 million consumers outside of the formal financial system, used its recently launched real-time payments system, Pix, to help distribute COVID-19 relief funds. In that process, 70 million new accounts were opened – many by unbanked Brazilians.

Martin Boyd, FIS president for Fintech Solutions, explains that using technology to deliver financial capabilities that the underserved can easily access, engage with and already know how to use is key to improving financial inclusion through fintech. “No matter the capability it provides, the technology needs to be embedded into a process someone is already comfortable with, but that enables them to do something more. That’s fundamental to how you reach and spread your service to include people who can’t otherwise afford it,” says Boyd. This also requires understanding the full scope of the barriers that lead to exclusion – demographics, education, credit worthiness or location – and addressing them as part of the solution.

Financial inclusion entails far more than just payments. Improving access to the financial system for unbanked and underbanked populations around the world is the first step in achieving broader financial inclusion goals. The World Bank notes that access to transaction accounts is essential to financial inclusion, allowing people to store digital funds and exchange payments.
Beyond payments, consumers and businesses are seeking additional tools, such as access to credit and insurance, to help them achieve their overall professional and personal goals. That might entail building a new business, investing in their education and careers, or building wealth to help create a more sustainable financial future for their family and community. Supporting global efforts to improve access to financial tools and solutions will open new opportunities for fintech to continue building the innovative solutions of the future. In 2020, FIS developed a comprehensive framework for financial inclusion built on four pillars to help drive transformational and sustainable change for clients and communities. Solutions and services are at the forefront of that framework, as they, directly and indirectly, increase the accessibility and affordability of financial services for end users.

A rising tide lifts all boats
Financial inclusion disproportionately impacts markets with developing and emerging economies, but it’s a broad and multifaceted issue to which no market is immune. For example, countries such as Morocco, Vietnam, the Philippines and Mexico have large underbanked populations, yet approximately 13% of consumers in the United States also qualify as underbanked, and 5% are fully unbanked. Methods to promote financial inclusion are as varied as the populations themselves. For some, financial inclusion can be improved with more access to basic payment and money movement tools. In others, education that helps to overcome cultural obstacles like a lack of trust in modern financial infrastructure may be required.

For underbanked consumers who can’t access traditional credit, financial technology helps promote inclusion by offering alternatives to predatory lending products. Financial technology also provides tools that encourage users to save money incrementally, by automatically setting aside small change from each purchase, or even investing through the purchase of fractional shares. These types of services highlight the many ways fintech is making a positive impact in traditionally underserved communities.

On its own, fintech won’t be able to solve the complex challenges of poverty or inequality. However, it’s increasingly clear that it will play a central role in promoting a more inclusive future. The U.K. fintech charity Pennies, for example, allows users to donate a penny to charitable causes whenever they make a digital payment. Its chief executive officer, Alison Hutchinson, says the concept was inspired by the fact that the world was moving away from paying with cash, yet dropping change into a jar or box was how people were accustomed to donating. All those microdonations add up to make a real impact. “It all starts with the penny,” says Hutchinson. “If every banked adult in the U.K. donated the equivalent of a chocolate truffle once a week, that would be 10% of all the giving in the U.K. You springboard that onto a global scale and you could transform communities across the globe.”

Financial technology that promotes inclusion isn’t limited to moving money. It can also be a means to teach people how to use money in a way that positively supports their life long before they’re concerned with it. Louise Hill, co-founder and chief operating officer of GoHenry, a prepaid debit card
and financial education app for kids as young as six years old, is doing exactly that. “When it comes to financial education, the best way to learn is by doing in a real-life environment. This is where fintech comes in, particularly as the pandemic has accelerated the move to a cashless society,” says Hill.

**Tackling the next frontier of financial inclusion**

The United Nations Capital Development Fund (UNCDF) works to connect last-mile financial services to underserved individuals, businesses and municipalities in 39 countries around the world. For UNCDF, financial inclusion is a means to an end:

**Meaningful digital financial inclusion has to provide outlets for low-income account holders to engage in the economy in order to meet their daily needs and improve their skills, productivity and marketability in the digital-economy age.**

Financial technology continues to make great strides in positively influencing financial inclusion, particularly with increased mobile penetration and the accelerated adoption of digital and contactless payments. In the future, Boyd predicts we’ll see financial inclusion expand across even more channels, including connected devices like smart speakers and TVs, making it easier for people to access and manage their money.

By improving access to bank accounts, transactions, credit or even financial literacy content, fintech is providing a digital lifeline that’s closing the accessibility gap and fueling opportunity by enabling connections that transcend distance. It’s helping promote a sustainable future by providing broad access to the essential tools that individuals and businesses need every day to help power the next payments frontier.
Real-time payments have been a reality to financial industry insiders for nearly fifty years, beginning with Japan’s real-time payments system in the 1970s. It would take another several decades until markets like the United Kingdom, China and India would introduce their own real-time payment rails. But the momentum started to take off in the years that followed. When FIS published our first Flavors of Fast report in 2014, we counted 14 live faster payments schemes in the world.
By 2020, 56 markets were live with real-time payments. Since then, four more schemes have launched in Russia, United Arab Emirates (UAE), Argentina and Colombia. Now, up to 72% of the world has a live real-time payments infrastructure, or one soon to launch.

“More and more, we are moving into a real-time economy. Real-time payments have been the catalyst in actually creating the real-time economies we are starting to see implemented in markets like Europe,” says Bernd Richter, FIS senior vice president for the Global Real-time Payments Network in Europe.

The regional influence of real-time payments

The pandemic accelerated the use of real-time payments, but regional differences are significant. India led the world in the largest daily real-time payments volume in 2021 with 70.2 million, followed by China with 42.8 million. The U.K., which has had a real-time payments infrastructure since 2008, ranked fifth for daily real-time payments volume of 7.9 million. In the U.S., where real-time payments are still a fairly new concept outside of P2P use cases, Norm Marraccini, FIS senior vice president and group executive for Commercial and Retail Payments, thinks it may be another 12 to 18 months until consumers, merchants, corporates and financial institutions see their true potential.

For real-time payments to become truly global, says Marraccini, the many different schemes and real-time payment methods that currently exist eventually need to lead to a common way to accept and move money in real time. This past year has brought greater collaboration among regions, with the shared goal of increasing interoperability. In July 2021, P27 in the Nordics received the EU commission’s merger approval to start preparing to onboard customers. It is intended to create a future-proof, digital highway of sorts that will enable domestic and cross-border, multi-currency, real-time payments initially across Sweden, Denmark and Finland, with Norway considered later. Expected to facilitate economic growth and trade, it could serve as a blueprint of sorts for how other regions approach their real-time payments.

India led the world in the largest daily real-time payments volume in 2021 with 70.2 million, followed by China with 42.8 million.

In October 2021, EBA Clearing, SWIFT and The Clearing House completed a proof of concept as part of a new initiative, Immediate Cross-Border Payments (IXB). Using ISO 20022 messaging standards, it would synchronize settlement into one instant payment system with settlement in the other and convert real-time messages between both systems. There is no official timeline for next steps, but the move demonstrates how existing infrastructure could facilitate cost-effective, transparent and real-time cross-border payments. Aiming to launch sometime in 2022, according to Fortune, the European Payments Initiative (EPI) also seeks to create a new pan-European payments.
network intended to enable seamless in-store and online purchases, debit and credit payments and instant peer-to-peer money transfers.

**Overlays encouraging real-time use**

Government agencies are increasingly using real-time payments for pensions, benefits, fees and fines. In the U.S., APAC and EU regions, business/corporate use cases related to salary, accounts payable, mandates for direct debits and bulk payments are bringing high-volume/high-value payments into real time. Richter says companies are now realizing that real-time payments can change their business model, how they interact with companies and suppliers, and how they conduct business. “With real-time payments, a business can actually innovate and enter new markets to sell to customers they don’t sell to today,” says Richter. Consider an insurance policy company based in Europe that wants to serve customers in Asia, as an example. With real-time payments, the insurance firm can advertise ad-hoc insurance underwriting and activate the policy immediately, when receiving the activating premium payment for the policy as a real-time payment. Many insurance companies are also using the real-time rails for instant payout of approved claims, even globally where available, adding a competitive edge to their proposition – fueled by payment innovation.

Overlay services that sit atop real-time payments rails, like Request to Pay (R2P) and e-invoicing, are also stimulating new use cases and uptake by consumers, merchants and corporate customers. As a standardized financial messaging scheme that allows a payee to digitally initiate a payment request from a payor via bank channels or third-party fintech applications, R2P can be a cheaper, faster, more efficient and potentially lower risk means of moving money, compared to traditional methods. It enables straight-through processing of e-invoices and payments for corporates, and for merchants, could mean avoiding card interchange fees, reducing chargeback risk and expediting funds transfer. Depending on how the secure R2P messaging reaches the end user (which could be from a banking app or a third-party app), it could also be used to deepen customer relationships and add new revenue streams. When a customer’s R2P due date is near, for example, a bank could present the customer with new and/or flexible payment options like short-term installment loans, a business version of the BNPL wave that’s changing retail payments currently across the globe.

The role of real-time payments in commerce

Real-time payments are being used in e-commerce in some parts of the world, but Sri Kothur, general manager and head of Enterprise Payments at FIS, says it’s still very much in its infancy. Once they do become more commonly used globally online and at the point of sale, he expects they’ll be yet another payment type – not one that will displace other mechanisms. Ultimately, the role real-time payments play in commerce will depend on what it offers each specific party involved in the transaction.
“It’s tricky because there are different economics behind payments and each participant has their own desired outcome,” says Kothur. Artificial intelligence (AI) will play a crucial role in facilitating intelligent payment routing on the front end and resolving conflicting needs of all involved in a real-time payment transaction. “The payor can easily choose the payment type, and the payee can decide how to receive the money based on when they want funds to move and what they are willing to pay for that method,” says Marraccini.

BNPL has had a significant impact on banks, large merchants and card schemes, and real-time payments will play a similar role in continued payments innovation. “We’ve seen that BNPL is not just about payments. It was a way to get into the relationship and create a fantastic customer experience,” says Richter. The combination of open banking and real-time payments infrastructure will create new payment alternatives for customers, and new ways for merchants and corporates to accept payments. The payments innovation already underway will continue; real-time payments will help fuel growth and the redistribution of market shares and payment types.
ALL EYES ON EUROPE

As a historical leader in payments innovations, the European payments community continues to be home to many of the leading solutions on the cutting edge of global payments change. Home to 45 markets, each with its own unique mix of regulatory, demographic and economic variables, Europe is a wellspring of payments innovation. The intentional patchwork of diverse organic solutions in Europe is a microcosm of the global payments landscape.
As multiple payments solutions are causing simultaneous and overlapping disruption, Europe can be considered an early indicator of global payments trends. The remarkable growth of BNPL and the emerging importance of open banking and real-time payments are leading all eyes of the global payments community to Europe.

BNPL enters the mainstream
BNPL solutions found fertile ground in Europe, where they’ve grown in just a few short years from fringe upstart to the very center of the mainstream of contemporary global payments options. BNPL solutions accounted for over 8% of Europe’s regional e-com and nearly 2% of regional POS transaction value in 2021, each more than twice the value of the next highest regional BNPL tallies. The three top e-com markets for BNPL are all located in Europe, with BNPL as the leading e-com payments option in Sweden (25%) and among the leaders in Germany (20%) and Norway (18%).

“Consumers are clearly embracing the ease of use and flexible financing BNPL offers. Now it seems like every merchant is looking to offer BNPL to satisfy growing demand,” said Peter Wickes, FIS general manager, EMEA, Enterprise. “The bigger companies are prepared and may even welcome appropriate regulation, whereas smaller providers may find regulation burdensome. I think that’s when you may start to see some consolidation of those companies.”

Yet, the rush to share in BNPL success has created a market that’s increasingly saturated. “There are now so many companies that offer BNPL services, some form of consolidation in the market feels inevitable,” says Wickes. “Merchants need help to make decisions about the number of payment methods they actually need to offer. There’s no need to offer six BNPL options on their payments page when two will more than suffice.”

Another challenge for the biggest providers is how many countries they can expand to, and how quickly. “That may well supplement organic growth with acquisition of targeted competitors in local markets, where it’s going to take them one or two years to expand,” says Wickes.

Open banking’s heyday delayed, not necessarily denied
There’s a big focus on open banking in Europe and appropriately so given collaborative pan-European efforts including Open Banking Europe and PSD2.
the EU’s second Payment Services Directive, which seeks to increase security and stimulate competition among payment service providers.

“We haven’t seen a material movement toward open banking that many had predicted. Some of the open banking products and solutions can cause significant disruption in the market, not only from an e-commerce payments point of view, but also from a point-of-sale and omnichannel payments point of view,” says Wickes. Ultimately, the success or failure of open banking will come down to consumer choice, and whether consumers see open banking as a payment method that creates a positive experience and provides additional benefits that surpass other options.

**Getting real about real-time payments**

The European story on real-time payments is one of innovation and renovation. Europe continues to wholeheartedly embrace real-time payments. With over half of the world’s real-time payments enabled countries, it continues to be positioned as a global leader and center of excellence and innovation.

“I think you are going to see the availability of real-time payments becoming a requirement across the whole ecosystem – not just for real-time payments going out but also coming in,” says Wickes.

A decade ago, Europe led the world with instant clearing and settlement of payments. Today, the need to offer innovative overlay services on top of the real-time payment rails is obliging many of these early adopters to adapt once again. Europe’s center of gravity for real-time payments is the European Payment Council’s SEPA Instant Credit Transfer (SCT Inst). SCT Inst develops services including a request-to-pay service launched in 2021, as well as the
forthcoming availability of an API open gateway. API-focused architectures are fueling innovation and enabling a wealth of use cases, including e-invoicing, supply chain finance and trade finance.

All eyes are on Europe’s continuing innovation in real-time payments solutions. A decade ago, the UK Faster Payments scheme sent a strong message of modernization to the world, but the service is already being reviewed. Pay UK is planning a replacement with the New Payments Architecture (NPA). Further north, Project 27 (P27) aims to establish a single pan-Nordic payments infrastructure for the region’s 27 million inhabitants. This infrastructure will enable real-time payments over a secure platform between Denmark, Finland and Sweden, with Norway showing an increasing interest in joining.

“The card schemes and payments providers will need to react to the development and adoption of real-time payment rails. The major card schemes will need to improve the speed at which money passes to the acquirer and, ultimately, on to the merchant,” says Wickes. “The ability to transact instantly will evolve from innovative convenience to baseline expectation among consumers and merchants alike.”
MARKET GUIDES

Powering the next payments frontier
In 2021, U.S. consumer spending saw more than 10% YoY transaction value growth in both e-commerce and POS. Credit cards remained the leading e-commerce payment method with 30.2% share. While credit and debit will continue strong shares through 2025, the rise of digital wallets will culminate in 2022. With nearly 30% e-commerce share, they'll become the leading payment preference of U.S. consumers. Cards will retain their dominance at the POS, with credit and debit retaining more than two-thirds of POS share through 2025. Mobile wallets will continue their rapid ascent to exceed 15% by 2025, primarily at the expense of cash.

Real-time payments have been a reality since 2017 with The Clearing House’s service RTP, and Zelle, a P2P instant payment service from a private financial services company owned by several U.S. banks. RTP is more than just personal P2P payments; it also offers bill payments, government tax payments and payouts, insurance claim settlement, loan payments and same-day wages for the gig economy. Nearly 7,000 financial institutions are represented on the Zelle network, reaching over 100 million mobile app users. By 2023, an additional competing service from the Federal Reserve called FedNow is expected to launch.

### Fast Facts

**Market data**

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<th>2021 e-com sales as % commerce</th>
<th>2021 m-com sales as % e-com</th>
<th>2021* - 2025** e-com CAGR</th>
<th>2021* - 2025** POS CAGR</th>
<th>2025 e-com sales as %** commerce</th>
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**Real-time payments**

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<td><strong>RTP</strong> (Real-Time Payments)</td>
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**Overlay Services:**

Aliases through proxy using mobile number or email, request to pay to support e-invoice or e-billing, payment acknowledgments by receiver, request for information and response on payments, pay now or future-scheduled payments.
Did you know?
U.S. consumers are embracing BNPL options, propelling them to rapid growth in e-commerce and at the POS. Led by global brands such as Affirm, Afterpay, Klarna and Sezzle, dozens of BNPL entrants are competing for this lucrative market, with nearly 35% e-com and more than 50% POS CAGR projected through 2025.

2021 e-com mix by payment method

<table>
<thead>
<tr>
<th>Payment Method</th>
<th>2021 Mix</th>
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<tbody>
<tr>
<td>Credit/Charge Card</td>
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</tr>
<tr>
<td>Digital/Mobile Wallet</td>
<td>30%</td>
</tr>
<tr>
<td>Debit Card</td>
<td>21%</td>
</tr>
<tr>
<td>Bank Transfer</td>
<td>8%</td>
</tr>
<tr>
<td>Buy Now, Pay Later</td>
<td>4%</td>
</tr>
<tr>
<td>PrePay</td>
<td>3%</td>
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<td>Cash on Delivery</td>
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<tr>
<td>Prepaid Card</td>
<td>1%</td>
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<tr>
<td>Other</td>
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2021 point of sale mix by payment method

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<th>2021 Mix</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credit/Charge Card</td>
<td>40%</td>
</tr>
<tr>
<td>Debit Card</td>
<td>30%</td>
</tr>
<tr>
<td>Cash</td>
<td>11%</td>
</tr>
<tr>
<td>Digital/Mobile Wallet</td>
<td>11%</td>
</tr>
<tr>
<td>Prepaid Card</td>
<td>4%</td>
</tr>
<tr>
<td>Retailer/Bank Financing</td>
<td>4%</td>
</tr>
<tr>
<td>Buy Now, Pay Later</td>
<td>1%</td>
</tr>
</tbody>
</table>

POS and e-com projected growth

- US$9,441bn
- US$1,405bn
- US$889bn
- US$516bn
- US$11,428bn
- US$2,091bn

* Estimated  **Forecasted

Numbers adjusted for rounding may impact totals.
METHODOLOGY

Powering the next payments frontier
The enhanced seventh edition of The Global Payments Report offers a snapshot of the current payments landscape: globally, by region and in 41 select markets. The report tracks consumer payments when shopping online and at the point of sale, identifies key payment trends and projects scenarios through 2025 for payment method shares as well as market size. A series of thought leadership articles, with perspectives on current themes in the world of payments from FIS payments experts, complement our original research.

The online and offline payment worlds continue to converge. Serving the channel-agnostic needs of merchants and consumers starts with a holistic understanding of payments. Accordingly, this report expanded beyond e-commerce in 2018 to include analysis of payment methods used at the physical point of sale (POS). In 2022 we've opened a new chapter with the integration of real-time payments (RTP) data and analysis previously published in the FIS Flavors of Fast report.

For the eighth year in succession, FIS has singled out the emergence and continued growth of real-time payment systems around the world. Now folded into The Global Payments Report, we continue to track all markets offering real-time payment schemes, analyze the overlay services being offered on the real-time rails and keep an eye on the new launches and those still in development. This year, we count 60 markets offering real-time payments: 34 in Europe, 13 in Asia Pacific, seven in the Middle East and Africa, five in Latin America and one in North America. The number for Europe includes a total of 20 markets on the euro-region's SCT Inst scheme.

Real-time payments data is gathered from a variety of sources, often from the payment scheme operators themselves and central banks, but the depth of data varies greatly from market to market. From this core data set we then create content, highlighting global activity on real-time rails, and the growth and innovation that real-time payments are driving.

Gathering comparative statistics on real-time payments is challenged as only half of markets with active real-time payments publish reliable volume and value-transacted data. Statistics from many markets further lack standardization and transparency. Therefore, the review of real-time payments data is necessarily constrained by the data that is available; it does not always compare like with like.

The Global Payments Report continues to evolve based on market changes and reader feedback. In 2022, we’ve combined two payment methods, while dividing another.

“Credit cards” and “charge/deferred debit cards” – categorized in previous editions as distinct payment methods – are now combined into a single “credit/charge card” category for both e-com and POS verticals. Differing only in the way a consumer pays the balance, for purposes of this report going forward, the credit/charge card (or simply, “credit”) category is inclusive of traditional credit cards, charge cards and deferred debit cards. Recognizing the growing importance of BNPL, we’ve split the previous POS category “POS financing” into two component parts, retailer/bank financing and BNPL, in this enhanced seventh edition.

This report asserts our view of the market, based on internal expertise, our own research and third-party vendor data. The FIS Market Intelligence team compiles The Global Payments Report using data from a mixture of internal, third-party vendor and public data sources. This data is analyzed using the FIS proprietary data model and categorization scheme, developed in cooperation with a leading global management consultancy. The resulting data is rigorously tested and validated by external experts as well as FIS product and commercial teams.

E-commerce market size and forecast data is sourced from GlobalData’s E-Commerce Analytics database based on data updated at the end of Q3 2021; 2021 data cited in the report are therefore estimates for the year. GlobalData collected this information using consumer surveys, B2B surveys and desk research, and have also developed a proprietary forecasting model for e-commerce market size growth.

2021-2025 POS market sizes were calculated using McKinsey & Company macroeconomic data. Total POS market size through 2025 was forecasted based on available macroeconomic projections at the time of writing. All projections are subject to changes in world events, market dynamics and other forces over the period concerned (to 2025). Any indicative predictions based on the data we have used should be treated as such.

Actual shares of individual payment methods by country and region are calculated using the aforementioned data model. Our model contains a detailed breakdown of payment methods used when shopping online and at POS, based on GlobalData’s 2021 Financial Services Consumer Survey conducted online in Q1 and Q2 2021 among 52,742 consumers in 42 global markets.

Forecast breakdown by payment method for each region is calculated using historical percentage share growth trend (in CAGR) for e-commerce and the McKinsey Global Payments Map’s indicative trends for POS methods. This was supplemented by rigorous validation from FIS and external experts. McKinsey & Company continuously maintains its payments database from over 200 global sources, including public data, consumer surveys and local research team inputs. All market size data relate to the industry, not from direct FIS business.

Additional secondary sources for this report include data from local card, banking and payments associations; card scheme and payment providers; e-commerce industry reports and studies; news articles; and international organizations including The World Bank and International Monetary Fund. Card scheme figures were sourced from Euromonitor and GlobalData with further internal analysis, and these are representative of all payments including e-com and POS.
PAYMENT TERMS
Payment terms

Alternative payment methods (APMs)
“Alternative” refers to payment methods other than traditional payments – cash, credit cards or debit cards linked to one of the major card networks. Alternative payment methods include bank transfers, digital and mobile wallets, direct debit and BNPL. Alternative payment methods to cash and cards comprised 35% of 2021 POS spend, while “alternatives” to cash and cards are now a majority, approximately 63% of 2021 e-com transaction value.

E-commerce (e-com)
E-commerce includes online purchases of both goods and services such as purchases made on e-commerce websites and online booking of travel and accommodation. However, it does not include online purchases of motor vehicles, real estate, utility bill payments (such as water, heating, and electricity), mortgage payments, loans, credit card bills, or purchases of shares and bonds. Sales are attributed to the country in which the consumer is based and only include business-to-consumer e-commerce – not business-to-business sales. E-commerce also includes mobile commerce.

E-com CAGR/POS CAGR
Compound annual growth rate projections for e-com and POS transaction values respectively in a given market, projected 2021 through 2025. Global e-com transaction value CAGR for 2021 – 2025 is projected at 12%; global POS transaction value CAGR for 2021 – 2025 is projected to 6%.

E-com sales as % commerce
E-com transaction value as a percentage of all commerce. Global e-com sales represented ~10% of all commerce (e-com + POS) in 2021. Higher estimated growth rates for e-com relative to POS will see e-com sales as a percentage of all commerce rise to a projected 12% by 2025.

E-com turnover/transaction value
Estimates US$ sum of all consumer-involved transactions made online including those made via desktop, mobile devices and other ways to connect to the internet. Global e-com transaction value in 2021 was approximately US$5.4 trillion.

M-com sales as % e-com
Transaction value of purchases made via mobile devices as a percentage of all e-com transaction value. For the first time in 2021, a majority of e-com spend originated from mobile commerce that accounted for 52% of total e-com, or approximately US$2.8 trillion. Mobile’s faster growth projects to account for 59% of e-com transaction value by 2025.

Point of sale (POS)
All transactions that occur at the physical point of sale. Includes traditional in-store transactions as well as all face-to-face transactions regardless of where they take place. Global POS transaction value approached US$47 trillion in 2021. An estimated 6% CAGR for POS projects to US$59 trillion in 2025.

Payment methods
Bank transfer
Bank transfers allow consumers to pay merchants for purchases directly from their online bank account. Bank transfer payments are embedded in a wide variety of apps and online services such as Pix in Brazil, IDEAL in the Netherlands and BLIK in Poland. In 2021 bank transfers accounted for an estimated 7.4% of global e-com transaction value that is projected to surpass US$425 billion annually in 2022.

Buy now, pay later (BNPL)
BNPL services are payments allowing consumers to pay for goods and services, either through a one-time invoice or a finite set of installments. Popularized by global payment brands including Affirm, Afterpay and Klarna, BNPL accounted for nearly 3% of global e-com transaction value (~US$157 billion) in 2021.

The enhanced seventh edition of The Global Payments Report tracks BNPL at POS, a distinct category for the first time. Though accounting for slightly less than 1% (.8%) of 2021 transaction value, BNPL projects to double that global POS share to 1.6% by 2025, or upwards of US$940 billion in transaction value.

Cash
Once the undisputed leader in POS commerce, physical cash accounted for approximately 17.9% of POS transaction value in 2021. Cash is projected to continue to decline in use and is projected to fall slightly below 10% of POS
spend by 2025. Cash was used at the global POS for over US$8.3 trillion in 2021 transaction value, with cash transaction value expected to decrease to less than US$5.8 trillion by 2025.

**Cash on delivery (COD)**
Cash on delivery (COD) transactions feature goods ordered online and paid for with cash at the time of delivery. COD remains an important payment method by offering an essential link to e-commerce for unbanked consumers. COD accounted for 2.8% of global e-com transaction value in 2021.

**Credit/charge cards**
An anchor of consumer payments for over half a century, credit cards are issued by financial institutions affiliated with a global card brand network such as Mastercard, Visa, UnionPay, etc. Credit cards allow consumers to make purchases via an extension of credit from a financial institution. For the first time in this report, credit cards are combined with charge cards and deferred debit cards into a single category, "credit/charge cards." As credit cards, charge cards and deferred debit differ only in the cardholder payment terms, we've combined them into a single category.

In 2021, credit/charge cards represented 20.8% of global e-com transaction value (over US$1.1 trillion) and 23.9% of POS transaction value (US$11.15 trillion).

**Debit cards**
Debit cards allow consumers to purchase with funds directly debited from accounts held at their financial institution. Debit cards are issued by financial institutions affiliated with a global card brand network. In 2021, debit cards accounted for 13.2% of global e-com transaction value (over US$700 billion) and 22.7% of global POS transaction value (over US$10.6 trillion).

**Digital/mobile wallets**
Digital and mobile wallets allow consumers to securely store payment credentials to pay for purchases virtually everywhere commerce takes place: online, in-app or in-store. Wallets can be funded directly via cash, cards, bank transfer or other methods like cryptocurrencies, or wallets act as pass-through mechanism and are linked to cards or bank accounts. Popular wallets globally such as Alipay, Apple Pay, Google Pay, PayPal, Paytm and WeChat Pay are joined by hundreds of local and regional wallets to comprise this large and dynamic market segment. In 2021, digital and mobile wallets accounted for 48.6% of e-com (US$2.6 trillion) and 28.6% (US$13.3 trillion) of POS transaction value.

**Direct debit**
Direct debit is an e-commerce payment method where customers give a retailer permission to withdraw funds directly from their bank account on a specified date after the purchase. In 2021, direct debit accounted for 1.1% of global e-com transaction value.

**Others**
We continue to track other emerging payment methods—like mobile carrier billing and cryptocurrencies—that in 2021 combined to account for 0.8% of global e-com spend, or over US$41 billion.

**Retailer/bank financing**
Retailer/bank financing represents a mix of traditional extensions of credit to consumers at the point of sale. This includes credit offered by retailers, financial institutions and marketplaces, but excludes third-party BNPL services such as Klarna, Afterpay and Affirm that are tracked separately. New to our analysis as a distinct category this year, retailer/bank financing accounted for nearly 4% of global POS transaction value in 2021, or slightly over US$1.8 trillion. Previous editions of The Global Payments Report aggregated retailer/bank financing and BNPL at POS into a single category “POS financing.”

**PostPay**
PostPay allows consumers to order products and pay for them in full later at an affiliated physical store or ATM. Although PostPay services represent only 0.6% of e-commerce transactions globally, led by Boleto Bancário in Brazil, PostPay accounts for approximately 7% of LATAM e-com transaction value. PostPay thrives in Japan where payments made at Konbini stores represent 9% of e-com spend.

**Prepaid card**
Prepaid cards are issued by financial institutions that run scheme networks such as Visa and Mastercard. Prepaid cards can be funded one time or be reloaded, and they can be used to make purchases as easily as debit or credit cards. Prepaid cards accounted for less than 1% (0.6%) of e-com and approximately 2.2% of POS transactions in 2021, or approximately US$1.04 trillion.
PrePay

PrePay services help consumers make e-commerce purchases without a card account and without providing personal data. Services such as Paysafecard and Neosurf offer flexible payments via vouchers redeemable at participating merchants. PrePay methods accounted for slightly more than 1% of global e-com transaction value in 2021.

Real-time payments

Account alias and proxy

Many real-time schemes give users multiple options for identifying the recipient of a payment. Of course, all services allow payees to enter the bank account number (IBAN) of the recipient, but to make the services more convenient, other unique identifiers can be used including mobile phone number, email address, national identity number, etc. All participants must register for the service to use the proxy identifier that is centrally mapped to a destination bank account with a proxy addressing service.

E-invoicing

Electronic invoicing (e-invoicing) is the exchange of a bill and payment details between a supplier and a buyer in electronic format. This means that the invoice is issued, transmitted and received in a structured electronic format which allows for its automatic and electronic processing. Some solutions combine e-invoicing with payment – meaning that the e-invoice is integrated with a payment instrument. This service is often provided to the supplier by either a bank or a service provider and allows the supplier to send out the e-invoice to the buyer’s internet banking environment, a suitable digital wallet or another application. The buyer checks the invoice and can initiate the payment – via credit transfer, direct debit or card payment – without having to type in the payment data as the e-invoice already contains everything that the buyer needs to make the payment.

E-mandates

E-mandates are increasingly part of real-time payment services whereby billers establish an e-mandate notification to customers for subsequent review and pre-authorization of direct debit.

QR codes

The use of QR codes to initiate real-time payments is a growing phenomenon and provides both parties with a simple and quick way to accept and make payments. Standardized QR codes allow customers to make instant payments for goods and services from different funding sources (mobile wallets, cards, bank accounts) by scanning a quick response code on a smartphone to complete all the payment details, only requiring approval from the payee. These services are used in retail locations, but increasingly, QR codes are being used to simplify business and government payments driving more traffic on the real-time rails.

Real-time payment

We define a real-time payment as an inter-bank fully electronic payment system in which irrevocable funds are transferred from one bank account to another, and where confirmation back to the originator and receiver of the payment is available in one minute or less.

Remittances

Cross-border remittance payments – money sent to another party in a different country – increasingly use the real-time payment rails for clearing and settlement. Remittances from foreign-based workers represent one of the largest sources of income for people in low-income and developing nations, often exceeding direct investment and international development assistance.

Request to pay

A request to pay overlay service will allow any business or individual wishing to receive a payment to send an electronic request for that payment to the debtor account. The request will be received by the payer – most likely via an electronic interface such as a mobile banking app – showing the requested amount and the due date. They will then be presented with a number of choices: 1. Pay in full 2. Pay part 3. Ask for an extension 4. Decline payment 5. Send a message. If the payer chooses to make a payment, the payee will be notified whether the payment is in part or in full and when it has been confirmed.

Scheme

A real-time scheme is a set of processes and systems that define the end-to-end payment process, from initiation to clearing and settlement. Each country will typically have a domestic scheme except for the eurozone countries which all centrally utilize the SCT Inst scheme.

Business Finance Agency
About FIS

FIS® is a leading provider of technology solutions for merchants, banks and capital markets firms globally. By applying our scale, deep expertise and data-driven insights, we are dedicated to our mission: Advancing the way the world pays, banks and invests™. We help our clients use technology in innovative ways to solve business-critical challenges and deliver superior experiences for their customers. Headquartered in Jacksonville, Florida, FIS ranks #241 on the 2021 Fortune 500 and is a member of Standard & Poor's 500® Index. To learn more, visit www.fisglobal.com. Follow FIS on Facebook, LinkedIn and Twitter (@FISGlobal).

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Worldpay from FIS® (NYSE:FIS) is a leading family of payments technology solutions that powers global commerce for merchants, banks and capital markets. Processing 75 billion transactions topping $9T for 20,000+ clients annually, Worldpay lifts economies and communities by connecting commerce across all geographies and sales channels. The company’s integrated technology platform offers a unified and comprehensive solution set to help clients run, grow and achieve more for their business.

For further inquiries, please contact MerchantSolutionsMarketResearch@fisglobal.com

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