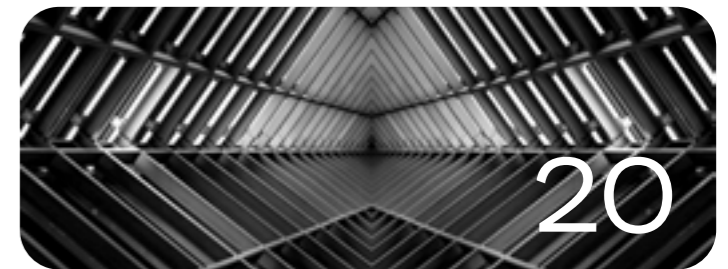
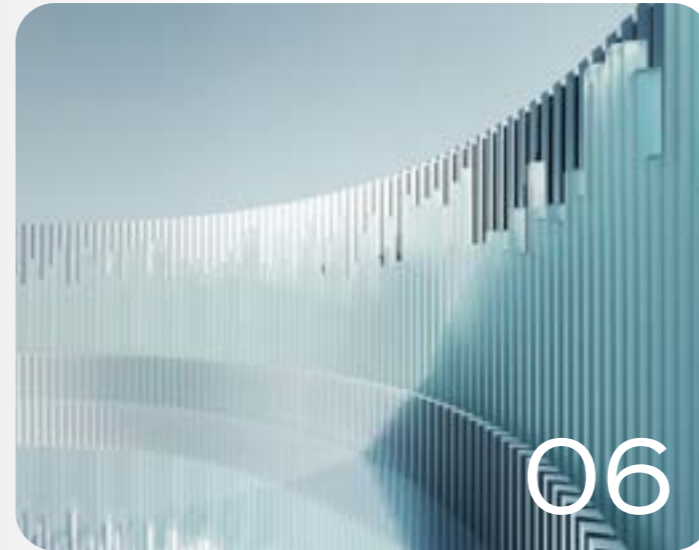




Connect India

Driving Treasury Innovation





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Foreword

A nation *ascendant*

India's scale, demographic dynamism and growth trajectory position it as a global economic powerhouse, poised to become a pivotal force in shaping the future world order.



India's remarkable *growth*

is fueled by strong fundamentals and strategic government initiatives, driving reforms in infrastructure, technology and financial inclusion.



Santosh Dujari
Head, Indian Subcontinent,
Treasury and Trade Solutions, Citi

The country's demographic sweet spot of a young median age and vast labor force, coupled with unrivaled digital public infrastructure and far-sighted policy-making, is strengthening its technology and services growth engine and propelling its ambition of becoming a manufacturing hub.

The country's strategic position in the evolving global supply chain landscape is bolstered by its rapidly transforming manufacturing sector. The government's "Make in India, for the World" initiative, alongside Production-Linked Incentives (PLIs) across key sectors including automotive, textiles, electronics, pharmaceuticals, food processing and specialty steel, is driving significant growth and attracting foreign investment. The success of the mobile phone ecosystem, where domestic assembly now dominates, exemplifies this transformation. This shift is further strengthened by India's focus on emerging industries such as renewable energy, electric vehicles and semiconductors. This diversification, combined with the country's vast domestic market and growing middle class, makes it an increasingly attractive destination for businesses seeking resilient and dynamic supply chain partners.

While India's rise as a key player in global supply chains presents significant opportunities, some

imperatives need to be enabled. Developing robust physical infrastructure to support increased manufacturing and logistics is crucial. Fostering skilled labor across diverse sectors will also be key to unlocking India's full potential.

At the core of India's transformation lies its unique open digital ecosystems, built on the foundation of the JAM trinity: Jan Dhan bank accounts, Aadhaar biometric IDs and widespread mobile penetration. This groundbreaking infrastructure has fostered financial inclusion on an unprecedented scale and paved the way for innovative solutions in payments, lending and e-commerce.

India's groundbreaking digital infrastructure is not only streamlining existing processes but also fostering the development of new-age business models. The India Stack, with its open APIs and digital public goods, empowers companies to leverage readily available data for innovative solutions. As businesses redefine their operations in India, and Indian companies expand globally in a tech-dominated world, their banking needs are evolving. Efficient liquidity management, innovative UI/UX design and technology-led solutions across payments and trade finance are essential for success.

Citi is committed to supporting businesses in India as they contribute to the nation's growth story and its

comprehensive suite of financial solutions empower businesses to capitalize on India's growth trajectory. Leveraging its deep local expertise and global network, Citi offers tailored solutions in treasury innovation, liquidity management, payments and trade finance. From optimizing cash flows through innovative pooling structures to navigating the complexities of cross-border transactions, Citi helps businesses unlock their full potential in India's dynamic market.

This is India's Time! And through this edition of *Connect India*, we provide insights into the country's economic and digital landscape, and the exciting opportunities it presents. It is our endeavour to partner and collaborate with you in supporting India's journey towards a more inclusive and digitally advanced future.

“

Groundbreaking infrastructure has fostered financial inclusion on an unprecedented scale and paved the way for innovative solutions.”



India's compelling macro story set for further growth

No other nation in recent years has combined a leading economic story with scale the way India has done. How will this momentum be maintained?

India offers one of the world's most alluring macroeconomic and demographic stories. India today is the fourth largest country by gross domestic product (GDP). That figure will likely be out of date in three years. By then it will almost certainly have overtaken Germany to be a projected \$7.5 trillion economy, behind only the US and China. Ten years ago it ranked tenth.

India has achieved this through consistent growth. In both FY2022–23 and FY2023–24, India logged more than 7% year-on-year growth – the only G20 nation to do so¹. “This gives us a lot of tailwinds as we move ahead into this decade – India's decade,” says Nikhil Patankar, Head of Corporate, Commercial and Public Sector Sales, Treasury and Trade Solutions, Citi India.

There are many other tailwinds. One is the China Plus One theme, which has shifted global supply chains to the benefit of many other nations, India certainly among them. India has become a hub for global capability centers (GCCs), with over 1,700 operational already. “India is the GCC capital of the world. Name any Fortune 500 company – if it has a GCC, it most likely will be in India,” Nikhil says. “It is creating so many jobs as well as foreign exchange (FX) earnings.”

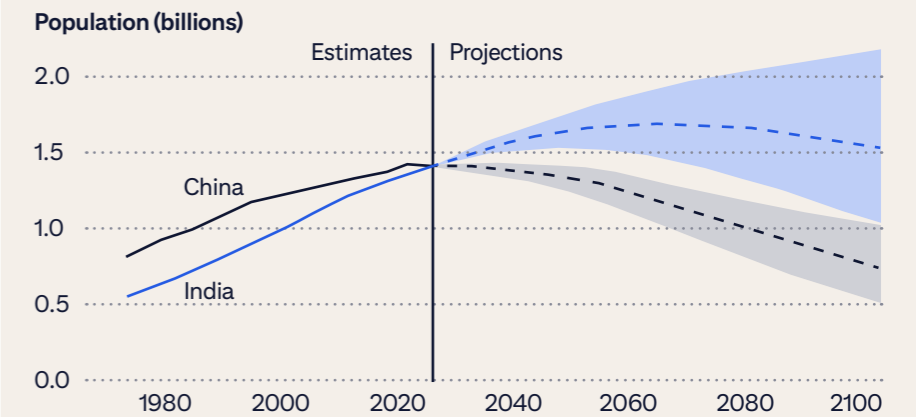
Another tailwind is IT, which has an extraordinary impact on exports that is perhaps little understood. IT-related exports from India today account for around \$250 billion – about the same figure as Saudi Arabia's crude petroleum exports².

India's *Make in India* strategy has helped to serve a vast domestic market, which insulated India from external shocks through the Covid pandemic and its aftermath. “The idea is that you can produce goods in India and don't need to necessarily take them out: there is a huge market sitting here to tap into,” Nikhil says. “One consistent theme is for more corporates to come here and start selling locally.” India's per capita GDP of around \$2,700 is at a pivotal point. “Historically, we have noticed that as countries break to a \$3,000–4,000 number, their consumption significantly starts increasing as people get that boost in their incomes,” he says. “That's a positive hope.”



One consistent theme is for more corporates to come here and start selling locally.”

Trends in total population for China and India, estimates for 1970–2022 and projections for 2023–2100 (with 95% predictions intervals)



Source: UNDESA Policy, 24.04.2023, brief no: 153, Sara Hertog, Patrick Gerland and John Wilmoth, UN DESA Population Division

Underpinning all of this is a fine demographic position. In 2023, India overtook China as the world's most populous nation, and by 2030³ it will have 1.5 billion people. For the moment, this is an asset, since India is in a demographic sweet spot with a median age below 30⁴. Its labor force,

just under 600 million, is second only to China worldwide⁵.

Linked to this is the growing urbanization of India. “It's a known fact that as people come into urban areas, their aspirations grow,” says Nikhil.



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A digital revolution

Later in this publication we will take a close look at one of the key differentiators for a resurgent India: the India Stack. This is an open-access digital infrastructure led by the state but open to the private sector.

“Even international agencies like the World Bank have called India Stack a game-changer for the country,” says Nikhil. “The entire infrastructure was made by the government for the public good, not for the profit of any one company.”

The stack is made up of a set of open APIs and digital public goods that aim to unlock the economic primitives of identity, data and payments at population scale, enabling payments, lending and e-commerce. The Aadhaar national

biometric ID card, which covers over 1.3 billion people, provides a method of identity confirmation and the open-source nature of the stack allows all financial services providers to reach those people.

This ecosystem has not only created an incredibly buoyant payments environment – India accounted for 48.5% of all digital payment transactions worldwide, according to a Reserve Bank of India report in August 2024 – but also a mechanism to drive financial inclusion, social equality and the enablement of people in rural areas, both customers and vendors.

Leveraging these, India aims to build an inclusive, \$1 trillion digital economy by 2027–28.

“

Even international agencies like the World Bank have called India Stack a game-changer.”



India accounted for

48.5%

of all digital transactions worldwide.

Source: Reserve Bank of India report in August 2024



Policy positions

India has been aided in its journey by consistent and progressive policy. The Modi administration won a third term in June, and continuity in policy can be expected.

This includes continuing to position India for growth through considerable effort on physical infrastructure – essential for such a large and high-population country. Prime Minister Narendra Modi has committed to spending 3.3% of GDP⁶ on infrastructure. Anyone who visits Mumbai today sees the difference,

from the metro system and the coastal road to bridges over the sea. India has the second largest road network, fourth largest rail network and third largest airport network in the world⁷.

Alongside this has come a program of legislative reform seeking to simplify tax and, at the corporate level in particular, to reduce it. “We are now almost at a par with some of the advanced Asian and Western countries,” says Nikhil.

“

We are now almost at a par with some of the advanced Asian and Western countries.”



Another government ambition is to bring manufacturing to 25% of GDP from 17% in 2023⁸, propelled mainly by the Production-Linked Incentive (PLI) granted to companies in 14 sectors including automotive, textiles and specialty steel.

Perhaps the clearest illustration of progress in manufacturing can be found in the mobile phone

ecosystem. “A few years back, India used to import more than 78% of its smartphones, with no local base,” Nikhil says. “Today, more than 99% of smartphones sold in India are assembled in India. Virtually the whole ecosystem has moved here.” Initially, older models were made in India; but now the newer model assembly has started in India just weeks after its launch in China.

Another push is in cross-border trade. India’s merchandise exports are targeted to grow to \$1 trillion by FY2030 from \$437 billion in FY2024. Free trade agreements help with this. So does liberalization in customs, where a single window scheme seeks to ease imports and exports. In light of the latest geopolitical and tariff related global developments, India is accelerating conversations around bilateral trade deals. It has signed trade pacts with important partners like the UK, the UAE and New Zealand, and is shortly expected to close pacts with the EU and the US.

Finally, limits on Foreign Direct Investment (FDI) are being eased, such as in insurance, telecoms, oil and gas, and aircraft maintenance. There is a stated aim to achieve \$100 billion of FDI per annum into the country.



\$1 trillion

target for India’s merchandise exports by FY2030



Today, more than 99% of smartphones sold in India are assembled in India.”



Emerging industries

Certain industries have been instrumental to the India story so far: pharmaceuticals, steel, automotive and IT. But what next? What sectors will help the country maintain its \$7.5 trillion economy target?

One clear area is the renewable energy space. India hopes to be the third largest renewable power in the world, with a target of 50% of energy derived from non-fossil fuel sources by 2030. Along the way it seeks green hydrogen capacity of five million tons⁹.

In a related field, electric vehicles represent a major focus. The EV30@30 initiative seeks to have 30% of new vehicle sales electric by 2030. India also hopes to boost its semiconductor industry, which was never previously a priority. In 2025 the first Made in India chip should be rolled out in Gujarat and the hope is to achieve an \$80 billion industry in the next five to seven years.

Another obvious source is e-commerce digitization and, within that, a subset called Q-commerce – for quick commerce. This segment involves swift delivery of ordered goods, perhaps within 10 to 20 minutes.

And finally, data centers and the cloud industry are expected to grow on the back of the Digital India initiative. The hope is to achieve an expansion to 3.29GW¹⁰ by 2028.

India’s achievements are already considerable. The ambition to build upon this foundation is equally compelling.

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3. UNDESA Policy, 24.04.2023, brief no: 153, Sara Hertog, Patrick Gerland and John Wilmoth, UN DESA Population Division www.un.org/development/desa/dpad/publication/un-desa-policy-brief-no-153-india-overtakes-china-as-the-worlds-most-populous-country

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The future of Indian trade in a *booming economy*

There are mighty national ambitions for manufacturing exports, with a policy environment designed to enable them. Technology, new methods of advancing credit and sustainability will all be relevant in the years ahead.

It is more than 10 years since the September 2014 launch of Prime Minister Narendra Modi’s “Make in India” initiative. In the time since then, the ambition has evolved from manufacturing for domestic consumption, to manufacturing for exports. Today, the mantra is Make in India, *Make for the world*.

Over that period, policy actions have sought to promote India as the preferred global manufacturing destination. An enabling framework has developed to make international companies comfortable in bringing foreign capital into the country to support manufacturing. Measures like these will underpin some striking

ambitions: in 2023 India’s Trade Ministry announced a target of \$2 trillion total exports annually¹ by 2030, requiring dramatic growth (total exports from April to November 2024 were \$536.25 billion²). Half of that \$2 trillion target is made up of services exports, meaning that the manufacturing side will have to grow from \$437 billion to \$1 trillion by 2030.

Mayank Gupta, Head – Trade and Working Capital Solutions, Asia South, Treasury and Trade Solutions, stresses how essential it is for manufacturing to grow as services have done. “All the engines have to work,” he says. “This is where the policy environment becomes pivotal.”



“As a country with strong diplomatic relationships with the US and Europe, India plays a strong role in gaining pre-eminence in the global supply chain.”

Domestically focused initiatives like the Production-Linked Incentive scheme now have a knock-on effect on exports. The clearest example of this is the handset ecosystem, and most specifically India’s role in handphone assembly: according to India Cellular and Electronics Association (ICEA), smartphone exports from India doubled to \$11.12 billion in FY2023³.


Part of the momentum for India’s export growth is geopolitical. Many global companies are seeking to reduce their reliance on a single country in their supply chains. India is one of the countries that stands to benefit from this strategy.

“As a country with strong diplomatic relationships with the US and Europe, India plays a strong role in gaining pre-eminence in the global supply chain,” says Mayank.

Mayank expects to see the most benefit for India in this context in the consumer durables, electronics

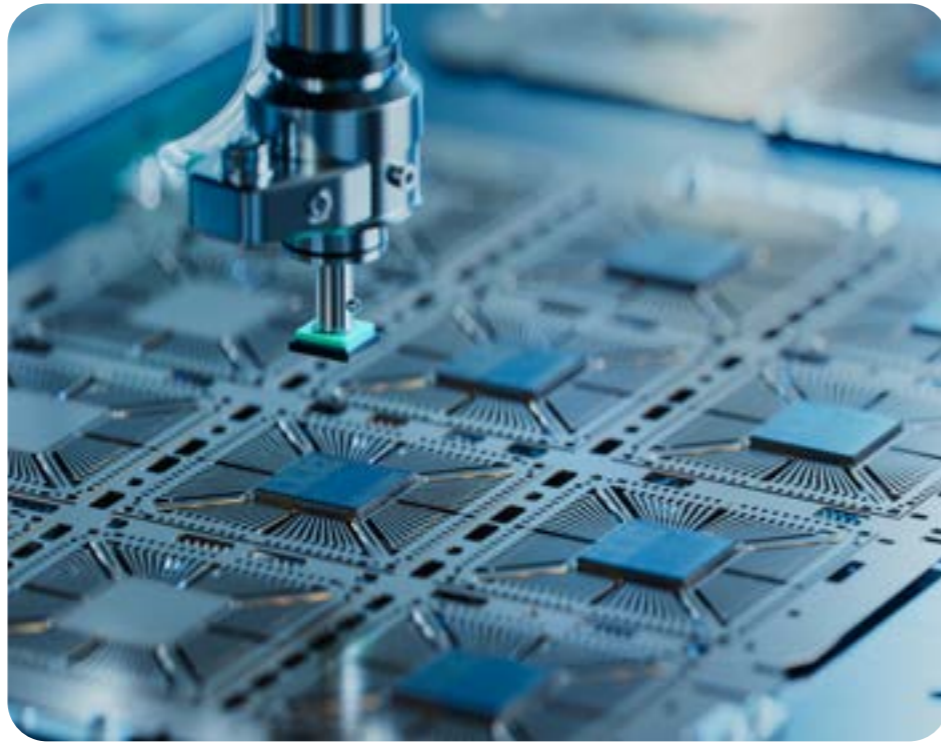
and automotive sectors. “It’s not just US capital that’s finding its way into the country,” he says. “Other players such as Taiwan, Korea and Japan are pumping in significant capital, especially in these areas.” Aman Singla, Head – Northern Region, India & Asia South, Treasury and Trade Solutions, adds that the government has tried to support India to move into high-value manufacturing sectors, often those where India aspires to be a dominant force, “attracting more and more FDI in the sectors where India was never traditionally known to be competitive.”

Through these trends, “India will be more tightly ingrained into global supply chains,” says Mayank. “And not just the electronics supply chain. It will be things like solar panels, EV batteries. The whole manufacturing ecosystem will be focused on these new age economy industries.”



\$11.12 billion
worth of smartphone exports were recorded from India in FY2023, doubling the previous year’s figure.³

Mayank considers these industries to be at an inflection point, heavily impacted by AI. “They may no longer be the people-intensive places they are today,” he says. “India continues to produce graduates as a young nation. You will find India moving to slightly higher value-added capabilities than they are today.” We can see this in action in business process outsourcing (BPO), which over 15 years has gone from basic call centers with people responding to service queries, through IT infrastructure to innovation labs, testing capabilities and R&D. All this will be reflected in the composition of international trade.



Inclusivity in trade growth

India hopes its growth ambitions can be realized in a way that is financially inclusive. This has led to momentum in areas such as alternative lending, embedded finance and blockchain mechanisms to try to broaden the reach of finance, particularly the availability of credit, which in turn should boost trade.

Aman expects considerable growth in alternative lending, such as peer-to-peer lending or crowdfunding, in the years ahead. The alternative lending market is expected to increase from \$7.53 billion in 2023 to \$18.24 billion by 2028⁴. Embedded finance, which integrates financial services into a non-financial platform, expects even greater growth – from a \$6.9 billion industry in 2024 (itself up 43.1% year-on-year) to \$34.3 billion by 2029, according to Research and Markets.

Methods like this can help to reach the micro, small and medium enterprises (MSME) sector, “which plays an extremely crucial role in the economy, accounting for 30% of GDP and employing over 100 million people. Yet more than 80% of

MSMEs do not receive credit⁵,” Aman explains. If banks cannot step up to this market, whether for reasons of collateral or lack of credit history, newer methods of lending will become more important.

This is where the momentum is. “In the Indian lending ecosystem over the last couple of years, all the asset growth that’s been happening has been driven by this micro, small and medium sector,” says Mayank. Citi itself does not directly target MSMEs, but as a large supply chain finance bank, it indirectly helps these companies gain access to money.

The development of India’s world-leading open-source digital infrastructure is also highly relevant to this market. In a separate article in this guide we look in detail at innovations such as the Open Credit Enablement Network (OCEN) and Account Aggregators, as well as the earlier development of the JAM trinity – Jan Dhan accounts, Aadhaar’s unique identity and mobile penetration.

India hopes its growth ambitions can be realized in a way that is financially inclusive.

MSMEs benefit in particular from OCEN. It can maximize their working capital for hassle-free business operations and increase their creditworthiness as they take on more loans, allowing them to serve bigger clients. It also gives them the resilience to survive periods of bad business due to supply chain disruption, for example.

Similarly, other Indian government initiatives support this segment. These include:

- the digitalization and financial inclusion that comes with the Digital India Initiative;
- Pradhan Mantri MUDRA Yojana (PMMY), which provides refinance support to MSMEs through alternative lenders;
- Stand-Up India, which promotes entrepreneurship among women and disadvantaged groups such as Scheduled Castes and Scheduled Tribes;
- the National Investment and Infrastructure Fund, which invests in alternative lending platforms; and
- the Fintech Sandbox Framework, which enables innovation and experimentation in fintech.



Can blockchain still transform trade?

For years there has been talk of distributed ledger technology transforming trade finance. So far it has been too complex, with too many actors for widespread commercial use despite convincing pilot projects. Mayank still calls blockchain in trade “an exciting space,” though he notes “one challenge has been the lack of industry standardization. There is little interoperability between different DLT networks.”

Citi has seen progress in closed ecosystems using digital ledger technology (DLT) on tokenized assets – notably in a project with the Panama Canal Authority to speed up the letter of credit processes required to transit the canal⁶. “There are going to be unique cases that make this interesting and we remain cautiously optimistic about the value blockchain can have for such ecosystems,” Mayank says.

Sustainability is an increasingly important element of trade. India has pledged to be a net zero economy by 2070⁷. There are plans to reduce its carbon intensity by 45% by 2030⁸, by which time renewables are expected to provide 500GW of capacity⁹.

In the trade realm, “when we go and speak to our clients, sustainability in trade finance has gone beyond giving incentives,” says Aman.



45%

reduction in carbon intensity is planned by 2030

Source: Ministry of Environment, Forest and Climate Change, December 22 2022

“Sustainability has become much more of a purpose for our clients: they are more concerned about what they are buying, from whom they are buying it and how it impacts their overall value chain.”

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2. India Brand Equity Foundation, “Indian Economy”, www.ibef.org/economy/indianapshot/facts-about-indian-economy
3. India Briefing from Dezan Shira & Associates, “Apple’s iPhone Exports from India Doubles in FY2023-24”, Archana Rao, April 22 2024 www.india-briefing.com/news/iphone-exports-size-doubles-india-us-key-importer-32102.html
4. See Globenewswire.com, “India Alternative Lending Business Intelligence Report 2024-2028” www.globenewswire.com/news-release/2024/10/23/2967539/0/en/India-Alternative-Lending-Business-Intelligence-Report-2024-2028-Product-Launches-and-Innovations-Strategic-Partnerships-Regulatory-Changes-Mergers-and-Acquisitions.html#:~:text=The%20alternative%20lending%20market%20in,a%20range%20of%20industry%20categories
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Rethinking liquidity

Focus on *efficiency, agility* and *resilience* for corporates

In the face of divergent regulatory conditions, increased globalization, a changing interest rate environment and the emergence of new business models, corporations are exploring seamless, efficient and sophisticated solutions for liquidity management.

As Indian companies become more global and expand into new markets, they need to deal with uncertainties resulting from changing macro and micro factors across the globe. Globalization has introduced several challenges and risks ranging from foreign exchange (FX) volatility and

liquidity constraints to managing ever-growing supply chains and working capital requirements.

“The treasuries that we see in India today are extremely evolved,” says Mahima Garg, Director & Head of Sales, West India. This is especially

true of Indian companies, which are becoming truly global.

“Managing their liquidity efficiently through re-engineered liquidity structures and creating operational efficiency in their cash flows amid a changing landscape is extremely important to them. Corporates need to perform the balancing act of managing group liquidity, working capital requirements and currency risk management.”

“Real-time is no longer a distant dream but an achievable reality,” Mahima says. “Treasurers are interested in platforms that provide not only real-time visibility but also an ability to move funds in real-time across locations.”

This shift to real-time is being propelled by the emergence of instant payment schemes across several key corridors. “A complement to this is the API technology that enables banks to share information with each other as well as with their customers to enable multibank target balancing and reporting, for example,” Mahima says.

Corporates seek a bank or financial institution that can provide advice on considerations across markets so they can plan appropriately for free movement of liquidity and the costs involved. Additionally, the global footprint of corporates means they need to navigate inherent interest rate volatility across markets, as well as geopolitical uncertainty and market risk.

Firms are keen on enhancing responsiveness to market factors and integrating liquidity and risk-management capabilities. Institutional expertise and experience across these markets and key international corridors, along with a breadth of technology-intensive capabilities, allows Citi to provide guidance on navigating challenges and simplifying operations.



Real-time is no longer a distant dream but an achievable reality.”



Liquidity in action

Citi has worked with several corporates in their liquidity management journeys through relevant structures based on their requirements.

Citi implemented a multi-entity, multi-bank pooling structure bringing together multiple legal entities for a large Indian engineering, procurement and construction (EPC) company. This allowed the company’s several business units, which are spread across the country, to anticipate their cash flow positions at the beginning of the day on the pooling platform. Based on this information, the central treasury can take decisions on composite cash flow levels and make investment decisions accordingly. This bespoke solution was built in collaboration with a fintech in India which provided the platform. This platform was then API-connected to several banks in India, enabling the real-time flow of information.

An international example is a pharma company seeking to harness internal funding to support growing operations and capital requirements. Citi is the in-house bank provider



65 accounts

across 23 countries, including India, were covered by a pooling structure created by Citi.

for this company, with a London-based 13-currency notional pool. Citi created a pooling structure covering 65 accounts across 23 countries, including India. This solution involves virtual account structures allowing pooling of funds across locations without the need for a physical account in every individual country. “It significantly reduces the overhead costs for them as well as the cost of moving funds across geographies,” Mahima explains.



Designing the perfect cash management solution for a client begins with identifying the needs of the client across markets. “In multi-country pooling, the nature of the challenges faced by the customers remains unchanged with respect to visibility, optimization of their liquidity positions across markets and a thorough understanding of their working capital positions,” Mahima says. “Establishing the optimum solution begins with answering a few key questions: What is the best location to set up? What is the most optimal return-generating pool structure?” Citi works closely with clients to arrive at answers – notional pool or physical pool, interest optimization, a combination of these, or something more complex and bespoke – and can help corporates implement a suitable structure based on needs and objectives.

Collaborating with fintechs is another key part of the strategy for enhancing customer experience and solving problem statements. Fintechs add agility in technical developments to banks’ payment and settlement infrastructure, cost-efficient funding and risk management frameworks.

“Collaboration between banks and fintechs is revolutionizing the entire financial landscape in this country,” says Mahima. “Banks like ours have been leveraging fintech technology expertise to enhance the services we take to our large customers.” Fintechs, in turn, benefit from the scale, capital, reach and extensive subject matter knowledge of banks. This has happened across multiple areas, from digital and mobile payments to wealth management and customer experience.

“

Collaboration between banks and fintechs is revolutionizing the entire financial landscape in this country.”

A major Indian fund house wanted an extensive yet customizable structure spanning over 1,000 accounts across banks. Citi collaborated with a fintech firm to implement a solution with scheme-level ring-fencing alongside multiple intra-day targeted sweeps to support efficient management of high-volume payments and collections through business days.

The solution enabled centralized, real-time fund mobilization and visibility while enhancing forecasting. It supported deployment of funds for investments and responsiveness to market conditions. Simultaneously, it simplified reporting by reducing manual intervention and associated errors in a highly regulated space.

Citi also invests directly in some fintechs working off India’s Digital Stack, discussed in a separate article. Fintechs might assist with validation services, for example, to check counterparties, augmented by the liquidity solutions that are provided by banks. Regulatory frameworks are also evolving to encourage this collaborative innovation.

GIFT City

Alongside more traditional avenues, any discussion of liquidity in India today must consider Gujarat International Finance Tec-City (GIFT City) and the International Financial Services Centre (IFSC) that resides within it. This is a special economic zone in Gujarat, established in 2015, with its own dedicated regulator and a mission to provide a world-class international financial hub in India, much like those in Dubai or Abu Dhabi. Backed closely by the Prime Minister’s Office of Narendra Modi, it is considered a crucial strategic initiative of the government.

The IFSC has seen considerable progress. Banking assets stood at \$70.93 billion in September 2024, according to the IFSC Authority, with transactions exceeding \$975 billion¹. In October the loan book stood at about \$60 billion, with most of the growth having taken place in the last two years. IFSC houses over 50 alternate investment funds with a corpus exceeding \$17.8 billion².

IFSC has been set up with a collaborative, can-do attitude. “Corporates and banks say their conversations with the regulators are focused upon practical enablers, often involving innovative solutions,” says Malika Juneja, Director of Trade. “That’s what has helped enable the growth at GIFT City.”

She sees increasing numbers of both global and local corporates setting up centralized global or regional treasury units here with numerous initiatives already underway or announced. “It’s increasingly part of our conversations,” Malika says. “We get queries from colleagues in other markets where clients are inquiring about optimizing revenue streams and pools of capital within India.”

IFSC is an especially significant development because the Indian rupee is not capital account convertible. Instead, India has a partially convertible capital account, with swaps between rupees and foreign currencies (in both directions) permitted for limited reasons and with regulatory approvals. This offers a more liberal environment for the internationalization of the rupee. The Reserve Bank of India, the central bank, sees IFSC as a key part of the pathway towards this liberalization.

“So, GIFT City provides a long-awaited opportunity for corporates to integrate their India liquidity as part of their global operations in a more effective manner,” Malika says. “That helps them enhance their liquidity positions, which helps them improve their cash management and reduce their transaction costs.” The zone also offers tax incentives though corporates from outside the financial services sector may need to establish subsidiary non-bank financial companies (NBFCs) to operate out of GIFT City.



\$17.8 billion

in corpus is managed by over 50 alternate investment funds housed at IFSC.

Source: See director of AIFs at the IFSC Authority: www.ifsc.gov.in/Directory/index/f63Yeymdl.html

As a development, the IFSC proposition is significant, both practically as well as emblematically. IFSC helps complement India’s growing economic status on global platforms. “Historically, capital flow has been a key consideration for institutional clients, whether from the perspective of enabling outward investments or repatriation of profits,” Malika says. “But with the growth that large global corporates expect in India in the next decade, the ability to have such an international financial center will play a pivotal role.”

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 2. See director of AIFs at the IFSC Authority: www.ifsc.gov.in/Directory/index/f63Yeymdl.html



Where India's digital ecosystem goes next

India's digital infrastructure has no peer worldwide. Nowhere else has attempted such comprehensive reach across its population, in a truly open and interoperable fashion, and with transformative results in payments, credit growth and financial inclusion. What are the latest innovations driving this success?

India Stack, the term defining the set of open APIs and digital public goods that aim to unlock economic potential, is a true game-changer. No other nation has embarked on an open-access revolution of this scale, addressing identity, payments, governance and commerce under a

single framework. Achieving it at such scale, with near universal penetration across the world's most populous country, renders it truly remarkable.

To understand this ecosystem, it is useful to think of Digital India through four pillars: payments,

e-commerce, lending and information services. Together, they form a network of open APIs rooted in principles of open source and interoperability, empowering people and businesses alike.

"India's approach is fundamentally unique," says Naman Kapoor, Head of Payments and Liquidity, India Subcontinent at Citi. "Unlike other countries where digital frameworks are often closed or proprietary, India has built an open ecosystem that fosters participation and innovation at every level."

Beyond convenience or economic growth, this digital ecosystem offers profound social impact, including greater financial and social inclusion – particularly in rural areas.

The foundation of India's digital journey lies in the JAM trinity:

J

Jan Dhan accounts, designed to provide universal access to banking services, achieved a record-breaking 18 million account openings in just one week. 530 million such accounts are active, as of August 2024.

A

Aadhaar, the world's largest biometric identification system, has issued unique IDs to 1.3 billion Indians.

M

Mobile penetration, with 650 million smartphone users and 850 million active internet users, has propelled digital growth to unprecedented heights.

The payments pillar

Collectively, this trinity has provided a platform for a transformation of the payments ecosystem. At its heart is the Unified Payments Interface (UPI), which facilitates peer-to-peer and person-to-merchant transactions on the same open principles. It's through UPI that India accounts for almost half of all global instant payment transactions. In FY24, there were 137 billion instant payments – up 53% year-on-year – with UPI payments now logging 15 billion per month.

Dramatic though these numbers are, they pale against government ambition: in August, the National Payments Corporation of India (NPCI), set a target of 100 billion transactions per month¹.

Over time there has been an evolution from the Jan Dhan current account to, for example, the RuPay credit card, while at the same time the eRupee – a Central Bank Digital Currency – has developed using distributed ledger technology to create a digital alternative to physical cash. The eRupee already has four million registered users in retail, and on the wholesale side serves as a settlement mechanism for the secondary market trading of government securities.

The next stage of the payments journey involves bringing credit into the mainstream. "One of the most exciting things to happen next in the digital ecosystem is the cross-linkage of credit and UPI," Naman says. "UPI is not just about payments – it's about creating a platform for future innovations."

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The information services ecosystem

The second pillar, information services, is crucial for enabling broader financial inclusion and transparency. Tools like DigiLocker (which stores 4.6 billion documents), Aadhaar-based eSign, and digital tax and invoicing systems simplify identity verification, compliance and record-keeping.

“The availability of authenticated, digital records transforms how businesses and individuals access

credit and services,” says Naman. “This open, secure infrastructure ensures that even the unbanked can participate in the formal economy.”

The effect of all this digitally available information is that it transforms verification, such as the eKYC (electronic know your customers) requirements of banks or fintechs, and seamlessly integrates credit, providing financial inclusion and a mechanism for economic growth.



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4.6 billion

documents are stored in tools like DigiLocker.

Revolutionizing e-commerce

The third pillar of this ecosystem is e-commerce growth.

The key theme in the Indian digitization journey is that the public sector creates open-source and interoperable digital public infrastructure, which allows private players to innovate via plug-and-play on that infrastructure.

E-commerce is where we find one of the most compelling expressions of this approach today, such as through the Open Network for Digital Commerce (ONDC). The idea is to promote networks for the exchange of goods and services: an engine of trade that enables not just existing heavyweight merchants but small merchants all over India.

Merchants are no longer tied to a single platform or application to be digitally visible. Small businesses gain multiple opportunities to be discoverable and to conduct business. And e-commerce becomes more inclusive and accessible for consumers, who can find a greater range of sellers, products and services.

It's natural that India would prioritize this, given that it is already the third-largest e-commerce market globally, with 250 million online shoppers in FY2023, a figure that is expected to reach 450 million by 2027. ONDC's ambitions match this backdrop.



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online shoppers by 2027, up from 250 million in FY2023





The lending pillar

The fourth pillar, lending, leverages digital infrastructure to address India's long-standing credit gap.

One example is the Open Credit Enablement Network (OCEN). This seeks to bridge the credit gap in India, especially for small businesses and individuals, by enabling communication and data exchange between loan service providers and financial institutions.

The premise of OCEN is that a great deal of existing data – such as bank transactions, UPI records and GST (goods and services tax) filings – can be used to help lenders assess creditworthiness, and then to advance tailored loans. Through this eased extension of credit, OCEN will help platforms like e-commerce

marketplaces and gig worker portals to become loan service providers, so that credit reaches small entrepreneurs.

“Traditional credit scoring often excludes large segments of the population, especially in the informal sector,” says Naman. “OCEN changes that by allowing lenders to make informed decisions based on alternative data sources.”

Another key part of this pillar is the Unified Lending Interface (ULI), which seeks to bring the UPI model to lending. The ULI platform facilitates the flow of a customer's digitized financial and non-financial data from multiple data service providers – even including the land records of Indian states – to lenders, making credit underwriting seamless and

considerably faster. Much like UPI, ULI has common and standardized APIs designed for a plug-and-play approach. This, in turn, should help with technical integration and make life easier for borrowers.

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OCEN will help platforms like e-commerce marketplaces and gig worker portals.”

A third crucial part of the lending ecosystem is the development of account aggregators, which are Reserve Bank of India (RBI) licensed entities that act as a bridge for the delivery of data. On one side of this bridge are financial information providers that hold personal or financial data, and on the other, the financial services providers who need it. These provide the consent management layer to allow for the secure and seamless sharing of data through encryption.

India Stack stands as a global case study of how public-sector-led digital infrastructure can drive

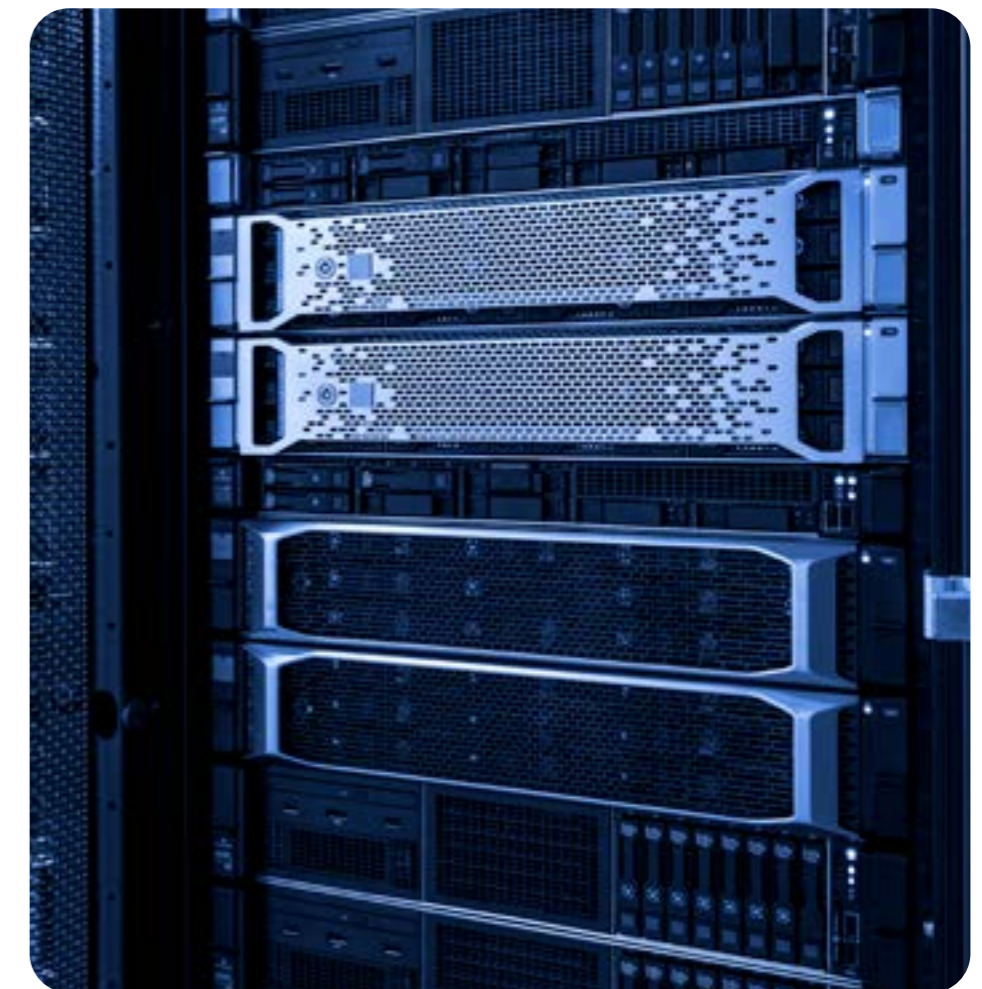
private-sector innovation. The open-source principles of this ecosystem allow for constant evolution, benefiting not just businesses but also society at large.

“What's truly remarkable,” says Naman, “is how much further India's digital ecosystem can grow. We're only scratching the surface of what's possible.”

India's digital journey showcases the power of combining ambition, openness, and innovation, creating a model for the world to emulate.

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1. See “NPCI chief sets ambitious new target of 100 billion transactions per month”, The Economic Times, August 2024 economictimes.indiatimes.com/tech/technology/npci-chief-sets-ambitious-new-target-of-100-billion-transactions-per-month/articleshow/112326535.cms?from=mdr



How UI/UX is transforming banking in India

The banking industry is undergoing a significant transformation, driven by increasing demand for digital banking services. Banks must design for a new world of banking: one in which simplicity, efficiency and transparency are key. Balancing innovation with reliability will continue to be a vital differentiator in User Interface (UI)/User Experience (UX) design.

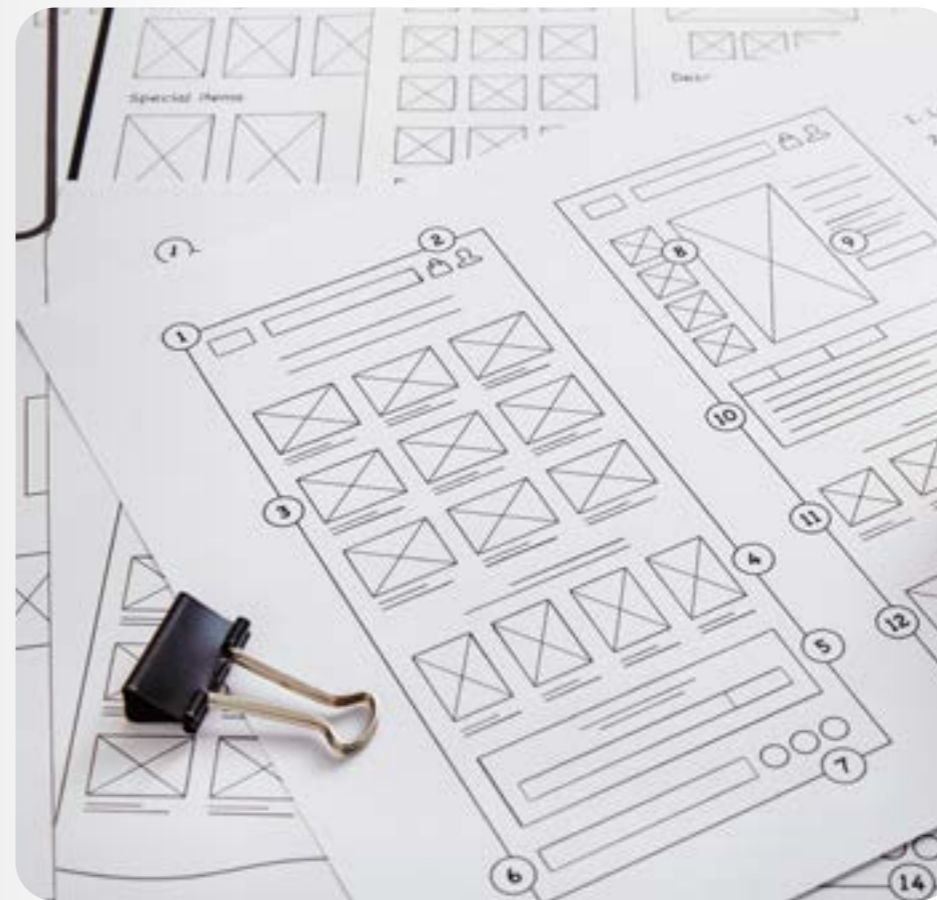
Consider the evolution of banking technology. It can be traced back to the emergence of the first ATMs in the 1960s, then the appearance of the internet in fund transfers in the 1980s. But perhaps the biggest landmark, around 2010, was the development

of mobile banking apps allowing customers to transact through their smartphones. Banking has shifted from a branch to a machine in a wall, to a machine in your home, to your phone.

This digital revolution has prompted banks to reimagine their customer interactions, with innovative UI/UX design playing a crucial role in shaping this new paradigm.

“UI/UX in banking has transformed from traditional, function-driven designs to more meaningful, human-centric and intuitive consumer experiences, with security and stability being non-negotiable pillars,” says Soumya Thomas, Head Digital & Data Platforms – Indian Subcontinent, Services, Citi.

“Historically, banks designed processes based on organizational logic, which often left users grappling with complex, confusing interfaces,” Soumya says.



“We see the shift now. Banks are embracing the need for more user-centric designs that prioritize simplicity, security, stability and personalization.”



Banks are embracing the need for more user-centric designs.”

This is easier said than done. Embracing user-centric designs first means understanding consumers. That process involves extensive research based on human psychology, leveraging iterative cycles of user research, testing and feedback, to understand customer pain points, derive strategic product insights and reshape design philosophy. By doing so, banks can deliver intuitive, seamless digital experiences on robust, extensible platforms that foster trust and simplify complex financial operations.

It is more important than ever to do so. Customers have always understood that banks hold a multitude of information on their account balances and transaction histories, but the speed and ease of access to this information have become more crucial in an era of instant payments, e-commerce and direct business-to-consumer (B2C) flows.

Digital payments across India rose 12.6% in the year to March 31 2024, according to the Reserve Bank of India’s Digital Payment Index¹. “This emphasizes the need for banks to invest in intuitive UI/UX design that addresses frustrations and fosters trust,” says Rahul Srivastava, Director, Head – Financial Institution Sales, India Subcontinent, Services, Citi.

And it’s not just about instant access to information: customers need to be able to see it in a clear and communicative way. Banks are moving to a minimal design philosophy that reduces cognitive load by using simplified data in charts and graphics to give people digestible information. Customers today demand 24/7 customer support, which in turn has driven the rise of

artificial intelligence-driven tools like chatbots and predictive analytics offering personalized support and efficient service.

Much happens behind the scenes for all of this to happen. “Platforms are adopting agile architectures, ensuring performance, availability, and robust security measures like biometrics-based authentication to reduce the friction and keep information secure,” Soumya says.



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All of that needs leading-edge investment in technology, and archaic systems won’t cut it. “Clients’ needs and business models are evolving at a rapid pace and banking platforms need to be agile and forward compatible,” Soumya says. “Banks are replacing their legacy banking platforms with a microservices-based structure to meet future banking and transaction needs.”

What clients want

So what, ultimately, do clients expect, and what can UI/UX offer to help banks meet these expectations? Several things are considered essential. They include:

- minimalistic, intuitive interfaces, quick transaction management and transparency;
- seamless omnichannel experiences across mobile, internet banking and APIs with cross-platform responsiveness and cohesive design systems;
- fast and secure access through biometric authentication and multi-factor verification;
- personalized features such as dashboards, real-time updates and data visualization; and
- AI-driven chatbots and virtual assistants, offering instant support, improving problem resolution.

To achieve all this, banks must prioritize simplicity of navigation, effortless onboarding, personalization, mobile-first design and a balance between security and ease of use. Good design can help with other issues such as transparency and trust. “Consumers are increasingly wary of hidden fees or complex terms,” says Rahul. Platforms can address this with visual explanations of charges, for example. “Trust is visually communicated.”

Rahul also speaks of the importance of “gamification and engagement. Make finance fun.” This can be as simple as achievement badges for savings goals, financial health scores or even friendly competition among users. This is particularly important in India, where 60%



of the population falls in the 15–59 bracket². “There is a young generation looking for banking, which is engaging,” Rahul says. “They dictate how banks design user interfaces.”

UI/UX must also consider key social considerations such as inclusivity and accessibility: voice-guided transactions, screen-reader compatibility and adaptive interfaces for low-bandwidth areas, for example. Rahul notes there is work underway to allow fund transfers on simpler phones, not just advanced smartphones.

In the Indian context, it is interesting to consider the impact of India Stack, discussed in a separate article. “Aadhaar is where the entire change started, because that meant that most of the population in India was now banked,” says Rahul. The journey from simple Jan Dhan accounts to the development of the Unified Payments Interface has ensured that over 90% of India’s population today has an

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There is a young generation looking for banking, which is engaging.”

account in a bank, another financial institution or a mobile money service provider³. This has developed a 24/7 expectation among the population and has prompted a swift transition to digital banking.

UI/UX at Citi

Recognizing the diverse needs of its global customers, Citi has adopted a thoughtful, user-centric approach that focuses on addressing the most impactful challenges in their lives and business processes. Several examples illustrate how Citi has effectively put these ideas into practice, achieving meaningful outcomes for customers.

One is CitiDirect[®], a digital platform serving over 180 countries and 135 currencies with decades of market leadership. Citi reimagined the whole platform “to match the functionality and user experience of modern fintech-driven applications,” Soumya says.

Redesigned features include biometric login and customizable widgets, so that each person will see their personalized login screen, as well as

persona-driven entitlements and pre-emptive payment actions, which dynamically learn from past actions. They also have integrated capabilities, a comprehensive dashboard, and contextual help, all tailored to enhance client engagement.

Other recent examples include streamlined onboarding via CitiDirect[®] Digital Onboarding, Digital Signer Management and the Client Knowledge Centre, all of which minimize friction and provide a seamless experience for global clients. Additionally, leveraging its CitiConnect[®] infrastructure, Citi recently launched a client-focused integration marketplace, expanding its Developer Portal to support multi-channel integration, including batch processing, real-time connectivity and pre-built integration solutions.

“Citi’s commitment to user-centric design and innovation is transforming its platforms to meet evolving client expectations, delivering frictionless, intuitive experiences that set new benchmarks for global financial services,” says Soumya.



180 countries

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1. India Brand Equity Foundation, “Digital payments increase 12.6% at March-end 2024, shows RBI data”, July 29 2024 www.ibef.org/news/digital-payments-increase-12-6-at-march-end-2024-shows-rbi-data#:~:text=Digital%20payments%20across%20India%20saw.and%20395.57%20in%20March%202023
2. “According to the Report of the Technical Group on Population Projections for India and States 2011–2036, 735 million people or 60.7% of India’s population was in the working age group i.e. 15–59 years in 2011” – Ministry of Statistics and Programme Implementation, Government of India, in “Population Statistics” p.23 mospi.gov.in/sites/default/files/publication_reports/women-men22/PopulationStatistics22.pdf
3. National Sample Survey Office, Ministry of Statistics and Programme Implementation, Government of India. See reference here: economictimes.indiatimes.com/news/india/29-3-persons-aged-15-24-yrs-not-in-education-employment-or-training-nso-survey/articleshow/98482135.cms?from=mdr

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