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UPI transactions have consistently been above the 10 million mark in recent months

7

NPCI has already initiated operations in seven nations: Singapore, the UAE, Bangladesh, Thailand, Nepal, Sri Lanka, and Bhutan

# A WORLD TO WIN

AFTER CONQUERING THE INDIAN MARKET, THE NATIONAL PAYMENTS CORPORATION OF INDIA (NPCI) HAS SET ITS SIGHTS ON CHALLENGING GLOBAL PAYMENTS GIANTS MASTERCARD AND VISA. PLUS, IT IS MAKING A BIG PLAY IN THE GLOBAL REMITTANCES SPACE

BY **ANAND ADHIKARI**

6

Beyond these immediate concerns, the NPCI is looking for deeper collaboration across borders as it looks to compete with Visa and Mastercard

2

NPCI is constantly building new use cases, like with the use of UPI for investing in initial public offerings

3

It is now looking to build newer use cases in terms of enabling credit lines, which could be a game changer



4

According to NPCI lenders like SBI, HD Bank, ICICI Bank and some others have already gone live with this feature

5

But it must address the revenue stream question for payments service providers since they are not allowed to charge a fee for P2P transactions

► **FIVE YEARS AGO, the National Payments Corporation of India (NPCI), a lesser-known organisation pioneering financial infrastructure in the country, held an off-site meeting for senior management under Dilip Asbe, the newly appointed MD & CEO.**

The mood was one of optimism, as NPCI was celebrating the success of the Unified Payments Interface (UPI) in achieving 1 billion transactions per month. UPI, introduced in April 2016, facilitates swift, 24/7 money transfers between bank accounts in India via a QR code. Not content with that milestone, Asbe—an engineer by training who has had stints with BSE, global money transfer giant Western Union, and payments player Euronet Asia Pacific—surprised everyone by announcing a target of processing 1 billion transactions a day within five years.

At that time, NPCI was handling approximately 25 million transactions a day, a considerable 37 times lesser than Asbe's ambitious goal. Fast forward to today, and though the target hasn't been met, UPI transactions are breaking records, registering a remarkable 393 million transactions each day, just three times shy of the initial target. Enter the disruptors: The pandemic, which accelerated digital payments; non-bank giants like GPay and PhonePe pushing boundaries with cashbacks; and distributing ubiquitous QR codes to small merchants, from *chaiwallahs* to vegetable vendors. New use cases, which Asbe was banking on, also emerged, ranging from paying utility bills and

investing in the stock market to global remittances and beyond.

This juggernaut is now charging towards meeting the goal of 1 billion transactions a day in the next two years. What will fuel the next phase of UPI's growth? It's not just debit transactions; it's about credit on UPI, which is the next big thing. There is also a global expansion underway into over half a dozen neighbouring countries.

To put UPI's achievements in context, San Francisco-headquartered Visa reigns supreme, swiping 212 billion debit and credit transactions annually; not far behind, New York-based Mastercard boasts 170 billion transactions; then comes NPCI, which has already registered 150 billion transactions per year. Asbe is now gunning for the two global majors. He declares, "In another two-three years, we expect to surpass the combined total of both Mastercard and Visa."

Considering NPCI's stellar growth, it doesn't seem out of reach. A crucial distinction lies in UPI's composition, predominantly debit transactions, unlike the global networks that encompass both debit and credit card transactions. But here again, the next big product is the credit line on UPI without any plastic card, which will push small-ticket digital loans on the fly. Second, NPCI's success shows that it could change how the whole world makes payments. And do it at a far lower cost to customers.

# S

**STILL, THERE'S MORE** to India's highly sought-after payments firm. The NPCI aspires to join the ranks of lead-

**“In another two-three years, we expect to surpass the combined [transactions] of both Mastercard and Visa”**

**DILIP ASBE** MD & CEO, NPCI

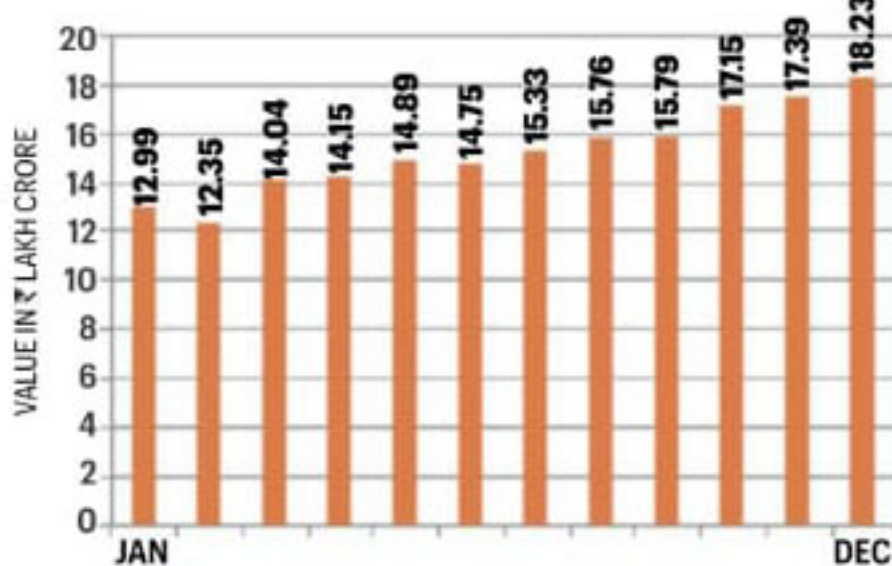
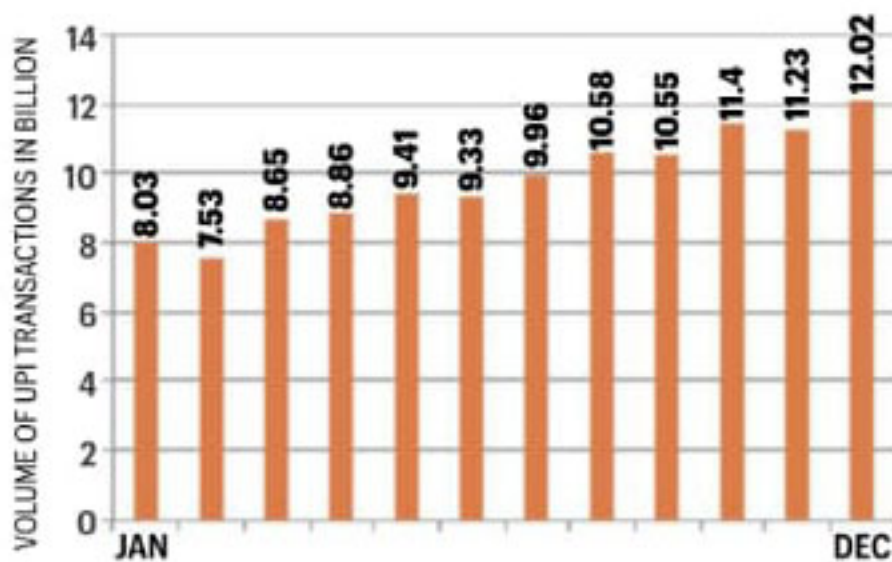


PHOTO BY MANDAR DEODHAR

# THE UPI JUGGERNAUT

## 10 BILLION AND COUNTING

- ▶ The bulk of UPI transactions are debit in nature
- ▶ Monthly UPI transaction volumes are neck and neck with those of Mastercard

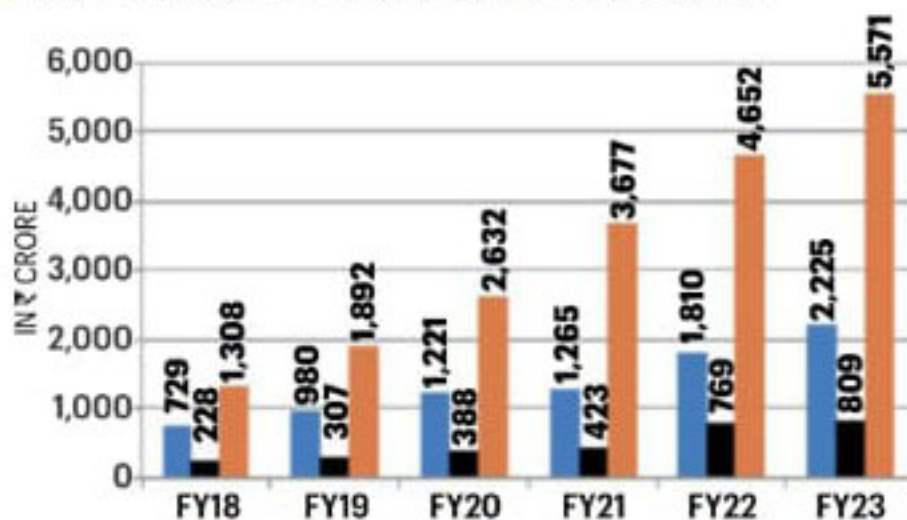


NOTE DATA FOR 2023 SOURCE NPCI

## EMPOWERED AND AUTONOMOUS

- ▶ Robust financials enable NPCI to be self-sufficient in attracting talent and investing in innovation
- ▶ Owned by market participants, it maintains an independent corporate character

● TOTAL INCOME ● SURPLUS ● TOTAL ASSETS



SOURCE NPCI

ing tech giants such as Microsoft, Google, Amazon, Apple, Meta, and other industry powerhouses, by embracing cutting-edge deep-tech advancements. Asbe says although NPCI is currently engaged in open source, AI, and distributed ledger technologies like blockchain, the ultimate objective is to excel in these domains.

Kunal Kalawatia, who heads the product function at NPCI, and is responsible for a range of products including Aadhaar-based payments, BHIM, RuPay, NETC, NFS and UPI, stresses the crucial role of deep human anchoring within the organisation. "We call it deep human and deep tech," says Kalawatia, stressing that the demand for most of the products stems from consumers.

The NPCI follows a systematic approach that integrates design thinking. This involves articulating the problem, engaging with the ecosystem, gathering diverse ideas, filtering them, conducting a feasibility check, and then developing them. "It's a very deep human process. It takes its own time and pace," says Kalawatia.

Some of these principles were formulated by Infosys Founder N.R. Narayana Murthy, the first chairman of the 15-year-old NPCI. In the first five years, NPCI was primarily a buyer of technology, with complete dependence on outside vendors. NPCI was promoted with the support of the Reserve Bank of India (RBI) by several banks as a non-profit organisation. The new team, with Asbe as the first employee and A.P. Hota as MD & CEO, operated from two modest rooms within the Indian Banks' Association's (IBA) offices.

It initially got charge of the National Financial Switch (NFS), which runs the ATM network in the country. It also developed the Cheque Truncation System, or CTS, which clears cheques electronically. The NPCI also oversees FASTag, driven by RFID technology, ensuring smooth passage through toll gates. In fact, NPCI is working very closely with RBI on its central bank digital currency (CBDC).

In August 2013, Murthy had to exit the NPCI after taking charge as Executive Chairman of Infosys. But another Infosys Co-founder, Nandan Nilekani, stepped in to lend support as he was the Chairman of the Unique Identification Authority of India (UIDAI) then. Being a technology expert, Nilekani encouraged NPCI to think bigger. It is he who motivated the young organisation to create UPI. Interestingly, he advocated the idea of NPCI using open-source networks, allowing external developers to contribute to software development.

It was Murthy who fostered a culture of profitability and self-sufficiency. NPCI today makes annual revenues of ₹2,225 crore, a surplus of ₹809 crore, and has created assets of ₹5,571 crore. (See graphic 'Empowered and Autonomous')

# A

**AT PRESENT, UPI** allows bank customers to link their savings or overdraft accounts, prepaid wallets, and RuPay credit cards for payments. But it is now expanding UPI use cases to include credit card linkages and digital credit lines. This promises not only to expand UPI's capabilities but could also provide a boost for credit cards, since just 6% of Indians use plastic cards.

The credit card customer base is around 100 million,

with credit outstanding at ₹2.51 lakh crore, compared with home loans where it is ₹26.40 lakh crore, vehicle loans at ₹5.83 lakh crore, and personal loans outstanding of ₹13.33 lakh crore till December end.

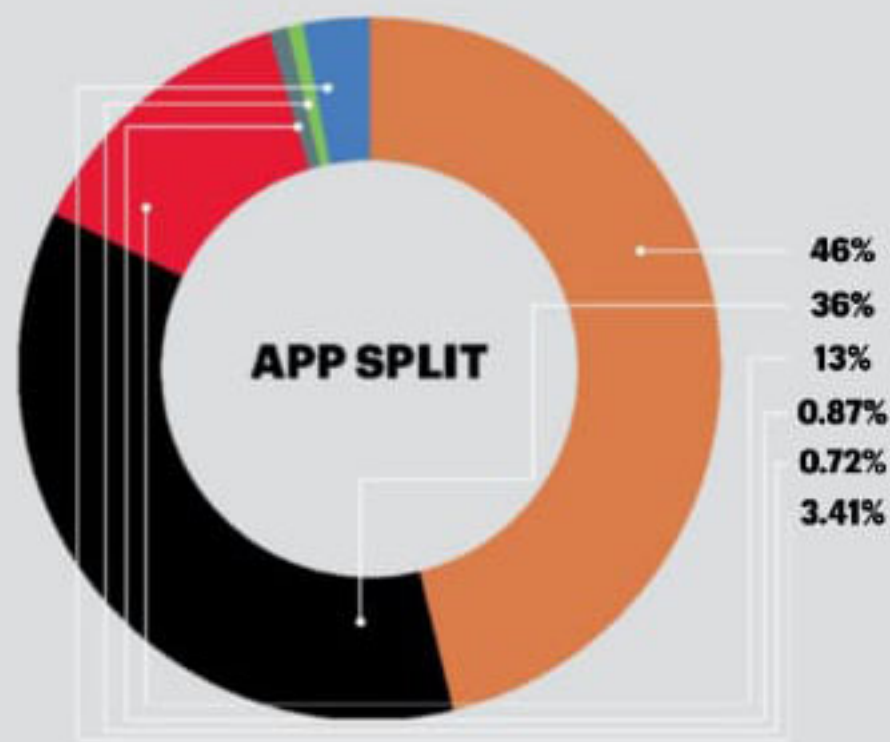
The first step in the path towards credit card linkage was RBI's June 2022 decision allowing the linking of government-backed RuPay credit cards. In fact, the proliferation of QR codes (50 million and counting) in every nook and corner and payment apps makes it possible to scan the QR code and pay, unlike the high-cost card infrastructure of POS machines—there are about 8 million machines.

“The integration of RuPay credit cards with UPI has transformed these cards from physical to virtual, boosting card spending by at least 30% where UPI is adopted. Over time, it's expected that a significant portion (more than 10% of total credit card spending) will shift to UPI, moving away from traditional RuPay, Visa, and Mastercard channels,” says Naveen Chaluvadi, Chief Digital Officer of private sector lender YES Bank.

“Banks are leveraging RuPay even though there are no MDR (merchant discount rate; the fee charged for pro-

## SHARE OF UPI APPS

- ▶ Two tech giants, Walmart-backed PhonePe and Google Pay, account for 80% of UPI volumes
- ▶ There is a concentration risk as banks are staying away due to zero merchant discount rate



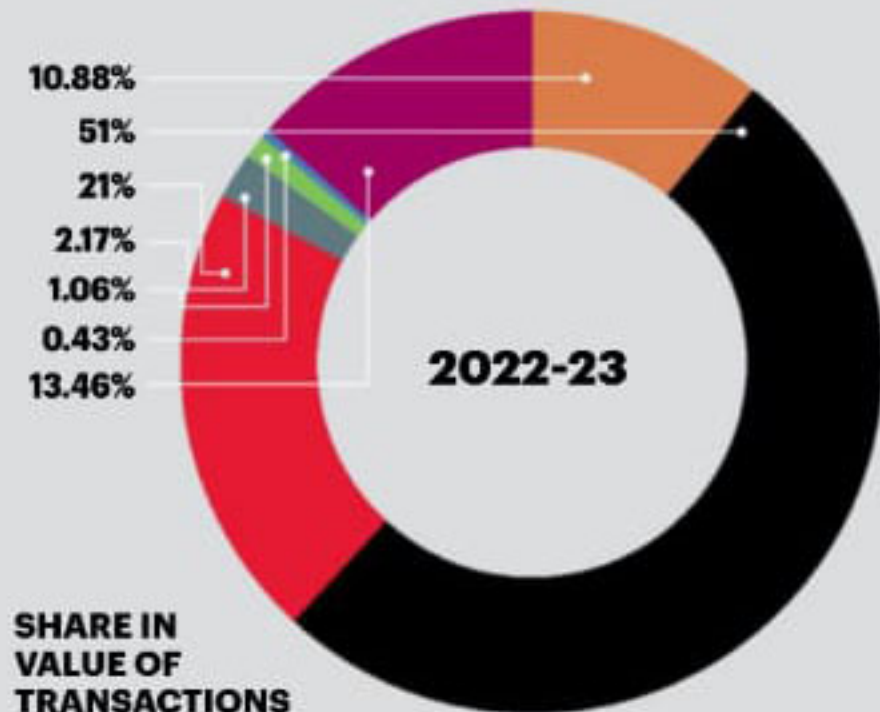
PHONEPE ● GOOGLE PAY ● PAYTM PAYMENTS BANK ● CRED ● AXIS BANK ● OTHERS

NOTE DATA AS OF DECEMBER 2023 SOURCE NPCI

## FAREWELL TO THE OLD

- ▶ UPI has overtaken not just traditional debit and credit cards, but also cash
- ▶ It trails only NEFT transactions, which still account for more than half of the transactions by value

PAPER BASED ● NEFT ● UPI ● CREDIT CARDS  
DEBIT CARDS ● PREPAID INSTRUMENTS  
OTHERS



SHARE IN VALUE OF TRANSACTIONS

NEFT IS NATIONAL ELECTRONIC FUNDS TRANSFER SOURCE RBI

ng transactions) charges. In the past seven-eight  
ths, we have observed RuPay credit cards linked  
PI, resulting in additional credit spends via RuPay  
it cards. These are very initial days, but the numbers  
rowing,” says Sanjeev Moghe, President and Head  
ards and Payments at Axis Bank. Asbe, too, admits  
the RuPay credit card is experiencing significant  
rth on UPI, with daily spending reaching around  
crore. “We anticipate achieving a 10% market share  
in the next few months,” says Asbe.

Will POS machines vanish then? Most experts don't  
k so. Parag Rao, Country Head of Payments, Con-  
er Finance, Digital Banking, and Technology at  
FC Bank, says POS machines will still play a role.  
ditional POS systems have evolved, and the new  
s are based on the Android platform. They function  
mobile phones, allowing you to integrate value-add-  
ervices and run loyalty programmes,” says Rao.

POS machines are also becoming smaller, and costs  
declining due to higher usage. The POS cost has  
uced from ₹15,000 when it was started to ₹1,500.

“Higher UPI usage may not hasten the end of  
or cannibalise credit cards. Credit cards come  
wards and free credit periods,” says Moghe of Ax

Last September, RBI introduced another inn  
use case, allowing banks to offer pre-sanctione  
lines on UPI without any cards. This product p  
both retail customers and businesses access to l  
et, pre-sanctioned credit lines from banks.

“We have started underwriting by using U  
We operate a third-generation model, which h  
refined over the years. New models evolve e  
months. We are seeing interesting results ever  
the credit on UPI officially begins,” says Moghe

Mohit Gorisariya, Co-founder of fintech p  
SalarySc, highlights the low penetration of re  
credit in India. Only 35 million Indians, less tha  
the population, have access to the product, co  
to 40% in China and 65% in western economie  
sariya believes that credit-on-UPI can bridge th

While banks have focussed on big-ticket lo  
introduction of micro- and small lending, and

## GLOBAL AMBITIONS

UPI is challenging global networks in less than  
decade of existence ▶ Global networks earn a  
substantial fee, whereas NPCI subsidises UPI

**212.6**  
VISA

**170**  
MASTERCARD

**150**  
UPI

TRANSACTIONS IN BILLION: **NOTE** 2022-23  
DATA EXCEPT FOR VISA, WHICH FOLLOWS  
A CALENDAR YEAR **SOURCE** ANNUAL  
REPORTS AND PRESENTATIONS



**KUNAL  
KALAWATI**  
CHIEF OF  
PRODUCTS, NPCI

“The NPCI follows a  
systematic approach  
that integrates design  
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engaging with the  
ecosystem, gathering  
ideas, conducting a  
feasibility check, and  
then developing them”

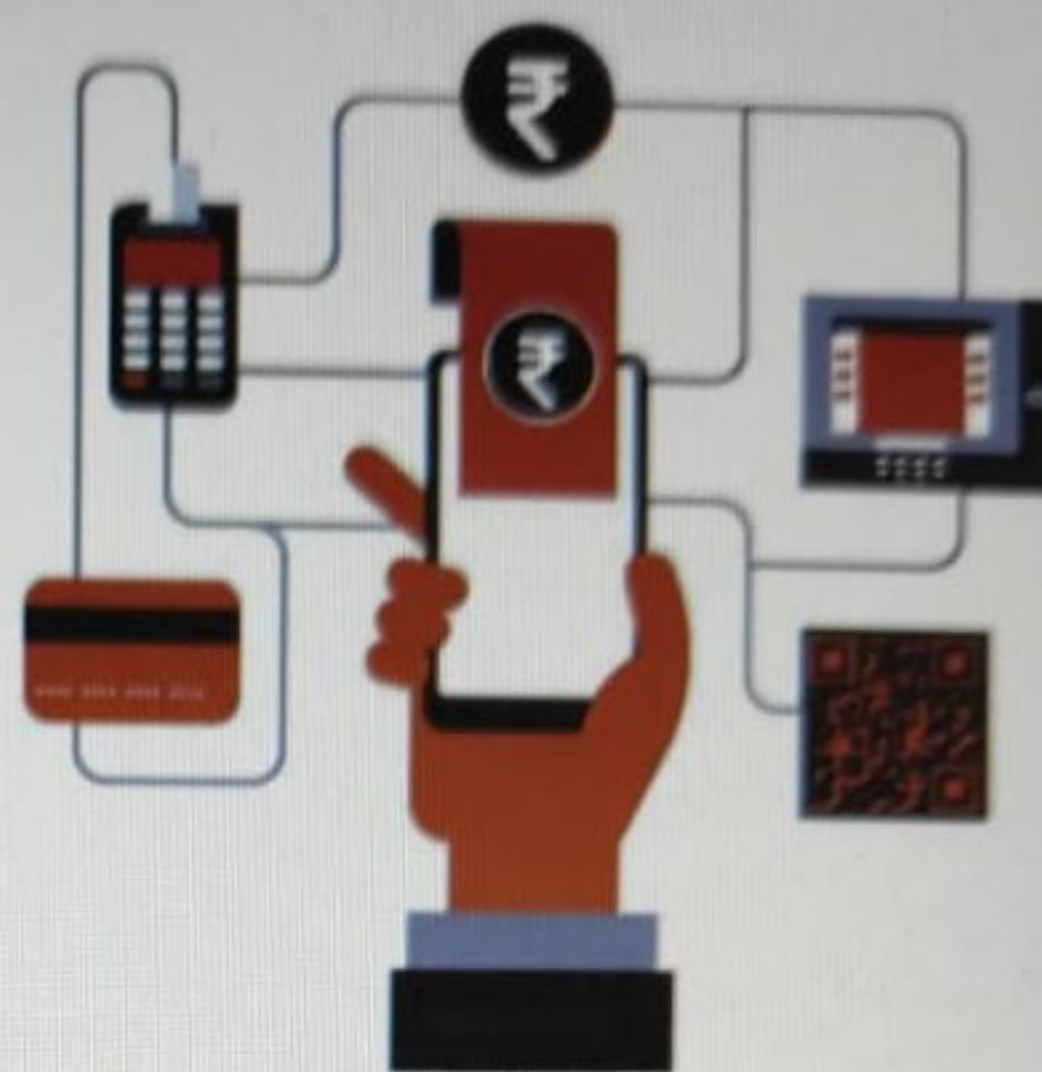
# CASH STILL KING

**OVER THE PAST** decade, digital modes of payment have seen a massive surge in usage, especially after the pandemic, with Unified Payments Interface (UPI)-based QR codes arming small merchants and the public with instant payments. Today, UPI-based payments, which clock over 12 billion transactions a month, have cornered more than 20% market share in retail payments.

And yet, the currency in circulation (CIC) has grown. Per data, the CIC-to-GDP ratio peaked at 4.4% in FY21, and then slipped to 13.2% in FY22, and is currently around 2%. What explains this dependence on cash?

That is because UPI payments are eating into other digital payments like

debit cards and NEFT—the shares of both have been in decline. A recent study by the Reserve Bank of India (RBI) that looked into the high cash-to-GDP ratio revealed that digital payments are substituting the transactional demand for cash, but not the use of cash as a store of value. There is still a tendency to maintain some cash for emergencies. Higher-denomination notes like ₹500 and ₹2,000 (which has been withdrawn) also act as a store of value. In large parts of India, families tend to store cash at home for medical emergencies or for ceremonies like marriage, etc. High cash usage is also prevalent in some sectors like real estate and construction, jewellery, export units, and MSMEs.



Besides, a report by CMS Info Systems, a cash management firm, had pointed out that there are specific periods of surge in cash usage. For instance, spikes were observed during the festive and wedding seasons between

October and December in FY22 and during October, December, and March of FY23. The report suggested that even online shoppers preferred paying cash on delivery. Another aspect, revealed by the RBI study, is concentration of

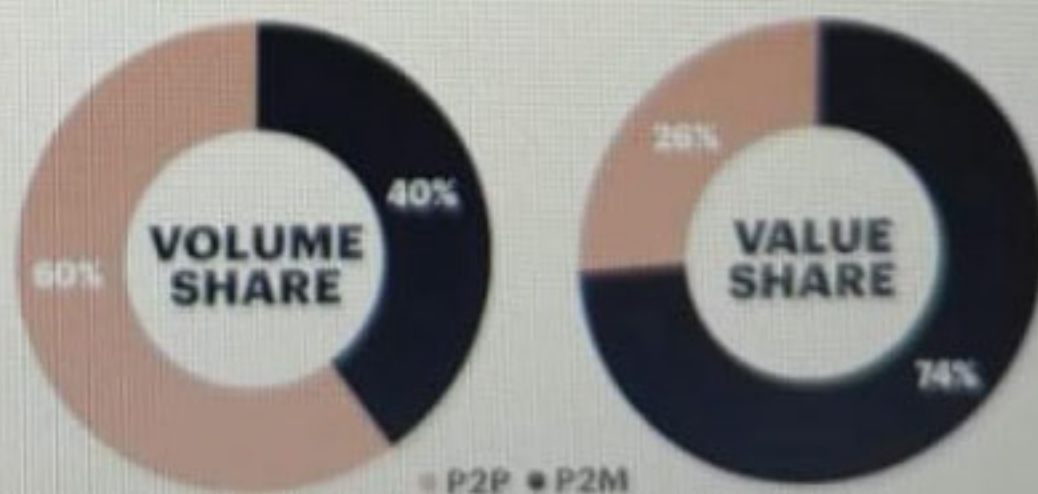
the point of consumption through credit on UPI represents disruptive innovation. According to Saumeet Panda, Founder of SalarySe, "Credit-on-UPI will help monetise the credit market, which is a key expectation of the middle class, given high small merchant adoption and the UPI-based digital form factor."

Chaluvadi of YES Bank feels this could lead to new use cases and customer segments entering the credit ecosystem. "The ultimate success of these initiatives will largely depend on robust credit assessment and collection strategies. Early applications may emerge under co-lending agreements involving collaborations between banks and non-banking financial companies (NBFCs)."

Per NPCI, major lenders like SBI, HDFC Bank, ICICI Bank, Axis Bank, and Punjab National Bank have already gone live with the credit lines feature on UPI, and others are working on it. Of course, many aspects of this feature need to be explored. Asks Moghe: "Can a credit line on UPI be credit-free for a certain period?" Currently, most

## P2P AND P2M

- ▶ Person-to-person (P2P) transactions are free, with individuals not incurring any charges
- ▶ Person-to-merchant transactions account for the lion's share of the value of UPI payments



NOTE DATA AS OF DECEMBER 2023 SOURCE NPCI

the usage and adoption of digital payments in better developed regions.

But, even so, cash usage is expected to reduce because of the rapid growth in the QR code infrastructure, matched by the increase in smartphone users. "Margins are wafer thin in digital payments, and the government should look to incentivise the players that aid penetration," says Seema Prem, Co-founder & CEO at banking correspondent firm FIA Global.

Of course, more needs to be done on cybersecurity and to mitigate risks from scammers. Anush Raghavan, President of Cash Management Solutions at CMS Info Systems, says, "As a physical payment mechanism, cash

strongly demonstrates its store of value and bridges trust in a transaction with consumers globally, which cannot be fulfilled by any other digital payments."

But, other disruptions are afoot, most notably RBI's move to develop a central bank digital currency (CBDC). Jose Thattil, CEO of fintech firm PhiCommerce, says, "This indicates a balanced, inclusive approach to economic growth, adapting to both established habits and modern needs, and represents a seamless integration of traditional and digital financial practices."

For the present, though, cash is still king. ■

@anandadhikari

loans are chargeable from day one. Moghe explains, "The credit card is the only product where there is a credit-free period. The industry is working on issues like interchange fees, MDR, and the credit-free period." Asbe says this initiative is still a work in progress. But there are challenges here, because small-ticket loans are considered risky. RBI's recent decision to increase risk weights on unsecured loans highlights this.

**A**

**ASBE OFTEN TALKS** about achieving 100 billion transactions per month by 2025. However, the



critical question is: where will this growth come from? At the moment, two tech giants, Walmart-owned PhonePe and Google Pay, together account for 80% of transaction volumes. In January 2021, NPCI implemented a cap of 30% on the market share of third-party players like GPay and PhonePe to prevent monopolisation, reduce systemic risk, and encourage innovation. But, globally, digital markets tend to be monopolistic, like with WhatsApp in messaging and Google in the search engine space.

NPCI believes that the market will balance itself over time. Kalawatia of NPCI says options are continually expanding. NPCI has introduced a UPI plug-in that allows direct in-app payments on merchant or e-commerce platforms.

Besides, in the capital market, UPI is now available for investments in initial public offerings (IPOs) and secondary market transactions. In IPOs, investors can instruct their brokers to use their UPI IDs for payment when completing applications. Many retail participants, helped by digital investment platforms such as discount brokers Zerodha and Groww, are increasingly opting for the UPI route for IPO applications.

The big challenge is the zero MDR in person-to-person (P2P) transactions. In the payment chain, everyone bears a cost. NPCI charges banks for interchange services. The banks, in turn, receive partial reimbursement from the government under incentive schemes. There is, however, no direct revenue stream available for payment service providers or PSPs because of zero MDR. They do make some money in person-to-merchant (P2M) transactions or by distributing third-party products like deposits, mutual funds, or insurance. In fact, there is a set-up cost to acquiring offline merchants, and banks have to create additional capacity to process high-volume and low-value UPI transactions. But who will bear the cost of achieving 10x growth? Moghe says, "We are migrating some of the PSPs to the cloud. We have realised that continually investing in servers builds significant costs, and the resilience will not be optimal. We continue to make these investments."

At present, the majority of UPI transactions are P2P, contributing 60% in volumes. This raises the question of whether a small or reasonable MDR on them could fund the payment infrastructure or the ecosystem. Interestingly, P2M transactions play a crucial role in funding the entire system, especially for small merchants.

But UPI's use cases go beyond transactions within India. That was evident during India's presidency of the G20, when it showcased the India Stack, of which the UPI was a crucial element. Though that expansion will take time, having a digital connection with 15 countries



**"Traditional POS systems have evolved and new ones are based on the Android platform... allowing you to integrate services and run loyalty programmes"**

**PARAG RAO**

COUNTRY HEAD - PAYMENTS, CONSUMER FINANCE, DIGITAL BANKING, AND TECHNOLOGY, HDFC BANK



**"We have started underwriting by using UPI data. We are seeing interesting results even before the credit on UPI officially begins"**

**SANJEEV MOGHE**

PRESIDENT & HEAD - CARDS AND PAYMENTS, AXIS BANK

among the Top 30 in the next 15-20 years would be a game changer. NPCI has already initiated operations in seven nations: Singapore, the UAE, Bangladesh, Thailand, Nepal, Sri Lanka, and Bhutan. (See interview of Ritesh Shukla, CEO of NIPL.)

At present, cross-border charges are as high as 5-6%, and NPCI aims to disrupt this. The usage of the India Stack in the developing world will not only reduce cross-border charges but also provide interoperability of UPI with these countries. Over the next decade, India aims to be self-sufficient in remittances, especially in the Middle East and other neighbouring countries.

In sum, NPCI, under Asbe, is pursuing three key tracks for the next decade. First, reach 100 billion transactions per month, a 10x increase. Second, become a manufacturer of deep technology. Third, promote worldwide interoperability.

NPCI has its task cut out. But considering what it has achieved, you wouldn't bet against it. ■