Money in the age of tech

Rise Insights report
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Foreword

The last decade witnessed some of the most pivotal transformations in the payments space.

Sustainable digital payments are slowly transforming how people transact and utilise money. According to the World Bank, two thirds of adults worldwide now make or receive digital payments, with the share in developing economies growing from 35% in 2014 to 57% in 2021.1

The shift from cash to digital has improved accessibility and also made it possible for financial institutions to offer digital payments to suit customers’ needs. Innovative tech like blockchain, 5G, DeFi and digital tokens like NFTs has gained momentum and caught the attention of consumers, fintechs, banks and regulatory bodies. Despite its volatile and complex nature, crypto-assets have gained popularity. As of 2023, there are an estimated 420 million global crypto users. The growth in decentralised finance has led to more conversations around stablecoins and their potential use cases. In one of the most noticeable developments, a bill to regulate stablecoins has progressed through the UK parliament.2

Central banks have been and continue to be at the heart of this evolution by maintaining financial stability as well as laying down strong regulatory policies to protect consumers and businesses. This year, we’re already seeing a push towards central bank digital currencies (CBDC) as 65 countries are in the advanced stages of development and more than 20 countries have launched pilots.3 To modernise an already advanced digital payments infrastructure, the Reserve Bank of India (RBI) has also launched a retail and wholesale CBDC pilot with over 50,000 users and 770,000 transactions.4 If the right CBDC design choices are made, they can support consumers and banks by providing a range of benefits, including reduced dependency on cash, lesser settlement risk, faster transactions and reduced costs.

Web3 and the metaverse also promise several shake-ups in the way traditional money and monetary norms operate. Web3 is being touted as the next iteration of the internet that reimagines the way people interact with each other, consume services and transform traditional money into ‘programmable money’, potentially reshaping the future of payments and finance (for more on the topic of payments, see our report The power of payments). Several players, such as Nike, Samsung, Walmart, Hyundai, Ferrari, Coca-Cola and many more have marked their presence in the metaverse and are trying to adapt to the new digital economy. To facilitate this digital economy, several notable financial institutions are also exploring digital money, NFT-backed services, trade finance and custody of digital assets. One such example is Fnality, a venture supported by a consortium of banks including Barclays and which develops a digital cash instrument that runs off blockchain technology.5 Developments are still nascent with new advances arriving each day.

The role of regulators and policymakers is also crucial. A strong regulatory framework will be needed to protect consumers and investors so that they don’t get tangled up in the complexity of tech and the ever-evolving digital nature of money. Banks, fintechs and other bodies will have to collaborate to smooth the mass adoption of digital tokens, stablecoins, CBDCs and other new forms of money, and ensure the tech is sustainable.

As this report shows, we’re witnessing one of the most exciting periods in the history of finance and money. Enjoy reading it.

Nilesh Chaudhari
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nchaudhari
Timeline: Progression of money and currencies

- **Oldest form of commerce dating back to 6,000 BCE**: Before Common Era
- **Barter system**: Goods, cattle, services, etc. were exchanged and traded
- **Coins**: Use of cowries made up of metals such as bronze and copper for transactions by the end of stone age. Use of gold and silver as medium of exchange can be traced back to 4,000 BCE
- **Coinage began circa 650 BCE**
- **Paper currency**: First development of paper money dates to around 7th century CE in China. Paper bills gradually spread to other parts of the world
- **Plastic money**: Charg-it (1946), Diners Club (1950), AmEx card (1958) issued initial version of credit cards. Barclays launched Britain’s first credit card in 1966, revolutionising personal finance. Magnetic strip and ATMs were introduced in the late 1960s
- **Electronic payments**: The late 1990s saw the introduction of online payments with companies like Amazon, PayPal, etc. Online banking and mobile payments took off since 2000s
- **Crypto-assets, digital tokens, CBDCs**: Bitcoin was launched in 2009 by Satoshi Nakamoto, becoming the first decentralised crypto-asset. In 2014, the first stablecoin, BitUSD, is issued on the BitShare blockchain. The Bahamas became the first country to launch its own CBDC in 2020. In 2021, El Salvador became the first country to introduce Bitcoin as legal tender
Minting a new future—together

Until now, cash was king: Money has always been a physical symbol of value used for exchange of goods and services. In this new era of money, countries are working together to build cashless societies and, with it, greater financial inclusion.
The evolution of money

The physical objects used to represent money don’t always have intrinsic value, whether it’s represented by a seashell, metal coin, piece of paper or a string of code electronically mined by a computer. Its total global value—currently estimated to be around $418 trillion¹—depends on the importance that people place on it as a medium of exchange, a unit of measurement and a storehouse for wealth.

There are over 150 currencies worldwide,² and although the perception is rapidly changing, often when we think of money we think of cash—exchanging a physical representation of money for an item or service. But with cash comes inherent issues, such as counterfeiting. For example, in recent years globally, it’s been estimated that over $2.27 trillion money is counterfeit.³ The Indian government has taken various steps to address this issue, including introducing new security features in banknotes, but counterfeiting continues to evolve.

Enter digital money.

From the beginnings of online banking in 1981⁴ to the introduction of mobile payments in 1997⁵, digital banking has evolved, and continues to evolve, in leaps and bounds. Think of physical cards, which are no longer needed with mobile payments since they don’t require an infrastructure such as ATMs to accept payments. Result: less infrastructure and wider adoption of digital banking by consumers who are mobile and tech-savvy. Simultaneously for merchants, the adoption of low-cost QR codes has increased significantly, making them a preferred option over traditional card machines. These instant, digital payment methods have enabled people to make transactions across borders and opened new opportunities for ecommerce.

In India, digital payment systems such as Unified Payments Interface (UPI)⁶ offer many benefits over physical money, including increased security, faster transaction times and easier tracking of financial transactions.
Digital India and its global influence

As the graphic shows, digital payments in India have increased in number dramatically in just a short time. Much of this is due to the advent of the UPI system in 2016, which allows payments via a user’s virtual payment address (VPA) or from QR-code transactions.

The success of UPI in India has inspired the development of similar payment systems around the world. The UPI architecture has been adopted by several countries, such as Singapore, Bhutan, UAE, Oman and France. Other countries have also produced their own set of instant payment systems that are based, like UPI, on mobile phone numbers or national identification numbers. They include:

- PayNow, Singapore’s peer-to-peer payment system
- PromptPay, Thailand’s real-time payment system
- Pix, Brazil’s account-to-account payment method

As with UPI, these payments systems have helped drive the shift towards digital payments and have made it easier for people to transfer money and make purchases securely using their mobile devices.

But as with any evolution, there are still pain points

The shift towards digital and near real-time payments puts pressure on banks’ legacy systems, which weren’t always designed to handle large volumes of transactions. This has led to friction and delays in processing payments and creates a negative impact on customer experience. Therefore, innovations like UPI Lite allows low-value payments to be processed without the need to connect with a consumer’s bank for every transaction.

Additionally, to ensure that consumers are able to pay using their choice of accounts, real-time payment (RTP) systems should be interoperable to ensure that all existing accounts are discoverable rather than forcing the consumer to open new types of accounts. For example, UPI allows consumers to attach debit accounts, credit card accounts (Rupay) and prepaid accounts.

While NPCI continuously works towards expanding the coverage, the core challenge remains adoption of RTP systems across a diverse network of people, languages, connectivity and demographics. Payment services that are IOT-based, recurring (AutoPay), voice (123Pay), network-less and biometric-based (AePS) will help penetrate markets for both the middle- and lower-income classes.
Scandinavia: Pioneer of a cashless economy?

In many respects, Scandinavian countries are often seen as being at the forefront of digital innovation. The region’s recent move towards digital money presents perhaps yet another great example.

Over the past decade, the Nordic countries – Denmark, Sweden, Norway, Finland and Iceland – have been rapidly transitioning towards a cashless economy, with the use of digital payment methods becoming increasingly widespread.1

As we have all experienced with the rapid adoption of cashless payments as a consequence of COVID-19, the shift towards digital money has transformed the way that people conduct transactions. The swift development in Scandinavia was caused by a number of factors. First and foremost, these countries are among the ones with the highest internet and smartphone penetration in the world,2 which prepared people with both the necessary hardware and the familiarity to make digital payments. The region also has a highly developed banking infrastructure, making it relatively easy for financial institutions to introduce digital payment options.

A concerted effort between governments and businesses in the region to promote digital payment methods also helps to make them a more efficient and, more importantly, secure alternative to cash.3 Many shops and businesses no longer accept hard currency, and some banks have even stopped providing cash services altogether.4 Take Sweden, where cash transactions in the country fell by around 40% between 2010 and 2019. Today, only around 13% of all transactions in Sweden involve cash, with most people preferring to use digital payment methods such as mobile payment apps and credit or debit cards.5

The change in practices, habits and preferences to move away from cash and deep into digital money has had various implications. For businesses, the move allows them to operate more efficiently, dispensing with the need to handle cash and other, costly operations, as well as reducing the risk of physical theft and fraud. For consumers, digital payments have made transactions more convenient and efficient. Long gone are the days of having to search for and get money out of an ATM and carry it around. For governments, it’s reduced the level of tax evasion. More broadly, the shadow economy (cash-only jobs) shrinks with a digital economy.

1 Riksbank 2 Internet World Stats 3 Norden 4 World Line 5 Riksbank
Did someone mention crypto?
The level of crypto adoption across the Scandinavian countries varies. But, as they’ve generally been early adopters of new technologies, it’s no surprise that interest in crypto-assets is relatively high. For instance, Sweden has a vibrant crypto community and many merchants and businesses accept Bitcoin and other crypto-assets as payment. In addition, the Swedish government has been exploring the possibility of creating a central bank digital currency (CBDC), which could further boost crypto adoption in the country.6

Norway has also seen significantly greater interest in crypto-assets, with a growing number of merchants taking crypto payments. However, the Norwegian government has been more cautious than its Swedish counterpart with crypto regulation, the result of which could slow down the take-up.7 Denmark also has a relatively high level of crypto adoption. In 2019, Denmark’s tax authority reportedly began targeting crypto-asset traders to ensure that they weren’t evading taxes on their earnings. This move suggests that the Danish government is taking crypto seriously and we could see it turning out to be a currency alternative.8

Overall, while the level of crypto adoption in Scandinavian countries may not be as high as in others, there is certainly a growing interest in crypto-assets in the region, and many businesses and individuals are exploring the potential of these new digital assets.

But beware, problems remain
While most people in the region have access to digital payment technology, many do not. This group includes elderly people, who may not have access to the necessary technology or be comfortable using it. For example, despite Sweden’s commitment to digital currency, there is some scepticism as to whether it’s for the best.9 And although the number of crimes linked to cash has fallen in Sweden,10 some in Scandinavia have raised privacy and security concerns with the shift to a cashless society. As digital payments can be easily tracked and monitored, many are worried that governments can easily evolve into a surveillance state. In addition, all payments made online create new opportunities for hacking and the potential for data breaches.

As the rest of the world tracks the developments in the Nordic region and learns from their experience, it’s likely that we will see more countries transition towards digital money in the coming years.

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6 Coin Telegraph 7 The Freeman Online 8 Bloomberg 9 BBC 10 Riksbank
Improving the paper trail without cash

With virtual currencies such as central bank digital currencies (CBDCs) and stablecoins, money will become abstract. But even though you won’t carry money in your pocket, technologies such as blockchain help ensure it’s more secure and accountable.
The CBDC footprint is expanding globally

Central banks across the world have been experimenting with central bank digital currencies (CBDCs). Almost 120 countries, representing over 95% of global GDP, are exploring a CBDC in some shape or form.

Eleven countries have fully launched a digital currency, and China’s pilot, which reaches 260 million people, is set to expand to most of the country in 2023. Also this year, over 20 countries will take significant steps towards piloting a CBDC.

So, what is a CBDC?

A CBDC is a digital form of a country’s fiat currency that is issued by its central bank. Like paper currency, a CBDC is a direct claim on the bank. Unlike some of the most well known crypto-assets, a CBDC is not issued by a public blockchain that can be accessed by anyone.

As a result of regional conflicts and sanctions, countries have sought to diversify their payment options without a dependency on any particular currency. There are now nine cross-border wholesale CBDC experiments and seven cross-border retail projects. Besides cross-border transactions, CBDCs create lending marketplaces, legalise donations and reduce cost of stimulus fund injections, and most also reduce illegal fund movements by embedding smart contracts.

Direct and indirect CBDCs

In the direct model, consumers have a direct account with a central bank, which sells or transfers CBDCs in the consumer’s account. Inherently, this model is built on maximum trust, but it puts pressure on the central bank and dilutes the role of commercial banks.

In the indirect model, banks are the intermediaries. Central banks issue or sell CBDCs to commercial banks, which sell or transfer CBDCs to retail consumers. In this more widely explored model, consumer accounts are owned and managed by commercial banks.

Note (▼) Central bank debits commercial bank’s reserve account with the central bank to pay for CBDC, thus overall reserves decline. Additionally, commercial bank debits consumer’s deposit account to pay for CBDC obtained through API. Decline in reserves is offset by (▲) increase of CBDC in circulation.

*Unlike banknotes, CBDC can be distributed by other Payment Interface Providers such as exchanges and virtual asset service providers, and not just commercial banks.

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1 Atlantic Council 2 Forbes 3 Cato Institute
Use case: India’s eRupee

India is piloting CBDCs for the future, with much research and excitement at the prospect of supporting the use of Web3. Scalability, privacy, liquidity, interoperability, standardisation and offline transactions are all being examined.

The Digital Rupee—Wholesale (e-W) was launched on 1 November 2022, but limited to the settlement of secondary market transactions in government securities. According to the Reserve Bank of India (RBI), “use of the e-W is expected to make the inter-bank market more efficient [and] reduce transaction costs by pre-empting the need for settlement guarantee infrastructure or for collateral to mitigate settlement risk.”

The pilot in the retail segment, known as Digital Rupee—Retail (e-R), was launched on 1 December 2022, within a closed user group comprised of participating customers and merchants. The first phase included four banks: State Bank of India, ICICI Bank, Yes Bank and IDFC First Bank.

The pilot has already seen digital rupees worth over $15.8 million issued as of March 2023 across the wholesale and retail CBDC pilot. RBI aims to scale the pilot of the retail CBDC to one million users by July 2023 and, per the RBI Executive Director Ajay Kumar Choudhary, the central bank is going to test a multiple-tech architecture, multiple design features and multiple use cases, including an offline programme. RBI has launched a hackathon to identify use cases and solutions for retail CBDC transactions, including transactions made offline.

Target is to onboard one million users by the end of June 2023. RBI is also looking to integrate India’s Universal Payment Interface fully interoperable with CBDC for quick adoption.

There is a lot of excitement in this space...

Factors such as scalability, privacy, anonymity, liquidity, interoperability, ability to transact offline and standardization are likely to determine CBDC’s mainstream adoption. Nevertheless, CBDCs have caught the attention of various economies and could serve as a unifying factor.

The views expressed in this article are those of the author and not necessarily those of IBM. Information in it is for general guidance only.
The impacts and benefits of regulation on stablecoins

Stablecoins have been a major topic of discussion in the crypto community over the past few years. They’re just one form of crypto-asset, but stablecoins are digital currencies whose value is pegged to another currency, commodity or financial instrument, and offer the benefits of blockchain technology without the volatility associated with traditional crypto-assets.

As the adoption of stablecoins continues, regulatory bodies are starting to take notice. In the UK, there is a push towards regulating them, which could have a significant impact on the future of the financial services industry.

Stablecoins have come a long way since their inception in 2014, with the likes of Tether (USDT), which is pegged to the US dollar.1 Today, stablecoins are used for a variety of purposes, from day-to-day transactions to cross-border payments to hedging against crypto-asset volatility. As businesses and individuals become more familiar with the benefits of digital currencies, we can expect to see increased adoption of stablecoins as:

- A means of conducting transactions and storing value
- A key component of many DeFi applications
- A faster and cost-effective alternative to traditional methods of cross-border payments

However, with all the benefits comes the need for increased due diligence.

How the UK is steadying the ship on stablecoins

In early 2021, the UK government announced its intention to give stablecoins the same level of regulation as traditional payment methods, such as debit cards and bank transfers.2 The UK’s Financial Conduct Authority (FCA) has also proposed new rules requiring stablecoin issuers to meet capital rules, hold sufficient assets to back their stablecoins and be subject to anti-money laundering (AML) and counter-terrorism financing (CTF) regulation.3 These requirements are designed to prevent stablecoins from posing a risk to financial stability in the event of a market downturn. Of course, regulation is a double-edged sword: Strict capital requirements and asset backing reduce insolvency, but over-regulation could stifle innovation and competition.

The Bank of England (BoE) is exploring the possibility of introducing its own central bank digital currency (CBDC).4 The so-called digital pound, a ‘platform model’ with a core database that’s accessed by an API, aims to provide instantaneous transactions between parties with a tamper-resistant record of all payments.5 To promote cross-border transactions and global adoption, the BoE has been working closely with other central banks and financial institutions around the world to ensure that their CBDC will be will be interoperable with other digital currencies and payment systems.

But even though stablecoins might seem like the logical evolution in economies...

Things can go wrong

The primary question isn’t one of innovation or use of technology—simply put it’s a matter of securing funding.

Other factors are at play, but in order for stablecoins to experience smooth sailing, banks need to feel more engaged with the crypto market.
Where we go from here

Stablecoins are a rapidly growing area of the crypto-assets industry, offering the robust benefits of blockchain technology. The UK’s push towards regulation of stablecoins will provide increased security for investors and facilitate wider adoption of these digital assets. While the UK’s CBDC may have long-term impact on the financial industry in the future, it’s already clear that the move towards digital currencies is gathering momentum, and the introduction of a ‘digital pound’ is a major step forward in that direction. The momentum is confirmed by the BRICS nations (Brazil, Russia, India, China and South Africa) that have announced plans to launch their own digital currency.

Overall, the future of stablecoins is bright, as they offer a reliable option for those looking to invest in digital currencies. As adoption of digital currencies continues to grow, we can expect to see increased demand for stablecoins as a means of conducting transactions and storing value. However, it will be important for stablecoin issuers and users to navigate the challenges and risks associated with this rapidly evolving market, which is why robust but flexible regulation is important.
Harnessing the full potential of Web3 and the metaverse

Web3 and the metaverse are open for business and virtual economies are taking off, with central banks and regulatory bodies overseeing their development and inherent risks.
The axioms and accelerants making the metaverse a powerful economic engine

It can be argued that the first metaverse was created some 50,000 years ago. Through language, we can programme imagery in the minds of others.

Imagine an elephant raising its trunk. For most, it would be an easy exercise. Think of the stories we narrate. A person or culture’s oral traditions allow us to construct elaborate worlds in our minds. Those, too, are a form of metaverse.

Technology is taking that imagination to the next level.

Researchers claim that by 20301 we’ll spend more time in the metaverse than the real world. So, what’s the modern metaverse? We can define it as a maximisation function of four axioms coupled by blockchain and AI as accelerants. The four axioms, which will drive growth of the metaverse economy, should be considered when developing business strategies.

The first axiom is the human need for immersive experiences. Quite simply, humans tend to prefer greater sensory engagements over lesser ones.2 A rollercoaster ride is more immersive than watching a video of the same ride. Although watching the video might almost always be at little to no cost, there’s nothing like taking the ride in reality and the premium we pay for the immersion is indicative of the demand.

The second axiom is the human need for community. The desire to bond with others and connect, or at least have the impression that we are connecting, is critical and there are ample studies to suggest that humans crave it, depend on it and even thrive longer with the right community.3

Third, we prefer pleasure over pain. It may be stating the obvious, but this is at the root of how we may prioritise some activities over others, even if those activities yield little to no return. Think binge-watching an entire Netflix series versus filing your taxes.

1  KPMG  2  Science Direct  3  PLOS Medicine
Finally, and often unnecessarily controversial, is that our conception of reality is at the root a fundamental belief system. Hollywood’s objective is to convincingly cause us to suspend our disbelief when watching a movie and the metaverse attempts nothing less. In fact, it goes beyond the suspension of disbelief and attempts to convince the user that there’s an alternative reality by blurring the line between the real and the imagined.

We can now define the metaverse maximisation function, with the four axioms as inputs or factors in the function. And we can further define the metaverse itself as whichever platform currently maximises all four and creates synergies.

A simple example of a sector that largely incorporates these four axioms is gaming – it involves community, immersion and joy. And although the line between gaming and reality is still wide, it’s becoming narrower.

The accelerants: AI and blockchain

Blockchain, machine learning and AI can act as accelerators or multipliers to this function.

Often, a metaverse employs a marketplace where virtual goods and services can be bought and sold. For example, I can buy a top-of-the-line pair of virtual sneakers to improve my experience, standing or branding in a game. Without blockchain, I do not truly own a perpetual asset – the life of the asset is limited by the life of the centralised organisation that provides the experience. With blockchain, my virtual sneakers can outlive the organisation that issued them or processed the payment, and port them to any other metaverse for use or trade.

Stablecoins allow payments to occur across borders and across systems, dissolving boundaries and payment friction. Couple that with the fact that metaverses can potentially have theoretically limitless internal GDP, and there’s nothing to restrict the economic size of a virtual world as money from all corners of the world flows in. If we’re spending more time in the metaverse than in the real world, it stands to reason that we may be transacting and trading more there as well. The digitisation of currencies and the virtualisation of reality will together force the whole financial services industry to reconsider how to best capitalise on this opportunity, one that can potentially eclipse the payments volume of a real-world country. This may mean different types of products, fee structures and access points need to be designed.

AI is growing in adoption in the hands of retail users with tools like ChatGPT. Bloomberg’s own financial generative, pre-trained transformer (GPT) system indicates that generative AI, the type of AI that produces more information out of existing information, is in its early days. Domain-specific GPTs will become the norm in the coming years. The metaverse has yet to capitalise on this, but it’s not difficult to see that hyper-personalisation is coming, meaning a metaverse is no longer provided to you, rather your behaviour creates a dynamic metaverse as algorithms deeply study your virtual activity. Actors, agents or players you face within the metaverse act and react more in line with your psychology as platforms more narrowly tighten the gap between reality and fiction.

In other words, so-called ‘hallucinations’ (surprising or incoherent responses from AI systems) may someday be highly monetisable.

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The impact of Web3 on global financial systems

Welcome to the digital age, where technology has transformed nearly every aspect of our lives, including how we handle money and other financial assets.

There’s been a significant shift towards leveraging Web3 technology in recent years, which has introduced new opportunities for individuals and businesses. Smart contracts, digital assets, non-fungible tokens (NFTs), decentralised finance (DeFi) and decentralised identity offer unparalleled transparency, security and efficiency in financial transactions, making them a promising complementary solution in the shorter run, and disruptive in the longer run, to the traditional monetary system.

Here are some key areas in which Web3 is causing a paradigm shift.

Global payments: Breaking down geographical barriers

High transaction fees, delays and opaque currency conversion are persistent issues with global payments. Web3 technology that uses native digital currencies like Bitcoin or programmable assets like stablecoins results in a more efficient flow of virtual money across borders. Stablecoins issued by regulated banks are an innovative hybrid model combining central bank digital currency (CBDC) compliance with stablecoin innovation, bringing programmable money into existing financial systems. Decentralised identity, leveraging self-sovereign principles, can further simplify global customer verification enabling privacy and reusability.

While adoption of cross-border payments is faster in Web3-native areas such as gaming, NFTs, crypto on-ramping and P2P transfers, there’s a growing demand in traditional cross-border applications too, such as trade finance. In 2022, settlements using stablecoins surpassed $7 trillion (in comparison to Mastercard’s business transactions totaling $2.2 trillion), indicating Web3 technology is gaining adoption. Canton Network, a blockchain network that combines public decentralisation with financial market privacy and controls, is just one example of how large institutions are embracing Web3 features for global payments. Visa collaborating with Circle Internet Financial, PayPal and JPMorgan Onyx are others.
Micropayments: A new wave of business models

Today’s digital age has created several new global business opportunities, especially in content creation like influencers and artists, but monetising them is challenging due to inefficiencies with micropayments. With the advent of digital currencies and crypto rails, micropayments can be made with few or no fees, boosting innovative business models that were previously non-existent or unprofitable. Examples include pay-per-use, token-gated access (to exclusive events or content), subscriptions, tipping, loyalty and air-dropping for customer acquisition, retention and services. Payments of a fraction of a dollar without custodial risk offer a new level of financial flexibility.

A mainstream example using this type of innovation is Nubank, the Brazilian fintech that offers a token-based loyalty programme (Nucoin) to their 70 million customers. Others include popular browsers like Brave incentivising users for their attention, Opera with its Opera Points as a cashback reward,3 and startups like Ammer Wallet enabling peer-to-peer payment like a message in Telegram.4 Furthermore, non-custodial software wallet apps enable simplified payment UX with QR or NFC, making micro-payments more accessible.

Programmable assets: An innovative way to create new assets

The programmability of digital assets means that digital tokens can be created on the blockchain that represent ownership of an underlying asset, which could be a piece of property, stocks or a work of art. Critically, the assets promote financial inclusion by increasing accessibility to underserved adults.5 Democratisation with tokenised assets has added global liquidity and a new class of investor, and fractional ownership of high-value assets like real estate or high-value goods has created new asset classes.

As digital assets mature, they become less speculative and gain more utility. Tether (USDT), a popular stablecoin, reported record profits of $1.48 billion in Q1 2023 and demonstrates the surge in demand in this area.6 Research by the Boston Consulting Group suggests that the tokenisation of global illiquid assets could become a $16 trillion industry by 2030.7 GS DAP™ (Goldman Sachs’ digital asset platform), Hamilton Lane, Franklin Templeton and Siemens are leading examples in the tokenisation space. Forward-thinking regulators like the Monetary Authority of Singapore (MAS) are also venturing into Web3 with, for example, Project Guardian8, which is a collaborative to test asset tokenisation and DeFi.

3 Opera 4 Twitter 5 Rise, created by Barclays 6 Tether
7 Boston Consulting Group 8 Monetary Authority of Singapore
Document management: Ownership proven by NFTs

NFTs have disrupted traditional document management practices because they provide a tamper-resistant record of events on-chain that all involved participants can access and validate, resulting in significant savings and fewer delays. From simple certificates to more complex examples like documents of title (e.g., bills of lading) that, to be exchanged, traditionally require courier services, NFTs can offer a simpler, one-click user experience for verification of ownership and transfer.10

Web3 in the future

There are uncertainties ahead: How will policymakers provide clear frameworks? Will tech mature to become more scalable and interoperable? Those caveats aside, Web3 builders are building composable foundational Lego blocks to follow the analogy of the ‘dial-up to 5G’ internet growth era. Web3 technologies are a promising complement to the existing monetary system and poised to revolutionise it in ways we can’t imagine, especially, perhaps, as a platform for the currency of the future. The potential impact is huge, with use cases ranging from disintermediation to ones involving programmable assets.

The views expressed in this article are those of the author and not necessarily those of Polygon Labs. Information in it is for general guidance only.

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Technology alone isn’t the future of money

Broad adoption is also required. But customer trust and security must not be sacrificed as we fundamentally change how we use money. In order for this to work in everyone’s best interest, we’ll need all hands on deck, which includes traditional banks and fintechs.
New money, new challenges

The world of money is evolving, and new forms of it are emerging.

Crypto-assets such as Bitcoin, Ethereum and Litecoin are now widely recognised as legitimate forms of money, and more people are beginning to accept and use them. Other digital currencies and payment systems are also making their way into the mainstream. However, for these new forms of money to be truly successful, there are some critical considerations.

One of the most important factors is convenience. People need a system that’s easy to use and can be accessed from anywhere, at any time. This is where fintechs and financial institutions (FIs) can make a difference – by leveraging cutting-edge technologies and providing seamless and user-friendly experiences.

Security is also paramount. People need to know that their money is safe, and that they can transact without fear of losing their funds. Of course, it’s banks that provide this assurance, by ensuring the security of transactions, by protecting customer data and preventing fraud. In many cases, banks and other FIs often take the responsibility of refunding money when adverse incidents occur. So providing, for example, two-factor authentication, encryption and monitoring of transactions, by protecting customer data and providing seamless and user-friendly experiences.

Another important factor that can drive the adoption of new forms of money is trust. People need to believe that their money is safe, and that they can transact quickly and accurately. This helps to demystify the technology and make it more accessible to the average person. By providing clear and concise information about the benefits and risks of new ways of paying, saving and lending, the industry can build trust and encourage adoption.

Case in point: Revolut, a UK-based digital bank that provides a one-stop shopping experience for its over 28 million users. Services include basic money management to investing to crypto, but also extend to the cutting edge: disposable virtual cards that change after every transaction, thus adding a layer of protection for the user. The Bank of England (BoE) is exploring a potential retail UK central bank digital currency (CBDC) called the ‘digital pound’. The BoE entered the design phase for the digital pound in early 2023, with a decision on whether to proceed to a build phase expected by the end of 2025. Barclays is engaged with the research and design of the digital pound, which includes:

- participating in the BoE’s CBDC Technology Forum;
- releasing a public whitepaper describing an illustrative industry architecture that aims to mitigate the risk of fragmentation by placing the digital pound and commercial bank money on a similar footing;
- participating in Project Rosalind, which was a joint experiment led by the Bank for International Settlements (BIS) and the BoE to prototype and test interfaces for a potential retail CBDC.

Undoubtedly, fintechs and FIs play a critical role in the implementation of new forms of money. They can help to drive innovation, create new products and services and provide access to new markets. By leveraging technology and providing innovative solutions, they can help to create a more efficient and streamlined financial system, one that includes secure, efficient and reliable payment gateways, merchant services and customer support. They can also work with regulators on compliance and oversight such as anti-money laundering (AML) and know-your-customer (KYC) regulations. This is especially important in the case of crypto-assets, which are often viewed conservatively by regulators.

The Reserve Bank Of India (RBI) is currently piloting both retail and wholesale CBDCs, with a participation of over 100,000 customers and 13 banks. Obviously, security and regulatory compliance are critical. As such, RBI is working with regulators on a provision that would allow retail CBDC users that ability to delete transactions. Why? To maintain anonymity, which is one of the chief concerns about retail usage of CBDCs.

Alongside these specific factors is the smooth functioning of the entire value chain, including operations like payment processing, reconciliation and settlement. By providing reliable and efficient infrastructure and support, fintechs and FIs can help to ensure that the value chain runs smoothly and that transactions are processed quickly and accurately.

To prevent abuse of the financial system as a whole and maintain its integrity the successful adoption of new forms of money will require collaboration, innovation and a commitment to building a better financial future for all.

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AI & Quantum Scientist
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From our Rise sites
Rise London

The UK has set a goal to become a science and technology superpower by 2030.¹ Fintech in particular remains a priority, with the groundwork being built for clearer, regulatory frameworks to enable acceleration within financial services.

Crypto-assets remain in the spotlight: Adoption continues to grow, with 6.2% of residents owning some form of crypto-asset.² Despite this, the crypto ecosystem is still largely unregulated. But the UK Government announced plans to “robustly regulate crypto asset activities” sending a message of hope to consumers and businesses.³ The Spring Budget 2023 also introduced an amendment of self-assessment forms for consumers holding crypto assets for the 2024-25 tax year.⁴ This change will unveil more information on consumer behaviour, which in turn could help shape regulation. While we wait for this new bill and consequent regulation to come into effect, fintechs must carry the baton. For example, Rise resident company SavingBlocks helps customers build crypto portfolios that match their risk appetites. From an ecosystem perspective, Rise London continues our in-person monthly Crypto Club, exploring the developing role of digital currencies from a global perspective.

The central bank digital currency (CBDC) is also being explored in the UK, with the Bank of England and HM Treasury actively exploring the digital pound. Barclays’ Chief Technology Office is actively working in this realm, researching and proposing ways to mitigate potential fragmentation if or when a CBDC is introduced.⁵ The proposed platform model even intends to provide non-UK residents such as tourists the option to use it. With an expected earliest build date of prototypes and pilot tests in 2025, the financial roadmap for the UK is strong.

In April, Barclays joined Innovate Finance at its ninth Global Summit, which saw over 2,000 attendees from a wide range of countries. In London’s iconic Guildhall, we heard from Sir Jon Cunliffe, who highlighted areas of opportunity for the fintech world and gave encouraging remarks on the Bank of England “aim[ing] to be forward looking, both in developing the regulatory frameworks and in developing public systems and public money necessary so that safe innovation can flourish to the benefit of all.”⁶ But what will developed regulatory frameworks look like? Could this hinder innovation? Will fintechs have to remodel their propositions? Despite the uncertainty for both nascent and mature fintechs, we look forward to guidelines that support consumer safety and pave the way for innovation.

With carefully crafted regulation and guidelines for companies, we can expect a lot more innovation as all stakeholders support a healthy environment where innovation can thrive.

Magdalena Krön
Global Head of Rise Digital Innovation
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¹ UK Government ² Triple A ³ UK Government ⁴ UK Government ⁵ Cornell University ⁶ Bank of England
India’s push towards a cashless society under the Digital India programme has laid the foundation for a financial revolution in India.

In 2016, the Reserve Bank of India (RBI) and the National Payments Corporation of India (NPCI) introduced a real-time payment system known as Unified Payments Infrastructure (UPI), which allows users to link more than one bank account to a single smartphone app and transfer money to recipients instantly. As of March 2023, UPI’s total transaction count stood at 8.7 billion.1

India has also piloted both wholesale and retail central bank digital currencies (CBDCs). The pilots have been launched in selected cities and the RBI plans to extend it to others in the coming months.2 A Digital Rupee would extend numerous benefits, such as lower transaction costs and increased efficiency by removing intermediaries like banks and payment gateways, and easier cross-border payments.3 During the Digital Rupee’s pilots, Reliance Retail, India’s largest retail chain, accepted CBDCs as a form of payment.4 In future pilots, RBI plans to test CBDCs in cross-border payments and offline functionality5 that might, for example, allow CBDC transactions to be made in remote regions with no internet connectivity.6

The rise of Web3 has generated a huge buzz around the metaverse and NFTs, and some of the Indian banks are cozying up to the idea of the metaverse. Keeping the excitement around Web3 in mind, Rise India hosted multiple events this year covering crypto-assets, digital identity, banking in the metaverse and extended reality (which blends human and computer-generated interaction). We also introduced a new initiative, Rise Masterclass, to support the emergence of low-code/no-code tech.

Rise India alumni and Rise Connect member CreditEnable was named one of India’s leading BFSI & FinTech Companies 2023 by Dun & Bradstreet India.7 Another Rise India alumni, Entropik Tech, an emotion AI startup, raised $25 million in Series B funding, led by Bessemer Venture Partners.8 Hyperface, the Bangalore-based Rise Connect member, were named FinTech of the Year in the Retail Banking category at the NASSCOM India FinTech Awards 2023. Three Rise startup founders were given the accolade of FinTech: Excellence Under 40 at a recently held payment summit conference.

This year will be an exciting one for the evolution of money and its various forms in India. Rise India is keeping a close eye on developments and we’re excited to play a key role in elevating the ecosystem.
Hello from summer in NYC! This year has gone off with a bang, giving Rise great opportunities to bring the fintech ecosystem together.

In the last week of April, Rise New York was the anchor sponsor of Empire Startups New York FinTech Week 2023. We hosted almost 3,000 visitors in our space over four days and eleven events. The buzz was palpable. From founders interested in Rise Academies to fintech investors, to corporate innovators looking for the next big thing, we were glad to partner with the likes of AARP AgeTech Collaborative, AWS, the Fintech Business Weekly podcast, Fintech is Femme, Fintech Sandbox, the Holt Xchange, Independent Community Bankers Association, Republic, RevTech Labs and Softserve on an engaging week of content.

Our monthly meetup series, NYC Fintech Coffee, was also a hit during the Fintech Nexus conference where Rise was a featured judge of the startup pitch competition, hosted by Received and This Week in Fintech.

A key focus of the featured content was the future of money. One of the week’s demos was given by Laurence Latimer, co-founder and CEO of Dinara, a secure, fully integrated platform for sending, receiving, converting and managing crypto assets for banks and other enterprise clients. “More than ever, transparency, simplicity and trust will be foundational to the long-term success of any organisation in the digital asset space. Our proactive approach to regulatory and compliance processes will be a key differentiator for providing a safe and efficient platform for our clients,” said Latimer.

Through the ebbs and flows in the US banking system this year, the fintech sector marches on. Founders are building today the tools that will scale and enable corporates to participate fully in whatever state money will take in the future. Processing payments, reducing onboarding times for both consumer and business clients and the exchange of value from dollars to rewards in the metaverse will be just a few use cases that banks are keen to explore and prepare for, today, through Rise’s fintech ecosystem.

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About Rise, created by Barclays

Rise, created by Barclays, is a global community of the world’s top innovators and entrepreneurs working together to create the future of financial services. By connecting technology, talent and trends, the mission of Rise is to accelerate innovation and growth in the financial services industry.

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