DMI ANNUAL

OMFIF Digital Monetary Institute

2022

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IS 2022 THE YEAR CBDCs BECOME A REALITY?

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With a presence in London, Singapore, Washington and New York, OMFIF is an independent forum for central banking, economic policy and public investment – a neutral platform for best practice in worldwide public-private sector exchanges.

The OMFIF Digital Monetary Institute is a high-level forum which convenes key policy-makers, technology experts, investors and regulators to explore the challenges, opportunities and implications of digital finance in the 2020s.

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Digital currencies to enjoy a bumper year

Debate around CBDCs has shifted from technical to social and political considerations, writes Katie-Ann Wilson, head of policy analysis, DMI, OMFIF.

FROM the reinvention of money to the payments revolution, the landscape of finance is changing more rapidly than it has in living memory. Central banks sit at the centre of these changes weighing their duty to preserve financial stability against the risk of stifling progress and the benefits it can bring. The OMFIF Digital Monetary Institute provides an established forum for vital discussions between these policy-makers and the private sector. Over the last year, the DMI has brought together 141 central banks in discussions pushing the boundaries of the debate on digital currencies and the future of capital markets. These discussions will continue this year and culminate at our annual central banks and digital currencies symposium in May.

The DMI annual sets the scene for the key trends in the year ahead, with contributions from our esteemed community of DMI members, drawn from a global spectrum of technology providers, multinational financial services, top four consultancy firms and digital asset exchanges.

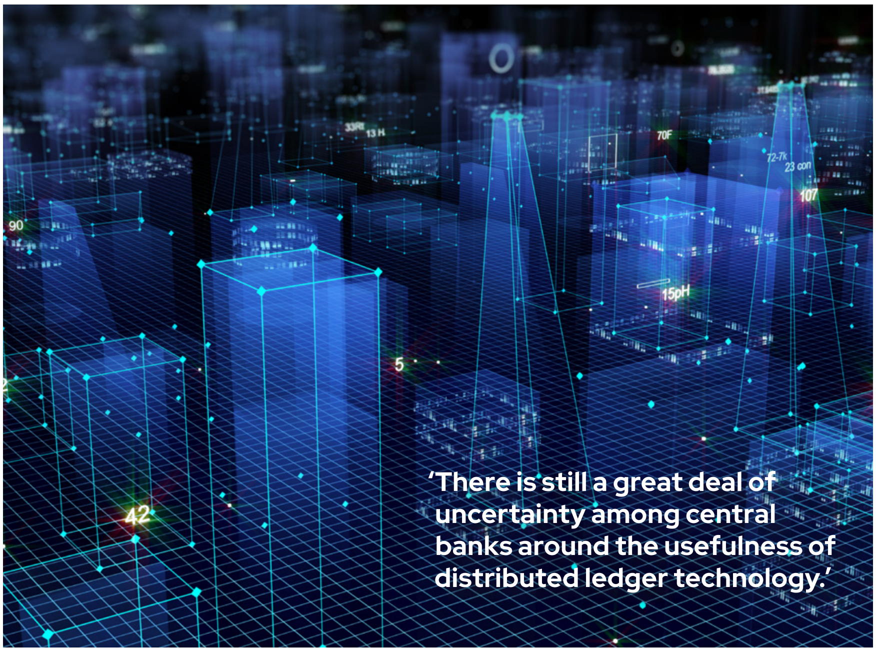
With over 80% of central banks said to be researching CBDCs, many countries are intensifying their work and moving plans forward to explore central bank digital currencies. While we have moved beyond technical questions, there are still significant social and political obstacles to the widespread adoption of CBDC, from consumer acceptance to parliamentary accountability. Contributors delve into privacy considerations and the architectural steps needed to link CBDCs into existing payments networks.

Major milestones towards revolutionising wholesale financial markets are covered, as well as the overhaul of payments infrastructure in cross-border markets. Finally, our experts anticipate a big year in the cryptocurrency space as authorities continue to clamp down on stablecoins, with European and US regulators navigating the growing world of cryptoassets as they challenge traditional legal and regulatory definitions and frameworks.

2021 highlights

The European payments and digital assets conference

Policy-makers are cautious on technology and structure, despite promising experiments, writes Philip Moore, contributing editor, OMFIF.



EUROPEAN policy-makers have more clarity on the need for retail central bank digital currency than wholesale, but remain cautious about moving too quickly on either, revealed OMFIF's European payments and digital assets conference. Discussions on CBDC for consumers have centred around the important role of public policy in offering central bank money in retail form, with discussions on wholesale becoming about a wider exploration of innovation in technology.

The priority for European policy-makers is to provide a retail CBDC to ensure that citizens still have access to legal tender as cash declines, according to **Doris Dietze, head of digital finance at the German federal ministry of finance**, and **Costanza Iacomini, head of the fintech sector at Banca d'Italia.**

Despite this drive, **Paul Tucker, former Bank of England deputy governor**, said in his keynote address that he feels the European Central Bank is dragging its feet.

There is still a great deal of uncertainty among central banks around the usefulness of distributed ledger technology. **Claudine Hurman, director of infrastructures, innovation and payments at Banque de France**, expressed that although blockchain has demonstrated efficiency, 'further work has to be done to stress scalability and security.'

Many of the official sector panellists voiced concerns that blockchain may not provide the level of security that the capital markets business demands. However, 69% of the audience approved of the proposition that wholesale CBDC and capital markets should be moved as soon as possible to an integrated DLT platform.

One positive development during the pandemic has been a strengthening of international political consensus on digitalisation. 'Prior to the pandemic, we saw plenty of national digitalisation plans, but most of them ended at the border,' said Dietze. 'We have now seen initiatives such as the joint statement from member states supporting a pan-European payments solution. The idea behind this is to foster competition in the payments area which would benefit customers as well as merchants.'

While a central bank digital currency is fundamentally a public exercise, the importance of partnerships with the private sector was also stressed at the meeting. **Wolfram Seidemann, chief executive officer of Giesecke + Devrient Currency Technology,** described this public-private discourse as being 'essential in a successful CBDC ecosystem'. He added that 'financial market players and technology companies clearly need to be invited to engage in the debate on developing use cases and new products and services, as well as applying digitalisation to existing applications.' A common objection to a digital euro is that it might damage the banking sector by eating up retail deposits. This was not a cause for concern at the meeting. Iacomini said she was confident that safeguards will be adopted to ensure that any negative consequences for banks are avoided. 'CBDCs are not designed to change the structure of financial markets, so there is no intention to undermine the positions or activities of intermediaries,' she said. ■

Central banks need clear digital currency agenda

Close collaboration between public and private spheres is needed to reap the full benefits of money's digital revolution, writes Tom Buerkle, editor, Oliver Wyman.

MONEY is undergoing one of its biggest changes since China introduced paper currency over 1,000 years ago. The number and value of cryptocurrencies have surged, raising the possibility of a financial world operating outside the control of governments and banks. China is experimenting with a central bank digital currency in a bid to reinforce state authority over the economy by taking back control of a payments system dominated by big tech players. The European Central Bank, Bank of England and Federal Reserve are considering launching their own CBDCs.

The accelerating digitalisation of economic activity, spurred on by the pandemic and blockchain, is driving this revolution. Yet there is no consensus on the best path or even the objectives of introducing CBDC. It will be vital in 2022 to start setting the ground rules for CBDCs if we hope to reap the benefits of speed, lower costs and greater financial inclusion while minimising risks to financial stability.

Central bankers should start by establishing a clear vision for what a CBDC should achieve, through consultation with governments, the public and financial institutions. The potential objectives are numerous but not necessarily compatible and the design of a digital currency will involve tradeoffs, notably between privacy versus identity-based services and centralised versus distributed control. Policy-makers need to set clear policy goals and an order of priorities for managing those tradeoffs.

Policy-makers should work with industry to gain a greater understanding of the technical considerations involved in launching a CBDC and how different solutions can impact policy. Many discussions focus on whether central banks should adopt distributed ledger technology used by most cryptocurrencies or conventional databases common in mainstream finance, but both solutions can support CBDCs. The biggest decisions centre on the role the private sector should play in building, managing and governing the new currency system, which will have consequences for the ways in which individual consumers can use the currency.

Central banks need to consider how the system's design may affect competition in financial services and how those competitive dynamics may impact policy objectives. Central banks that limit the role of the private sector may curtail competition, while empowering private sector participants to play a role as intermediaries between the central bank and actual users of the CBDC can foster innovation and competition. A solution that focuses on common standards and interoperability may strike a balance between oversight and innovation.

'A solution that focuses on common standards and interoperability may strike a balance between oversight and innovation.'

Central banks should proceed methodically, starting with technical experiments to gain experience and inform choices. They should be prepared to adjust their approach as they go. And policy-makers need to continue to learn even after launching a CBDC so they can make refinements and integrate the currency with other digital services.

A financial system that's open to everyone, fosters innovation and competition, and promotes trust and security would be a great achievement, but it won't happen on its own. Policy-makers need to proceed now with intentionality and work closely with the private sector in designing a new era of money.

2021 highlights

Spearheading digital innovation and cross-border payments

OMFIF's Arab CBDC conference heard from influential players in the digital world about how the region is moving towards a digital future, writes Philip Moore, contributing editor, OMFIF.

CASH-dominated economies are declining across the Arab world and a tide of digital money and payments solutions is rising to take their place. OMFIF held an Arab CBDC conference in October to discuss the emerging trends.

At present, this is still fragmented but 'this region is moving fast into the digital financial era,' said **Abdulrahman Al Hamidy, director general chairman of the board of the Arab Monetary Fund**, in a keynote address.

He pointed out that CBDCs could reduce the cost and increase the efficiency of cross-border payments, help provide banking services to the unbanked and enhance compliance.

Bader Al Aghbari, vice-president at the Central Bank of Oman, said that the entry of fintechs into the market is helping to disrupt payments monopolies by 'introducing added value services on top of existing payment channels... at a very low cost.'

The Covid-19 pandemic has spurred policy-makers' ambitions to move towards digital services over cash. **Rami Aboul Naga, deputy governor of the Bank of Egypt**, pointed out the cultural impediment among Egyptian consumers and businesses. 'Many would rather stay outside the financial system, because they believe that this will keep them out of the reach of the tax authorities,' said Aboul Naga, but added that they were nevertheless making progress, with the value of electronic transactions rising almost 50% over the course of 2020.

On the topic of introducing CBDCs, **Salvador Perez-Galindo, vice-president of government engagement for Central and Eastern Europe, the Middle East and Africa at Visa**, sounded a note of caution, highlighting that 'in the Middle East and North Africa, like in many other developing regions, affordable information communication technology connectivity is still beyond the reach of much of the population. So we need to think about providing offline capabilities for CBDCs.'

The discussion about the demand for digital payment alternatives, driven principally by ecommerce and young consumers, was taken up by **Wolfram Seidemann, chief executive officer of Giesecke+Devrient Currency Technology**. Demographics, he said, are a key difference between the Arab region and Europe: 'this creates an even stronger potential for digital innovation in the MENA region'. Nevertheless, the panel agreed that CBDCs are coming to the region and that it is a question of when, not if. Aboul Naga outlined some of the steps that Egypt would need to take before a CBDC could be introduced. As well as clearly communicating the constitutional legality of a digital currency, the authorities would need to ensure its operability from a technical perspective. 'We would then have to make certain that there is broad acceptance of the currency across retailers, wholesalers, government entities and service providers,' he said. 'Equally important is that users of the currency feel that their privacy and the confidentiality of their data is adequately protected.' ■

Maturing innovations will bring about change in 2022 and beyond

Digital currencies and stablecoins are a topic of intense debate and discussion. These will materialise in change soon, writes John Velissarios, digital assets, custody and CBDC lead, Accenture.

LAST year was a significant journey for many reasons, especially in the world of digital finance. At Accenture, we saw our digital exchange clients get their licenses to operate. We have been relentlessly driving projects with leading central and commercial banks to re-architect the geography of wholesale central bank digital currency money settlement and have been working with leading central banks to pilot retail CBDC from the Nordics to Eurasia.

There are all sorts of developments in this space, from digital assets to digital currencies stemming from central banks, commercial banks and exchanges, and financial market infrastructures. By the end of 2021, China's digital yuan pilot reached a milestone, getting 10% of the population – some 140m people – to use the system. Many of the world's central banks are either researching, piloting or implementing their own CBDC projects. Commercial banks are looking to issue digital assets and stablecoins as this new business unfolds.

Some topics continue to be widely debated – wholesale versus retail, the merits of token versus account, public versus private ledgers, levels of privacy and anonymity, non-residents transacting CBDC, among many others. Focus is increasing and the industry is responding with reports, points of view and white papers published seemingly every other day.

We are at the beginning of this journey and there is plenty of work to be done in the coming year to see material change in our wider financial ecosystem. With change comes both a threat and opportunity. We expect resistance from those institutions that have built a business around the friction that this new development is intended to overcome. For those that will benefit from this change, it can't come soon enough. The lines are being drawn and this conflict will play out in the coming months and years.

This innovation is not just about technology but also its strategic and economic impact, and what it enables for citizens and wider economies around the world. Retail, wholesale and cross-border applications of this innovation may transform financial markets. Those that can harvest this innovation most effectively will benefit the most.

CBDC and digital asset projects, initiatives and businesses will take time to implement. We expect more progress on that journey in 2022, perhaps with less hype but with more intent to materialise the value it can bring for the pioneers.

Environmental, social and governance topics will play an increasingly important role and the complementary combination of these topics may create the optimal mix that will promote adoption. We will see more pilots and live implementations, more products and more activity and, ultimately, more change as these innovations mature.

'This innovation is not just about technology but also its strategic and economic impact, and what it enables for citizens and wider economies around the world.'

2021 highlights

Emerging markets more likely to use CBDCs, OMFIF survey reveals

CENTRAL banks need to work with the private sector to ensure widespread availability of central bank digital currencies for consumers and educate them about the potential benefits in terms of speed, security and low cost, a report published in November 2021 by OMFIF and G+D reveals.

The report includes a survey conducted by Ipsos MORI on behalf of OMFIF and G+D which provides an invaluable insight into consumers' attitudes towards new digital forms of payments, including CBDC, in four countries: Germany, Indonesia, Nigeria and the US.

The survey findings reveal a sharp difference in attitudes towards CBDCs between consumers in developed and developing countries. ■

Consumers' attachment to cash payments remains strong, despite digital developments and the impact of Covid-19

Consumers in emerging markets are much more likely to view the potential of CBDCs favourably than those in developed markets, and the former could be ready for a 'leapfrog' moment

Safety and availability are the key concerns of consumers overall, although consumers familiar with the concept of CBDCs value security as one of its key benefits

Central banks need to work with the private sector to ensure widespread availability of CBDCs for consumers, and educate them about the benefits in terms of convenience, security and low cost

Consumers who say they would be prepared to use CBDC see a wide range of potential uses, as a complement to payment apps, cards, mobile wallets and cash, as well as a tool for financial inclusion

91% of consumers in Nigeria...

60% of consumers in Indonesia...

24% of consumers in the US...

14% of consumers in Germany...

say they are likely to use CBDCS

What features of a CBDC would be most important to you? Select three.

% of responses, by country, ■ = greatest share of responses; Source: Ipsos MORI, OMFIF analysis

	All	Germany	Indonesia	Nigeria	US
You can use a CBDC everywhere	**29.1**	13.9	**40.1**	**45.2**	17.0
Payments using a CBDC remain private	20.7	11.4	**38.3**	20.7	12.2
CBDCs are 100% secure	**33.0**	**23.1**	31.6	**51.0**	**26.2**
You can pay with a CBDC using your smartphone and at payment terminals	20.6	7.3	27.2	37.5	10.7
You can store your CBDC on a physical card	9.0	5.9	11.1	9.7	9.1
Paying with a CBDC does not require power or an internet connection	14.4	9.5	17.0	23.7	7.5
A CBDC is simple to use	22.3	13.6	35.1	27.5	13.0
You don't pay fees to use a CBDC	24.7	**23.2**	25.8	27.9	**22.1**
Payment with a CBDC takes place instantly	17.1	7.6	17.5	32.1	11.4
None of these - I would not consider using a CBDC	**23.3**	**43.9**	**7.0**	**2.7**	**39.4**
Don't know	13.1	17.5	11.8	5.5	17.6

Cryptocurrency industry poised for an action-packed 2022

Ethereum could overtake bitcoin in total market capitalisation as the altcoin space surges in 2022, writes Stephen Stonberg, chief executive officer of Bittrex Global.

FEW COULD HAVE predicted the sheer scale of mainstream cryptocurrency adoption in 2021. From bitcoin setting multiple record highs and the continued maturation of the Ethereum ecosystem to the emergence of new blockchains and the explosive breakouts of non-fungible tokens and decentralised finance, 2021 witnessed milestone after milestone. And that's without even mentioning record institutional adoption of digital assets, El Salvador's recognition of bitcoin as legal tender and the launch of bitcoin futures exchange traded funds in the US.

However, 2022 is set to be as action packed as 2021, with several trends set to dominate the year to come.

This year should continue to see the popularity of the altcoin space surge. Fueled by the gradual rollout of Ethereum 2.0 and the wild success of next generation blockchains like Solana, Cardano, Avalanche and Polkadot, the wave of smart contract supporting blockchains will see a banner year, especially as NFTs capture the imagination of more brands and creators.

As the Ethereum ecosystem expands, predictions of a 'flippening' in total market capitalisation between the two largest cryptocurrencies no longer seem so outlandish. In fact, by the end of 2022, it would not be shocking to see Solana uttered in the same breath as its more established counterparts.

As the Ethereum ecosystem expands, predictions of a 'flippening' in total market capitalisation between the two largest cryptocurrencies no longer seem so outlandish.

While the meme coin rush is hopefully over, the metaverse is just getting started. As we've seen since Facebook rebranded as Meta, the metaverse is geared to become the hottest niche in both physical and digital spaces in 2022 – particularly now that major luxury brands and even governments have started to recognise the importance of establishing virtual presences in these sprawling digital environments.

NFTs will move beyond digital art to feature more utility. We'll see innovative use cases like boarding passes, concert tickets and medical records emerge.

More countries will follow El Salvador's lead and recognise bitcoin as both an accepted form of exchange and as legal tender. Bitcoin and other cryptocurrencies have completely upended traditional finance, providing people around the world with direct access to new financial tools and services. And governments know that.

As cryptocurrencies become more and more accepted, new efforts to boost literacy in the field will emerge, making the space more accessible and easier to navigate, thus opening new opportunities for both retail traders and institutional actors. Think payrolls expensed in bitcoin and Ethereum, in addition to pension funds and retirement savings plans in various cryptocurrency projects.

Decentralised autonomous organisations will emerge next year with a tailwind of momentum, reimagining everything from how businesses are organised to how journalism operates. Instilled with the true ethos of bitcoin's push towards decentralisation, DAOs will feature heavily in the push towards a radically more inclusive web 3.0. Navigating the tricky world of decentralised finance should also become easier and more user friendly.

Next year is going to be a big year in the cryptocurrency space.

What to watch out for in 2022

2021 saw digital assets become a major preoccupation of central bankers, corporations and institutional communities. 2022 is set to see crypto considerations continue to bloom writes, Glenn Barber, head of sales, Americas, Copper.

1. China's crypto market exit will continue to benefit the US and accelerate green energy adoption

China's blanket ban on digital assets early last year created a golden opportunity for the US to rise as a major crypto industry player. New data from CB Insights show that, for the first time in four years, venture investors are backing more crypto and blockchain start-ups in the US than they are in Asia.

It was also recently revealed that one-third of the bitcoin hashrate now sits within US borders – a 428% increase from September 2020. While energy production in the US is diverse across states, some of the dirtiest mining was happening within China, so the shift represents a significant boon to the sustainability of bitcoin mining. Over the course of 2022, positive developments in green energy adoption will continue, with US-based mining companies leading these efforts.

In China, meanwhile, the development of a central bank digital currency is years ahead of other major economies. The entire world will be watching closely to see if or how the digital renminbi reshapes the financial, and possibly even political, system in 2022.

2. Banks will have a crypto strategy and become major players in the stablecoin space

Morgan Stanley became the first major US bank to offer access to crypto among its qualified clientele. Shortly after, JP Morgan, Goldman Sachs and a slew of other leading banks followed suit in offering cryptoasset-related services to private clients. In 2022, it looks certain that big banks will continue to throw their weight behind digital assets and offer a much wider spectrum of crypto services.

Throughout 2022, banks will become more involved in the rapidly growing $157bn stablecoin market. A key takeaway from the recent stablecoin report by the US President's Working Group was the call for Congress to place stablecoin issuers under a regulatory framework similar to the one governing the banking sector. This means that we may soon be welcoming US banks to the stablecoin arena. Another key motivation for banks to step into this space sooner rather than later is to prevent private entities such as Circle from becoming too large.

Given that the stablecoin market will only continue to grow in adoption and popularity, every financial regulator in the US will want to have a claim on being the primary agency to oversee this asset class. Over the course of 2022, all the major US financial regulators will battle it out to be the primary regulator for stablecoins. Whichever body ultimately ends up overseeing this market will wield substantial influence.

3. Latin America and the Caribbean to continue blazing a trail in CBDCs and overall crypto-friendliness

One of the surprises of 2021 was El Salvador

'The entire world will be watching closely to see if or how the digital renminbi reshapes the financial, and possibly even political, system in 2022.'

It is thanks to this embrace of technology that countries in the Caribbean and Latin America will continue to make headlines around the world and take innovation in the crypto industry to the next level.

coming out of the blue to become the first country in the world to accept bitcoin as legal tender. The small Central American country has since pioneered several other world firsts, such as mining bitcoin using the energy from volcanoes, the development of a 'bitcoin city' and plans to issue the world's first sovereign bitcoin bond. There will be more firsts from President Nayib Bukele in the year ahead, but also more Latin American and Caribbean countries will step up and introduce favourable crypto laws.

The Bahamas recently became the home of leading crypto exchange FTX, with Chief Executive Officer Sam Bankman-Fried confessing to having been impressed by the island's 'comprehensive regulatory framework for crypto,' adding, 'very few countries have that'. The Bahamas is also famously a pioneer in the CBDC space, having introduced the sand dollar in 2020. Barbados, meanwhile, sees the metaverse as the next frontier. It recently became the first sovereign nation to open an embassy in Decentraland (a virtual world overseen by a non-profit foundation) and allow for a tangible presence in the virtual and physical worlds.

It is thanks to this embrace of technology that countries in the Caribbean and Latin America will continue to make headlines around the world and take innovation in the crypto industry to the next level.

4. Sovereign funds and pension fund capital to step up investments in digital assets

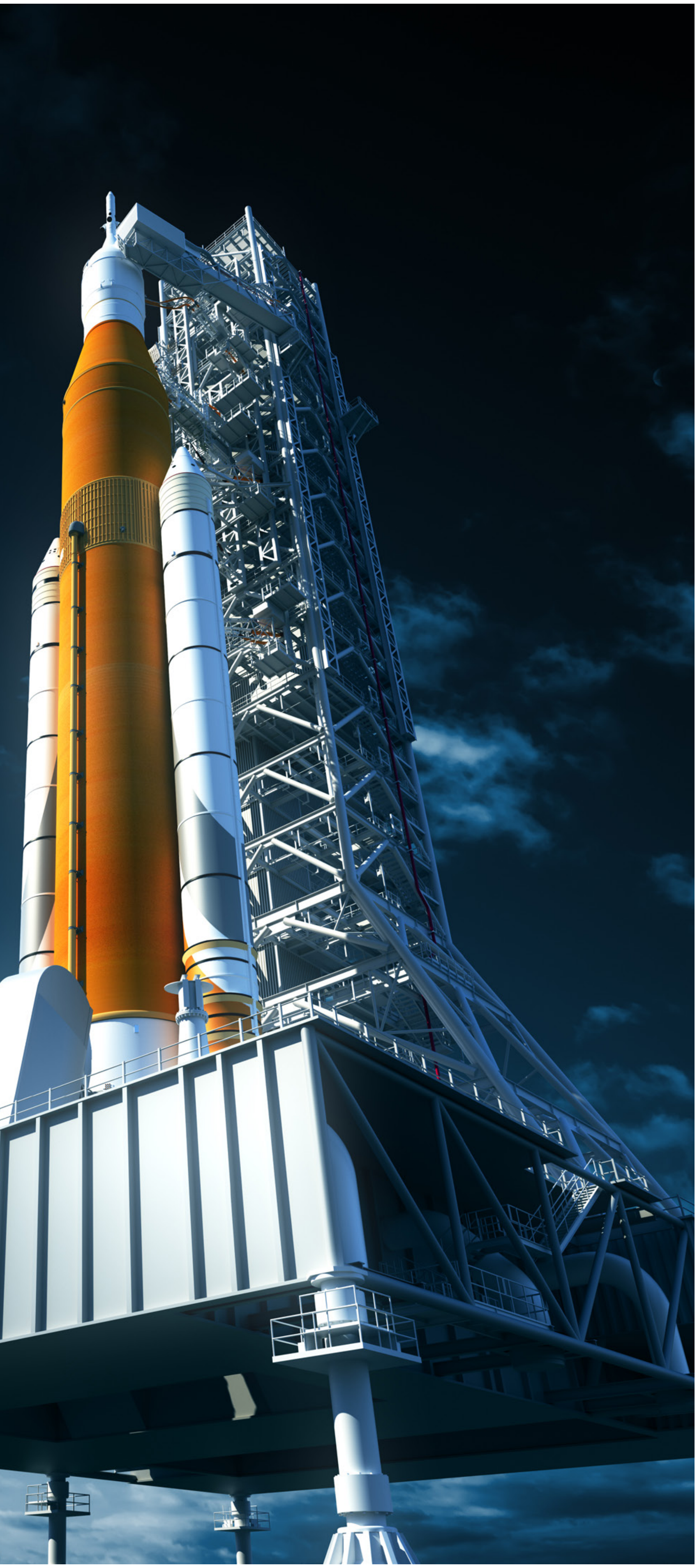
2021 saw the launch of the bitcoin futures exchange traded fund in the US, and mushrooming spot crypto ETFs in Canada, Brazil and several European countries. The plethora of solutions on the market that offer exposure to crypto while eliminating a number of the frictions and concerns of buying and holding digital assets will empower not only the largest companies in the world but even state actors to participate in crypto.

Some state actors are investing in cryptoassets by buying stakes in crypto companies. Crypto exchange giant Binance recently disclosed that it is in talks with sovereign funds about them taking a stake in the world's largest cryptocurrency exchange, while rival FTX named the Singapore sovereign fund Temasek and the Ontario Teachers' Pension Plan Board as some of its backers in the extension of its series B funding round. Most recently, Abu Dhabi's Mubadala Investment Company, which manages $243bn, became the latest sovereign fund to confirm that it will invest in the crypto ecosystem.

In 2022, we will see more sovereign and pension funds embrace digital assets. This could especially be the case as we head into a higher inflationary environment.

'2021 saw the launch of the bitcoin futures exchange traded fund in the US, and mushrooming spot crypto ETFs in Canada, Brazil and several European countries.'


FORGING
THE
FUTURE
OF
MONEY



With technological considerations sorted out, those who want to introduce a CBDC must convince the public of its usefulness, writes Philip Middleton, chair, DMI, OMFIF.

IN many parts of the world, 2022 will be the year in which retail central bank digital currencies move from theoretical construct to hard currency in waiting, with the most significant obstacles being not technical feasibility, but consumer acceptance and parliamentary accountability. Primary legislation, international regulatory commitments, establishment of new standards, consumer enthusiasm and acceptance, and political support will be among the major hurdles to overcome.

Alongside digital fiat money, we shall see a varied and complex tapestry of private means of exchange with varying levels of extent and credibility. Meanwhile, wholesale digital instruments representing both public and private money will – largely unheralded and out of the public gaze – become increasingly significant in the world's institutional and capital markets. We are embarking on a root and branch overhaul of payments infrastructures in both national and cross-border markets.

Five years ago, when OMFIF started holding roundtables with some of the world's leading central and commercial banks to explore the concept of CBDC, the participants would happily fill a small room. In 2021, the first annual OMFIF Digital Monetary Institute Symposium welcomed over 2,000 participants, including senior representatives from 120 central banks. Spurred by a combination of technological possibility, entrepreneurial energy, public policy imperatives and turbocharged by the explosion of the digital economy ignited by Covid-19, for many countries the question of the introduction of a retail CBDC has become not 'whether' but rather 'when and how'.

Today, nearly 100 central banks are undertaking serious research and development of the practical policy and implementation elements of the introduction of a retail CBDC. These range from extensive feasibility studies examining both the public policy priorities and technology options, to pilot programmes. In some cases, these include the actual introduction and implementation of a CBDC. Seven nation states have introduced a full or partial retail CBDC, encompassing both small economies, such as the Bahamas with the sand dollar, and large ones, such as China. One country, El Salvador, has introduced bitcoin alongside two existing legal currencies as its preferred digital means of exchange, but this is likely to be an idiosyncratic novelty rather than the precursor of a trend.

Within the next five years, it is almost certain that the world's leading fiat currencies will be available as public money in digital form alongside, for the moment, notes and coins. Of the world's major economies, China is already well along the path to rolling out its digital currency both domestically and potentially abroad via the Belt and Road initiative. In response, the US, despite vigorous opposition in some quarters, is moving from outright rejection to detailed consideration of the practical options. The yen is moving in roughly the same direction and the Bank of Japan will probably take its cues from the Federal Reserve. The European Central Bank has all but decided that there will be a digital euro within the next five years but is currently not prioritising its introduction. The Bank of England has very nearly committed to the introduction of a digital pound in the near term although recent political opposition may yet put a spoke in its wheel.

For these currencies, and others, the threats to monetary sovereignty and financial stability posed by private digital stablecoins and cryptocurrencies significantly outweigh the practical difficulties and reasonable reservations arguing against the introduction of a digital fiat currency. Owning a state airline may no longer be an essential feature of national sovereignty, but the ability to issue a sound and trusted currency is. If a polity abrogates its ability to offer its citizens a means of exchange, a unit of account and a store of value, the consequences both domestically and internationally could be severe. Arguably, many other major associated possible policy objectives – improving the efficiency and resilience of the domestic payments infrastructure, furthering financial inclusion, facilitating cross-border remittances and countering financial crime for example – are of second order to preserving and strengthening monetary sovereignty.

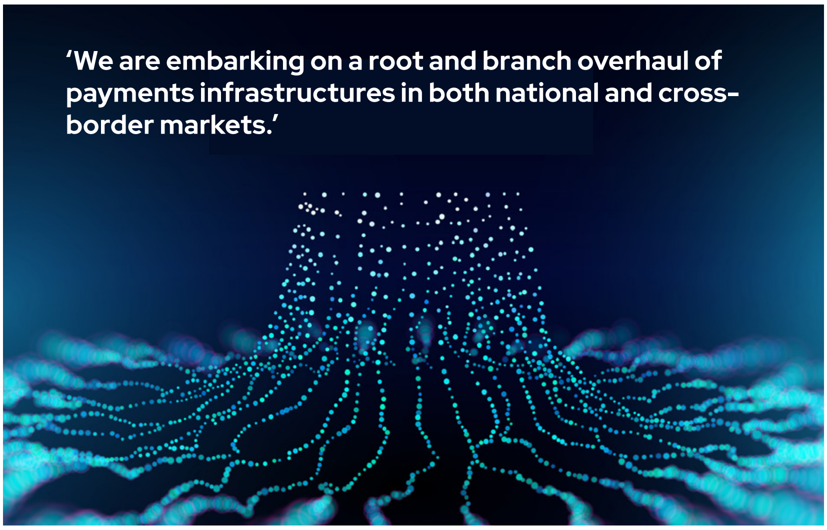
If the principle has now largely been decided, attention is turning to resolving some of the main practical difficulties and objections to a retail CBDC. For once, the biggest sticking point here is not technology. Over the last 18 months there has been close and detailed co-operation between central banks and private companies to examine the practical and technological options for introducing a CBDC. Much real progress has been made, not least in demonstrating the value of public and private brains operating in close harmony and focusing on their respective strengths and capabilities.

Some other major objections and hurdles have gained growing salience. These include the balance between transparency – the need for regulatory authorities to detect and counter financial crime or to act pre-emptively against threats to financial stability – and the personal privacy of citizens in respect of their financial affairs, even to the point of a constitutional right to anonymity. This leads into a further debate about offline and peer-to-peer capabilities of CBDC instruments. While it is perhaps difficult to envisage just how in practical terms central bank supervision of CBDC transactions would differ greatly from current practice, some critics have gone so far as to characterise CBDC as 'an instrument of state surveillance'.

A further concern is of a serious threat from CBDC to financial stability through disintermediation of commercial banks and undermining fractional reserve banking. Practical workarounds – unremunerated limited deposits and a ban on retail lending activity by central banks, for example – have been proposed. Arguably, there are far greater real current structural threats to commercial banks both collectively and individually than the theoretical ones implicit in a CBDC.

Perhaps by far the greatest obstacle to the widespread introduction of a retail CBDC, especially in liberal democracies, will be reluctance by citizens and their parliamentary representatives to accept it. This may be either because of genuine fundamental objections such as those discussed above, or incomprehension of the utility and benefits of a CBDC. But for trenchant resistance in some quarters in their parliament, it is highly probable that the central bank of Sweden would have long since introduced a CBDC. In January 2022, the conclusion by the influential UK House of Lords economic affairs committee that 'we found the potential benefits of a digital pound to be overstated or achievable through less risky alternatives' and fundamental objections to a digital dollar raised in the US Congress demonstrate that even if all practical solutions can be found, implementing a CBDC is far from a done deal.

To come full circle, if the introduction of a retail CBDC is an act of monetary sovereignty, then it requires the acquiescence, if not the enthusiastic support, of the people and of their sovereign representatives. The growing challenge for central bankers and advocates of CBDC is to move on from technocratic problems to the rather knottier ones of educating, persuading, and influencing citizens, ministers and other politicians that the digital economy is upon us and that a digital fiat currency is not only necessary but massively beneficial. The consequences of failure could be severe. ■



Europe advances digital asset legislation and regulation

As technology progresses, regulation and rules must keep up. Europe made significant strides in 2021 to aid the widespread adoption of novel financial instruments, write Markus Kaulartz, Aurélia Viémont, Tina Balzli, Clair Wermers, Sarah Maria Gollan of CMS.

LUXEMBOURG is becoming a leader in the development of financial digital assets. It has been working with the financial industry to foster innovation while amending its legislative framework.

The main trend involves reliance on security tokens to digitalise certain asset classes and reach a broader range of investors. Notable use cases include the tokenisation of real estate. Security tokens are popular with both smaller businesses and larger institutions, including some well-known banks.

For some, the so-called Swiss cryptovalley, around the cities of Zug and Zürich, is the world's blockchain capital.

This is partly due to an exceptional ecosystem, with (currently) two licensed digital asset banks, one licensed securities firm for digital assets, the SIX Digital Exchange, and further licensees in digital assets management, including a Swiss digital assets fund.

With the technology-neutral approach of its Financial Market Supervisory Authority and 2021's distributed ledger technology act, Switzerland has one of the most robust legal frameworks for crypto-based assets and related financial services.

While the first initial coin offerings from Switzerland date back to 2014, the trend is shifting to security tokens as a means of digitalising classic financial instruments.

In the Netherlands there is a strong ecosystem for tokenisation and DLT consisting of a diverse community of technology companies, the regulator for financial markets, banks, exchanges, universities, and legal and regulatory experts. These parties support tokenisation through the public-interest initiative 2Tokens.

'For some, the so-called Swiss cryptovalley, around the cities of Zug and Zürich, is the world's blockchain capital.'

The market now sees more traditional financial market parties acknowledge the potential of token technology. This is partly due to more efficient digital solutions for existing financing methods and the digitalisation of traditional securities like shares. In the field of logistics and energy, in particular, there are digitalisation initiatives involving utility tokens.

Germany's new government agreed in its coalition agreement to further foster and support the crypto industry, building on its 2018 blockchain strategy. Germany has broadly regulated cryptoassets, giving market participants the chance to conduct their business in a compliant way, while attracting players from traditional industries.

Crypto custody and cryptosecurities are the flavour of the moment. The regulator has passed a new law enabling the tokenisation of bonds.

Berlin is a huge crypto hub in Europe. The number of companies providing blockchain-related services is growing, particularly in decentralised finance applications and staking services.

The UK has seen similar trends, including public adoption of cryptoassets, with a 2021 Financial Conduct Authority report finding that 4.4% of adults in the UK held cryptoassets. The FCA is granting more cryptoasset licences, now up to a total of 22. Funding for digital asset projects reached record levels during the year.

UK policy-makers have also been busy. The Bank of England announced a consultation on CBDC and the Law Commission announced parallel consultations on smart contracts and digital assets.

State of play in CBDCs

CBDC projects are rapidly accelerating all over the world. Many countries, particularly in emerging markets, are passed their feasibility studies and deploying pilots, but others, particularly the largest, wealthiest countries with adequate payments infrastructure, are still dragging their feet. Nevertheless, many jurisdictions have advanced research projects in progress or scheduled to begin soon and it seems inevitable that the CBDC landscape will look very different by the end of 2022.

New developments

Country	Currency	Developments
Bahamas	**Sand dollar**	Launched by the Central Bank of The Bahamas in October 2020. Sand dollar e-wallets on mobile devices. Two-tier system for users with a higher wallet capacity ($500 vs $8,000) and monthly transaction volume ($1,500 vs $10,000) for accounts verified through government identification.
Nigeria	**eNaira**	Launched by the Central Bank of Nigeria in October 2021. First African country to launch a digital currency.
Kazakhstan	**Digital tenge**	Pilot project launched in June 2021. Report detailing the results of the pilot project was released in December 2021.
Sweden	**E-krona**	Report on pilot phase released by the Riksbank in April 2021. The Riksbank will continue to investigate the need for and possible effects of the e-krona on the economy, while preparing for the possible issuance of e-krona.
Turkey	**Digital lira**	Memoranda of understanding signed with technology partners for the development of a digital lira in September 2021. First phase of pilot study has commenced with a focus on testing technological solutions. Report on results of the pilot phase expected in 2022.
Jamaica	**Digital Jamaican dollar**	First batch of digital Jamaican dollars officially minted by Bank of Jamaica in August 2021. CBDC was also issued to wallet providers and distributed to retail customers during the pilot exercise. Pilot exercise conducted from May 2021 to December 2021, with results expected soon, though the Bank of Jamaica has hailed the exercise as a success. National rollout expected in the first quarter of 2022.

Key jurisdictions

Country	Status
China	Advanced pilot stage – pilot versions of digital wallet apps have been released on mobile app stores.
Europe	Research ongoing – investigation phase, which started in October 2021, is expected to take two years. Issuance expected in 2026.
UK	Research and exploration phase ongoing – consultation expected in 2022. Pushback heard from the House of Lords.
US	Research ongoing – Fed due to publish report in early 2022. Pushback from member of Congress with bill prohibiting the Fed from issuing digital currency to individuals.
Japan	Trial ongoing – experiments commenced in early 2021 and scheduled to last until March 2022.
India	Research ongoing – pilot expected in the first quarter of 2022.
Brazil	Research ongoing – consultation webinars held in second half of 2021.
Russia	Research ongoing – concept paper released in April 2021, with a prototype targeted for early 2022.
Saudi Arabia	Pilot concluded – a joint project with the UAE, deemed successful by both central banks.

Regulatory questions take centre stage

2022 could be the year where we see exciting progress towards clear regulation of new and emerging payment technologies, particularly the world of stablecoins and cryptoassets, writes Jesse McWaters, global head of regulatory advocacy, Mastercard.

THE REGULATORY PICTURE is still murky, but this year efforts on stablecoins will proceed on two important tracks: the country level and the international level.

At the country level, there will be intense regulatory focus on clarifying some critical questions about how stablecoins will be treated under local law, with a focus on balancing the need to preserve financial stability and protect consumers without hindering innovation.

This could include clarifying who has the right to issue a stablecoin, what type of payment instrument certain stablecoin designs may represent, the types of assets that will be permitted to be stablecoin reserves and the compliance responsibilities of third-party companies who support the stablecoin ecosystem.

We will also see clearer definitions around the rights of stablecoin holders and the protections that should be in place to safeguard their interests. Particularly important to watch will be the European Union's ongoing work to finalise its markets in cryptoassets regulation, proposed legislation in the UK to bring stablecoins within their emoney and payments regulatory frameworks and efforts by US policy-makers and federal regulatory agencies to delineate the future regulatory and supervisory landscape for how traditional banks and new crypto entities will be permitted to engage with stablecoins.

At an international level, organisations like the Committee on Payments and Market Infrastructure and the International Organization of Securities Commissioners will drive parallel efforts, continuing to wrestle with questions of how to ensure the safety and soundness of prospective global stablecoins that have potential to grow to a systemically important scale.

Expect policy-makers working on these issues to dig into complex questions about what constitutes a global and systemically important stablecoin, how the CPMI's Principles for Financial Market Infrastructure might apply to the unique operational characteristics of stablecoins (and underlying blockchains) and how to ensure an orderly resolution in the event of a failed stablecoin with operations across multiple international jurisdictions.

> The broader world of cryptoassets could face continued pressure to ensure high standards of consumer protection.

Regulators won't limit their attention to stablecoins. The broader world of cryptoassets could face continued pressure to ensure high standards of consumer protection and to demonstrate robust mechanisms for market surveillance and the detection of financial crime. New to the agenda for many regulators could be a sharper focus on decentralised financial infrastructure, better known as DeFi. Forays into this emerging ecosystem are likely to raise tough questions around governance, operational resilience, compliance and will almost certainly push to clarify who is accountable if something goes wrong with a DeFi platform or application.

2021 was a wild ride and there's little doubt that 2022 will be an exciting year for regulation at the forefront of payments innovation. With strong support from the private sector, and a little bit of luck, 2023 could see increased clarity on a range of important issues – opening the door for new and exciting innovations (and the regulatory questions certain to come with them).

Digital currency for innovative consumers and businesses

If 2021 was a landmark year for digital currencies, 2022 is poised to build on that success. But a few things need to be considered, writes Wolfram Seidemann, chief executive officer, G+D Currency Technology.

LAST YEAR certainly saw many countries intensifying their work and moving plans forward to explore central bank digital currencies, with over 100 central banks conducting studies or CBDC pilot schemes to foster financial inclusion and grow digital economies.

In 2022, the initiatives to issue digital money will continue to accelerate, making this year the most important one yet for the progress of CBDCs worldwide. Many countries will be looking to cross the bridge from the research stage to their first pilot projects or, like Ghana, where we are involved, reviewing insights and feedback from their first trial stage to adjust their wider rollout plans.

To offer seamless experiences and ensure interoperability, greater collaboration between the private and public sector will be needed.

Collaboration and user needs at heart of CBDC design

As the progress on CBDCs speeds up, central banks are turning their attention to the challenge of ensuring successful adoption by citizens. This is the challenge that will define the conversation in 2022. Each country's consumers and businesses have expectations and concerns, so the measures and strategy for adoption need to be tailored to meet these individual requirements, just like the digital currency itself. This is especially true as the developing digital economy brings new use cases and opportunities for efficiency gains through the adoption of CBDC.

To offer seamless experiences and ensure interoperability, greater collaboration between the private and public sector will be needed. We also need the insights from commercial banks and fintechs about user behaviour and success factors for adoption.

CBDC could allow users to participate in the digital economy independently of the currency provider, but only if it is constructed along strict privacy-by-design principles. While infrastructure and trust in the currency is guarded by the central bank, innovation, new products and services and consumer interfaces are best provided by the market.

Innovative consumers and new businesses will drive CBDC adoption

A recent G+D and OMFIF survey has revealed a significant contrast in attitudes towards CBDCs between consumers in emerging markets and countries with solid digital infrastructure. In Nigeria, where a pilot project launched in October, 91% of respondents said they were likely to use digital currencies, with 60% of consumers from Indonesia saying so too. However, these figures fall to just 24% in the US and 14% in Germany, suggesting CBDCs could offer a 'leapfrog' moment in payments in emerging markets rather than developed countries with well-established payment options.

To be adopted widely, a CBDC must be able to handle a broad variety of present and future use cases, from offline peer-to-peer payments to automated machine-to-machine transactions. G+D Filia – a universal CBDC protocol - follows a pioneering approach to enable programmable payments and performs secure consecutive offline payments to enable full digital as well as financial inclusion.

To say a new form of public money is on the horizon would be an understatement. CBDCs are offering an array of benefits to businesses and consumers, and revolutionising our relationship with the digital economy. 2022 will be defined by progress in shaping the framework, conditions and rules of CBDC, driving digital innovation and extending financial inclusion on a global scale.

CBDC has the potential to boost payments privacy

Our current digital payments system isn't private right now, but moving to a CBDC creates an opportunity to address that, writes Lewis McLellan, editor, Digital Monetary Institute, OMFIF.

IN MID-JANUARY, US Congressman Tom Emmer introduced a bill that would prohibit the Federal Reserve from issuing a central bank digital currency to individuals. Although not included in the bill, Emmer said that his objection was not against the concept of CBDCs as a whole, but against central banks collecting and maintaining personal information on citizens – something he characterised as state surveillance.

In fact, a CBDC payment network, if well-designed, could actually mean an improved landscape for privacy, solving some of the issues with our present digital payments architecture.

We are on the cusp of redefining central bank money. At present, in most jurisdictions, central bank money means physical cash. For many, there will soon be a digital counterpart, but what precisely it will look like is not yet settled.

The European Central Bank's public survey on the digital euro revealed that privacy was the issue that the highest number selected as their priority.

In some respects, this is strange. It is not as though our present digital payments network is a model of privacy. Banks, internet service providers and tech companies, as well as state law enforcement agencies, have a great deal of visibility of both our transactions and our personal data.

In a sense, our best defence against these sorts of invasions of privacy is that the legacy infrastructure on which it is held is not easily manipulated or interrogated.

A new CBDC network would not be likely to have this problem, which automatically opens the door to much more effective oversight, or as Emmer would put it, surveillance.

Given the lack of privacy afforded by the digital payment networks we use today, perhaps that's not a huge problem. Nevertheless, the World Economic Forum commissioned a survey in 2021 that showed that citizens place less trust in their governments than in their banks.

Since cash is largely private and anonymous, it makes sense that citizens would expect digital cash to emulate this, at least to some degree.

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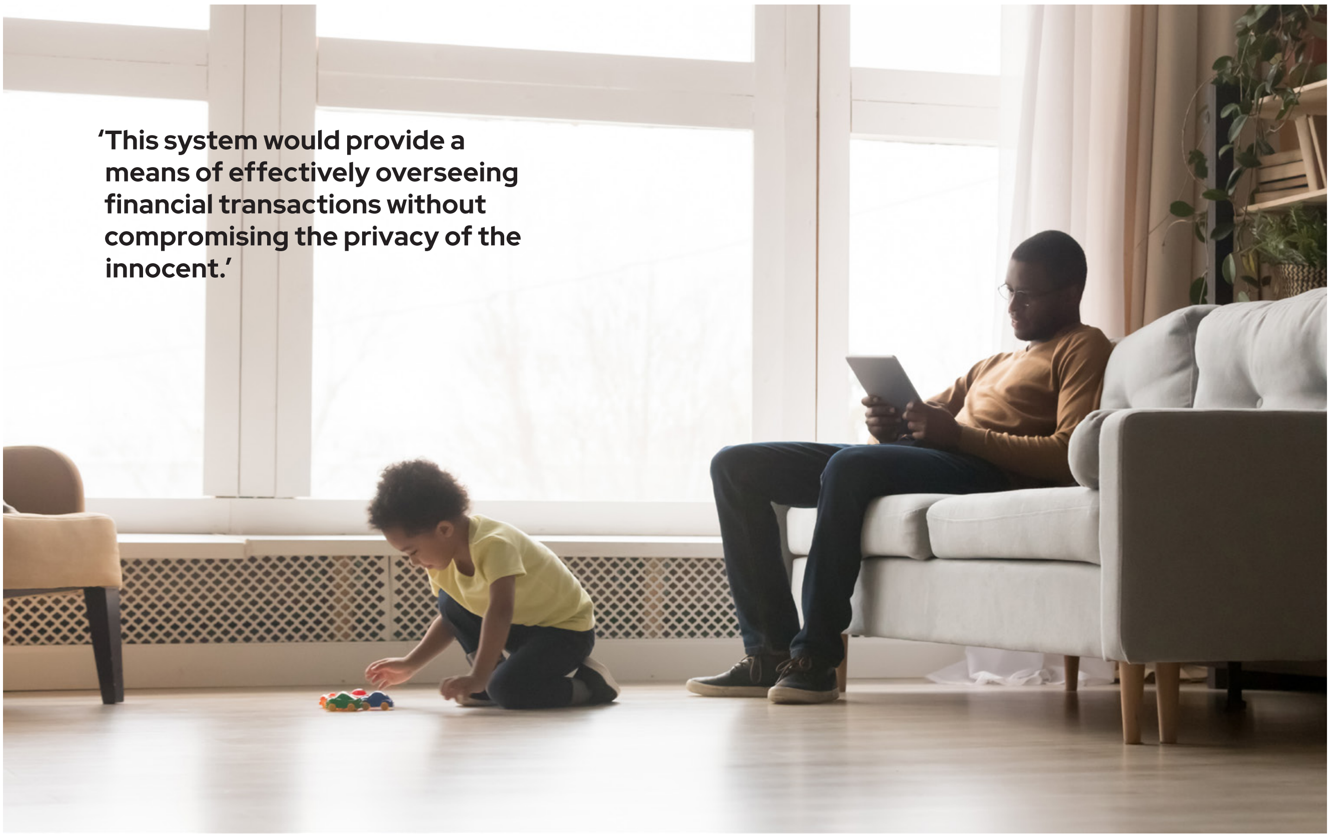

Our present payment systems notwithstanding, there is no technical reason that digital currency needs to entail a reduction of privacy. Bitcoin demonstrated that one can verify that a given unit of currency has not been spent before by the user and transfer it to a recipient without identifying either party.

Privacy in digital currency, therefore, is a design choice

From a policy perspective, it is obvious that the ability of law enforcement agencies to oversee financial transactions is desirable insofar as it can reduce criminal activity.

This necessity is often used to dismiss the idea that CBDC should have cash-like qualities. But Joachim Samuelsson, the chief executive officer of Crunchfish, passionately opposes that idea. 'If a CBDC is to provide the public with something valuable, it needs to make the qualities of cash – availability offline, ease of use, privacy and inclusivity– available in a digital form to payments services. CBDC should improve on the digital payments services that we currently use.'

To provide privacy within limits, CBDC can be transferred as a message via Crunchfish's digital cash, allowing users to receive CBDC at any digital address – an email address, even an anonymous one, a Facebook account and more. The system might even allow them to spend that money anonymously, in small amounts. As the amounts increase, the amount of know your customer checks required also increase. The limits and increments can be set according to the preferences of policy-makers.

'The key is to have the lowest possible barrier to entry,' said Samuelsson. 'Just like cash, you should be able to receive it without any onboarding process.' But there is another aspect to data security. As this KYC information is collected, it needs to be stored securely.

This is not necessarily a question of simply limiting the government's power to oversee its citizens. It is also important to protect citizens from their data being accidentally or maliciously leaked or misused.

Daniel Hardman, principal ecosystem engineer at SICPA, believes the key is what he calls reciprocal negotiated accountability. 'At present, oversight is based largely on transaction size, which means that transactions below a certain size are pretty much anonymous, while there is no privacy above a certain size. Neither of those seem like good solutions to me.'

Under RNA, citizens' personal information would be held in an encrypted form, while the decryption key would be held by an independent entity. The transaction dataset would also remain encrypted but would be interrogated by zero knowledge proofs. Transactions that seem suspect could be flagged and, pending the completion of due process, the decryption key could be released.

This system would provide a means of effectively overseeing financial transactions without compromising the privacy of the innocent.

There are a variety of data security architectures that central banks are considering, but despite the fears of Congressman Emmer, a properly designed system can make our transactions more private, not less. There is certainly room for improvement.

Expansion of the metaverse will drive shift in digital currencies

While 2021 saw a lot of proof of concepts, 2022 will see more and more fully deployed projects across many digital asset use cases, writes David Creer, global DLT and cryto lead, GFT.

2021 was the most successful year to date in distributed ledger technology, crypto and emoney at GFT. We continued working with tier one banks, exchanges and other financial services institutions. Our main focus for 2021 was on DLT for secure multiparty transaction automation, institutional crypto, such as tokenisation, and emoney, including stablecoins and central bank digital currencies.

In the DLT for multiparty transactions space, we have been included in high-profile public DLT projects such as Project Genesis (a green bonds platform for retail investors created by the Bank for International Settlements) and One Creation (a data rights marketplace). Out of the public realm, we have also been involved in many DLT use cases for financial services, as well as other sectors, the vast majority of which are focused on post trade.

In the institutional crypto space, we have partnered with Custodigit on different projects and have been working on many (non-public) institutional crypto exchanges and custody solutions, many of which are in production, predominantly in Europe and Asia Pacific. We have been involved in several non-public asset tokenisation projects, including tokenised art, both in proof of concept and fully deployed implementations.

We have reinforced our strategy to provide emoney services and have built a CBDC and emoney consultancy service. We are also currently designing and working on an innovative multi-emoney payments system that will go live in 2022, developed in partnership with key players in this field. We have been involved in the Blokbaster IV project, a simulation of central bank issued emoney settled on the Target2 payments system run jointly by the Bundesbank and Deutsche Börse stock exchange.

In 2022, these trends will continue and the uptake of DLT, crypto and emoney will increase substantially. Many of our clients are now planning for production projects and more will aim for productive implementations of projects and fewer PoCs in 2022. We will see a wider spread of CBDCs in various stages and the steady regulation of crypto, the adoption of which has the potential to not only transform the digital payments market, but currency systems as a whole.

> 'In 2022, these trends will continue and the uptake of DLT, crypto and e-money will increase substantially.'

This may have a socioeconomic impact through the introduction of more secure, faster, readily available public emoney. In 2022, various metaverses will start to be used more and the use of in-metaverse digital assets to represent currency and virtual objects will represent the start of a shift in technical, financial and regulatory paradigms.

Emoney and transaction security will be needed in the smart cities of the future, where ubiquitous payment and authentication systems with micro-transactions will underly many aspects of everyday life. At GFT, we plan to become an important part of that future, offering services in authentication, payments and services related to smart city infrastructure, which we began working on in 2020.

Managing the risk of bank disintermediation when launching a CBDC

Skeptics point to possible financial instability as reason to avoid CBDC, however concerns can be overcome, write Aman Cheema, global managing director, FIS RealNet, Andrew Turner, CBDC product strategy lead, FIS, and Julia Demidova, CBDC public policy strategy lead, FIS.

AS a new financial market infrastructure emerges, we have witnessed the continued growing popularity of digital assets which is only set to continue this year.

Money today exists as cash, reserves and bank deposits. CBDC will be a direct liability on the central bank. Right now, central bank money in digital form is not available to the public, with reserves accessible only to financial institutions with reserve accounts. To be successful, a general purpose CBDC will need to be legal tender, widely available, accepted and user-friendly. It should replicate cash-like properties and must offer new payments functionality and features, while being integrated with the existing payments landscape to source new innovation.

European Central Bank board member Fabio Panetta remarked that the digital euro must be 'attractive enough for users so it won't be swept aside by other private means of payment'. Today, the public do not perceive the differences between central bank money and bank deposits. There is a risk of bank disintermediation related to the substitution of bank deposits but this could be mitigated. There is no indication that there will be a large substitution of bank deposits to CBDC by consumers. Many of the central banks expect most of the substitution to be for cash, rather than bank deposits

Central banks have a mandate to maintain financial stability, therefore they must launch CBDC while mitigating adverse effects on the existing financial and payments ecosystem. The key talking points for the public and private sector have been whether CBDC will pose a significant challenge to fractional banking and the current monetary system. Some in the banking community, worried about the risk of bank runs should there be large scale bank deposit substitution, have been skeptical of CBDC. In response, central banks have discussed launching CBDC with limits or negative remuneration, however this will lessen its potential benefits. At FIS, we have examined different perspectives on some of the existing stumbling blocks and policy challenges. Technology cannot be examined in isolation. There are policy and design choices that have to be evaluated through testing and experimentation in order to achieve central bank objectives. The FIS CBDC and digital currencies sandbox could be used by nations to assess the feasibility and viability of launching a CBDC.

Within CBDC retail payments, the greater flows are likely to be in peer-to-peer, consumer-to-business and business-to-business payments. A more significant structural shift would see increased business-to-consumer, government-to-consumer and government-to-business payments. This may occur by 2030, subject to limits not being imposed.

There are several ways of tackling the fractional banking issue. FIS is exploring one such possible solution without imposing limits, which we are looking to test with central banks in the FIS CBDC and digital currencies sandbox. A multi-tier ledger could issue CBDC (M0) and regulated digital money (M1) while ensuring credit creation is not impacted. Regulators could set capital requirements to allow fractional banking on M1, an approach which also encourages banks and other industry players to offer accounts and wallets.

Diem faces new challenges from US regulators

Congress advised to require stablecoin issuers to be insured banks, writes Katie-Ann Wilson, head of policy analysis, DMI, OMFIF.

IN November last year, the President's Working Group released the much-anticipated 'Report on Stablecoins'. The group, comprised of the Federal Deposit Insurance Corporation and the Office of the Comptroller of the Currency, gave recommendations to Congress on new legislation to regulate stablecoins which challenges the feasibility of Diem's model.

This comes at a time of rapid stablecoin growth, with estimates of a 500% increase over the past 12 months. Regulators have become more and more outspoken on tougher restrictions, with the Securities and Exchange Commission Chairman Gary Gensler likening stablecoins to 'poker chips' and the 'wildcat banking era' in the 1830s. Today, stablecoins are predominantly used to facilitate the lending, trading and borrowing of other digital assets, but beyond this there is the potential for them to become widely used by consumers and businesses in retail payments and reduce reliance on traditional intermediaries.

'Stablecoins' has therefore become a catch all term for types of cryptocurrencies with very different use cases and varying risk levels, with financial stability concerns centring around reserve backing. On one end of the spectrum, you have dollar denominated, uncollateralised, crypto-backed tokens, where a loss of confidence could lead to a self-fulfilling death spiral seen in currency boards in the past.

On the other side are non-interest-bearing coins, 100% backed in high quality, liquid assets, cash or cash equivalents which do not engage in maturity transformation. If the velocity of coins is high enough, this will make them useful in payments as an efficient ›

Nellie Liang, US Treasury Undersecretary for domestic finance, speaking with OMFIF's DMI members on 20 January 2022.

'If Congress does not enact legislation, the regulators will try to use what authority they have.'

medium of exchange. This is illustrative of Diem's current model which has followed Basel III's capital requirements and added additional buffers to ensure it can meet redemptions on demand at any moment in time.

This makes Diem less like a security or money market fund and more akin to the concept of a narrow bank, essentially upgraded emoney or prepaid value. It is upgraded in the sense that, with a centralised reserve backing, it would take away the credit risk present in issuers of emoney as well as potentially solve interoperability challenges between ewallets.

In spite of Diem's efforts to reassure trust in redemption on demand, as well as upholding similar standards in capitalisation as traditional financial instruments, Davis Polk, a law firm, has argued that the current recommendations set out by the PWG would effectively prohibit stablecoin issuers from structuring themselves in this way.

The PWG report recommends that Congress 'should limit stablecoin issuance, and related activities of redemption and maintenance of reserve assets to entities that are insured depository institutions.' By necessitating stablecoin issuers be IDIs, the PWG is 'effectively requiring all stablecoin issuers to engage in fractional reserve banking and effectively prohibit them from being structured as 100% reserve banks (i.e. narrow banks).'

IDIs currently include both state and federally chartered banks and savings associations where deposits are covered by insurance and which have access to emergency liquidity and Federal Reserve services. These banks have minimum leverage capital ratios which allow them to engage in fractional reserve banking and invest funds raised through deposit-taking. The risk and return profile of IDIs backed only by cash and cash equivalents would be too low to be economically feasible and would therefore prohibit Diem's current model and could encourage lending activities.It is yet to be seen whether Congressional action will enforce comprehensive stablecoin legislation in 2022.
The treasury undersecretary for domestic finance, Nellie Liang, who spoke with OMFIF's DMI members on 20 January, has emphasised that 'if Congress does not enact legislation, the regulators will try to use what authority they have.' ■

Photo by Paul Morigi/ Brookings Institution

Towards faster, cheaper and safer financial markets

Major milestones towards revolutionising wholesale financial markets were passed in 2021, lining things up for an exciting 2022, writes Jake Hartley, business development, Fnality.

2021 saw rapid progress in a space which has proven itself capable of dramatic and fascinating developments.

For Fnality – a private sector initiative for the development of distributed ledger technology-based payment systems, supported by 15 major financial institutions – it has been a year characterised by the achievement of key milestones.

In our Fnality Payment Systems, participants will use prefunded settlement balances in an account directly at the central bank to make wholesale payments in real time with near instant settlement. These settlement balances are bankruptcy remote and backed one-to-one by central bank money, giving them credit risk characteristics like that of central bank money. Naturally, there is no way to bring to market such payment systems without the support of regulators and central banks themselves.

In April, the Bank of England published its omnibus accounts policy, devised to allow innovative financial market infrastructures access to central bank settlement money. Fnality was the first organisation to apply for this new account and is working towards completing all the requirements to get our account and UK FnPS operational.

In June, the European Central Bank announced their plans for prefunded settlement in Target2 – which formalises the route to account opening for Fnality in Europe – and in the US, the November publication of a report on stablecoins by the President's Working Group on Financial Markets offered further confidence, given that the prudential risks identified in the report either do not apply to the US FnPS or are addressed in its design, membership and planned implementation.

At Fnality, we are often asked questions along the lines of 'Where does Fnality "fit" in a world with CBDC?'. In the British context, these questions were recently answered by the the Bank of England. In a UK House of Lords economic committee meeting on CBDC, Governor Andrew Bailey and Deputy Governor Sir Jon Cunliffe dismissed the prospect of a wholesale CBDC in the UK. This validated our reasoning that the absence of any live wholesale CBDC solution indicates that public sector institutions instead wish to avail themselves of certain features of private sector innovations that such solutions would not possess if based on traditional design choices.

'In April, the Bank of England published their omnibus accounts policy, devised to allow financial market infrastructures access to central bank settlement money.'

We continue to be aligned with these public sector actors in recognising the criticality of wholesale payments to the global economy, and have taken significant steps towards creating a live, global network of payment systems that both fulfils the aims of wholesale CBDC arrangements and offers novel solutions to those that they do not. In the process, we will unlock novel benefits that may remain unrealised.

The launch of the Fnality Payment System in the UK will be the first step towards transforming global wholesale financial markets – a network of regulated payment systems which will increase resilience, make risk management more transparent, make processes more efficient and provide the missing ingredient in emerging tokenised markets; an on-chain digital cash asset with the credit characteristics of central bank money.

OMFIF Digital Monetary Institute

FORTHCOMING MEETING

Virtual roundtable
8 February 2022 09:30 - 10:30

Register NOW

CBDCs and cross-border payments infrastructure

Payments networks have always been hampered by a lack of interoperability. Now, with central bank digital currencies and private sector projects proceeding at a breakneck pace around the world, a new generation of payments solutions is approaching. But with varied technologies and aims driving the research, rather than solving old problems, we risk adding a new layer of complexity. This roundtable explores these interoperability issues and the range of solutions that are available to central banks to overcome and prevent such obstacles.

Speakers:

Thomas Moser, Alternate Member of the Governing Board, Swiss National Bank

David Newns, Head, SIX Digital Exchange

Timings:
14:00-15:00 (London), 22:00-23:00 (Singapore)

Register now: omfif.org/events/in-conversation-with-thomas-moser

This meeting will be conducted under the OMFIF Rules.

Public-private partnership successfully completes cross-border CBDC experiment

Project Jura shows how resident and non-resident financial institutions can safely use wholesale central bank digital currency for cross-border settlement, writes Mathias Studach, member, executive board, SDX.

The Banque de France, Swiss National Bank and Bank for International Settlements' Innovation Hub have successfully completed Project Jura, an experiment in cross-border wholesale central bank digital currency, in collaboration with Accenture, Credit Suisse, Natixis, R3, SIX Digital Exchange and UBS.

Project Jura successfully explored cross-border settlement of tokenised assets in wCBDCs on a distributed ledger technology enabled platform. It involved delivery versus payment of a tokenised commercial paper issued under French law against a euro wCBDC and a payment versus payment of a euro wCBDC against a Swiss franc wCBDC. These transactions were settled between banks domiciled in France and Switzerland.

Project Jura is novel in two ways. First, it tests a new approach to promote secure, fast and efficient cross-border settlements by extending the safety of central bank money to cross-border settlements between resident and non-resident financial institutions using multiple wCBDCs.

Second, it shows a new approach that may give central banks comfort to issue wCBDC on a third-party platform with separate subnetworks and to allow regulated non-resident financial institutions access to wCBDC.

The experiment involved real-value payments and settlements under existing legal and regulatory frameworks.

Jos Dijsselhof, chief executive of SIX, said: 'Project Jura shows that wCBDC can offer a secure, fast and efficient way to use central bank money in settling international foreign exchange and securities transactions on a single production-grade platform – our own SIX Digital Exchange. We are excited to be part of this pioneering project.'

Project Jura is part of a series of CBDC experiments announced by the BdF in July 2020 and continues the wCBDC experimentation by the SNB and BIS Innovation Hub initiated with Project Helvetia. The experiment is of exploratory nature and should not be interpreted as an indication that the BdF or the SNB plan to issue wCBDCs.

'The experiment involved real-value payments and settlements under the existing legal and regulatory frameworks.'

OMFIF Digital Monetary Institute

FORTHCOMING MEETING

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FUTURE OF CAPITAL MARKETS

Capital markets infrastructure has languished relatively unchanged for many years, but the digital revolution is accelerating. The drain on time and resources caused by antique securities settlement infrastructure is becoming more and more obvious. Banks, technology companies, issuers and regulators are working swiftly to improve the settlement architecture across asset classes.

The flagship 'Future of capital markets' conference brings together key financial market actors, regulators and multilateral institutions to explore the benefits and risks of the application of new technologies, such as distributed ledger technology, to financial assets and capital market infrastructures.

The conference marks the launch of the 'Future of capital markets'. The report includes a survey of public sector funding teams on their plans for and expectations of digital assets. Digital Monetary Institute partners will have the opportunity to contribute their expertise and thought leadership both within the report and at the conference.

Building on the success of the inaugural central banks and digital currencies symposium, OMFIF's DMI is uniquely positioned to bring key stakeholders together to move the modernisation effort forward.

Speakers to be confirmed.

Timings:
31 March 2022
09:00-15:00 (London), 17:00-23:00 (Singapore), 05:00-11:00 (New York)

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Trusted digital currency relies on secure physical banknotes

As the world move towards a digital future, people will still rely on cash. Secure bridges between the digital and analogue worlds need to be built, writes Dieter Sauer, senior vice-president and general manager, value printing, Bundesdruckerei.

CENTRAL BANKS AROUND the world are convinced that the future of money is digital. That is why many of them are looking into central bank digital currency. But a CBDC in this new world will not be a purely digitalised banknote, at least not any time soon. People will continue to rely on physical money, such as banknotes.

Money, both in the analogue and digital worlds, relies on trust. Secure identities, data and infrastructures are needed. That is what Bundesdruckerei, a leading German high-tech security company based in Berlin with a rich history and experience, creates. We help enable sovereign action by states, companies and citizens, using products and services that are based on the reliable and legally compliant identification of persons and institutions.

As an international partner for security printing, Bundesdruckerei has been producing banknotes, postage stamps and revenue stamps for two centuries. Banknotes need to be one thing above all: counterfeit-proof – something we have been reliably proving we can achieve since the mid-19th century.

Secure and unforgeable banknotes create public trust, leading to the acceptance and use of currency. Achieving this over centuries requires having a finger constantly on the pulse of scientific and technological developments. In a digital era where even the ink used in printing contemporary banknotes is becoming ever more complicated, this is no simple affair. Banknotes developed and produced by Bundesdruckerei are constantly evolving and highly secure, created in an environment where change demands precise planning and a relentless view to the future.

The digital society and high-tech trends are here to stay, so banknote printers must remain innovative.

As a manufacturer of cash, we must of course also develop digitally. Exciting technologies, such as nanomaterials and artificial intelligence, will present us with new challenges and inspire us.

Over 10 years ago, Bundesdruckerei introduced one of the most secure identification cards in the world. Knowing that IDs are going digital, we began developing an ID card for citizens' digital wallets a few years ago on behalf of the German government and with industry partners. We are respecting, and even driving, European Union regulation to ensure the highest security standards and interoperability for a European ID wallet. Projects with the idea of self-sovereign identity paired with blockchain technology complement Bundesdruckerei's portfolio in the field of secure, private identities and infrastructures.

The digital society and high-tech trends are here to stay, so banknote printers must remain innovative.

As a banknote producer, we must stay a step ahead of counterfeiters, investing heavily in innovation to continually improve. This is both a challenge and a driving force, as shown by the vast number of national and global patents we hold in security printing.

Bundesdruckerei is now applying this experience – along with our deep grounding in secure identity, hosting and trust – to deliver a secure CBDC. But people will continue to rely on physical money, especially when not all enjoy full connectivity. What will need to happen is for security features to be increased and bridges built from the analogue to the digital world.

By doing so, we are paving the way to a secure digital future.

Making CBDC work for everyone, everywhere

Linking new forms of central bank money to traditional payments rails will be key for widespread adoption, writes Catherine Gu, head of CBDC, digital currencies, Visa.

SCORES OF CENTRAL banks around the world are investigating central bank digital currencies and are thinking about building stability, resilience and security into their CBDC ecosystem. The G7 principles provide a starting point for addressing those core policy issues. As central banks dig deeper into CBDC, questions on adoption and usability are at the forefront. Once you have built the technology to power CBDC, how do you help make sure people can manage and spend their funds through a familiar, trusted and seamless experience from day one?

That is where Visa helps – harnessing our network-of-network capabilities designed to bridge new CBDC networks with the existing financial ecosystem. Visa is partnering with ConsenSys, a blockchain technology company, to develop new infrastructure that can help central banks and traditional financial institutions come together and build simple, user-friendly services on top of CBDC networks. This was recently selected as one of three winning entries at the Global CBDC Challenge hosted at this year's Singapore Fintech Fest. This was an important milestone for us to share our vision for how we can support central banks and the private sector to drive early adoption of CBDC and democratise the usage and utility of CBDC, by making it expedient, ubiquitous and familiar.

Visa's CBDC payments module is designed to provide an on-ramp for CBDC to existing payment networks, so that CBDC networks can easily connect to traditional financial service providers. The goal is a user experience that looks very familiar to how you pay today. If CBDC networks are seamlessly integrated into existing banking apps, people would be able to use a CBDC-linked Visa card at the checkout. Or tap their digital wallet – loaded with CBDC funds and payment credentials – to pay securely at any of the 80m merchant locations that accept Visa and any of its connected networks, all through retailers' existing payment terminals. It is a familiar experience for people around the world.

We are excited to enter the next phase – piloting and prototyping actual use cases – which we expect to start doing later this spring. At that point, the consultants and product experts in our global crypto advisory practice and digital currency innovation hub will be ready to work with central banks, financial institutions and fintechs to integrate and configure the CBDC payments module for their technology stacks. This is a natural extension of our commitment to support new forms of money movement and we are eager to get this important work underway.

The goal is a user experience that looks very familiar to how you pay today.

Evolution or revolution?

The latest edition of OMFIF's 'Future of payments' examines how technology can transform an industry ready for renewal.

Market participants, regulators and technology companies are poised to transform global cross-border payments into an industry fit for the digital age, a new report from OMFIF finds. The report examines the two routes towards this: evolution, through the transformative upgrading of existing infrastructure; or revolution, a great leap forward through the adoption of digital currencies, stablecoins and related technologies, such as tokenisation.

'The path of progress in upgrading the costly, slow, poorly connected and cumbersome infrastructure on which much of the global economy depends is at last under way. And not before time,' OMFIF said.

The report was launched just after the Bank for International Settlements announced that is setting up a task force on defining common features of cross-border payments service levels. And it follows an interim report from the Financial Stability Board in October 2021 that outlined five key areas of focus in which the public and private sectors can work together to improve a key priority of the G20.

'Future of payments' also takes a detailed look at how wholesale financial markets are meeting the digital payments challenge, how the remittances sector could be transformed by new technology and the challenges the industry faces from the threat of cybersecurity issues.

As well as speaking to a range of market specialists from around the world, the report also contains contributions from leading players such as Swift, Visa, JPMorgan, G+D, Algorand and MetaMui.

DOWNLOAD THE REPORT

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