Banking

CBDCs are spearheading cross-border payments innovation

Daniel Eidan at the Bank for International Settlements explains how the organisation is making headway in the latest central bank digital currency projects and the challenges that lie ahead

By **IFLR Correspondent**

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The rate of digitisation the world has experienced in just the past 24 months is truly astounding. It seems like every pre-pandemic trend has been accelerated ten-fold and everyday there is a new digital buzzword we need to come to terms with. Social medial is transforming into the metaverse, crypto markets are being overtaken by NFTs (non-fungible tokens) and billionaires are launching themselves into space. With so many flashy headlines and fancy buzzwords it's easy to lose sight of the silent and steady innovation that doesn't get as much time in the limelight. How we store, move and interact with money is changing from the ground up as our financial infrastructure evolves. This process is relevant to all economies and social classes, and its impact will be measured in years and decades to come. Money is one of humanity's greatest inventions and its innovation is essential in shaping our future.

There are many innovations happening in financial technology, but payments seem to be leading the way. Faster retail payment systems are enabling cheaper domestic solutions, cross-border services are becoming more integrated and an overwhelming majority of the world's central banks are researching, designing and experimenting with a new form of money: central bank digital currencies (CBDCs). Commercial banks, payment providers and big techs are also in the game, adding capacity to leverage digital assets, cryptocurrencies, and stable-coins. It seems like a reasonable prediction that our financial infrastructure of today will be stashed away in a drawer like an old mp3 player to make way for the never-ending stream of high-definition audio straight into our Airpods. But this sizable shift does not come without its risks and challenges.

The catalyst for this transformation is novel technology proposing solutions that highlight the inefficiencies of our existing system. The best example of this is Facebook's announcement of its own form of payment called Libra, now renamed Diem. The proposition of a private sector actor with 2.3 billion users providing this type of the service was a wake-up for policymakers and central banks. While at first a compelling proposition, this private walled garden may end up benefiting some but excluding a great many others, ultimately leading to fragmentation of the monetary system. Today's monetary system is a patchwork of solutions built over decades that are tied together through jurisdictional legal frameworks. Although complex, these systems have worked well keeping up with users' demands. But most users don't know when they click pay at the end of a ride that there can be up to six intermediaries between them and their Uber driver. Each one of them coming with a delay and a cost, hidden within the transaction settlement.

See also: *India's CBDC success requires an overhaul of existing regulations*

When these payments cross borders, the number of intermediaries goes up and so do the costs. International transactions are generally slow, expensive and opaque, due to foreign exchange conversions, compliance with regulatory frameworks in different jurisdictions, and various points of settlement along the way. Small value remittances payments suffer most with, according to some estimates, average fees of 6.5%. When considering the $540 billion worth of remittance flows sent in 2020, it's quick to see that a reduction of a few percentage points would put hundreds of billions of dollars into the hands of people who need it most. Wholesale cross-border payments are more efficient, with an estimate average cost of 1%, but this is still sizable when considering the approximate $36 trillion moved across borders in 2021 alone.

To better understand cross-border payments, one must consider the underpinning role of correspondent banking. Correspondent banking is an arrangement whereby one correspondent bank holds deposits owned by another respondent bank and provides those banks with payment and other services. By doing so, banks can provide services in jurisdictions

where they don't have access to the central bank balance sheets or provide access to banks that want access. Critically, correspondent banking is a private function and is driven by commercial motivations. And while overall cross-border payment volume and value are increasing, correspondent relationships are in steady decline, leaving entire regions without access to competitive cross-border services. The result is that often the countries that need the funds most pay the largest fees.

***See also:** Interoperability a key challenge for central bank digital currencies*

Due to these issues, the G20 has made enhancing cross-border payments a priority and has provided an action-oriented road map comprised of 19 building blocks. The BIS Innovation Hub is at the forefront of this innovation. By building hands-on technical solutions for the global central banking community, the BIS Innovation Hub is promoting novel ways to improve cross border payments, advancing the public sector's technical capacity and empowering policy and decision-makers to fulfil their mandates in increasingly digital frontiers. Our work in this area consists of building new payment systems using CBDC and improving existing ones. Multiple-CBDC is a form of new payment system and combines the objectives of two of those G20 building blocks, CBDC (block 19), and new multilateral platforms and arrangements for cross-border payments (block 17). Our mCBDC work is comprised of three main projects: mBridge, Dunbar and Jura, developed in cooperation with 10 central banks around the world. Work on improving existing systems is currently being done primarily through interlinking existing payment systems for cross-border payments (block 13) and can be seen in project Nexus.

1. The mBridge is one of the first of such projects led the Hong Kong SAR centre. It started with Project Inthanon-Lionrock, a joint initiative between the Hong Kong Monetary Authority and the Bank of Thailand to enable cross-border payment vs payment (PvP) of wholesale settlement between the two jurisdictions. PvP is a mechanism in a foreign exchange settlement system which ensures that a final transfer of one currency occurs if and only if a final transfer of the other currency or currencies also takes place. After two successful prototypes, the project expanded its membership to include the Central Bank of the United Arab Emirates and the Digital Currency Institute of the People's Bank of China. Moving forward the focus will include more advanced topics, like improving the efficiency of foreign exchange mechanisms, multi-currency liquidity, imbedded compliance, capital controls and privacy preserving transactions.

2. Project Dunbar, led by the Hub's Singapore centre, includes the Monetary Authority of Singapore, Reserve Bank of South Africa, Bank Negara Malaysia, and the Australian Reserve Bank. The focus of this project is similar to mBridge but a different set of participants, technology choices and jurisdictional circumstances is producing different outcomes.

3. Project Jura, recently concluded, was led by the Swiss centre jointly with the Banque de France, the Swiss National Bank and a private sector consortium. A continuation of another experiment, Project Helvetia, it shows that CBDC can provide advantages for securities settlement by providing delivery versus payment (DvP). DvP is a mechanism that guarantees the final transfer of securities occurs if and only if a final transfer of the payment takes place. This work was extended and enabled cross-border interoperability between different networks in different jurisdictions, including Euro CBDC, Swiss franc CBDC and digital assets in the form of French tokenised commercial paper.

4. Project Nexus is enabling cross-border retail payments in under 60 seconds across disparate faster payment systems. Because Project Nexus fits into existing regulatory frameworks, it has the potential to provide real world benefits faster than CBDC alternatives. Nexus has already published detailed technical documentation and will be building out the Nexus Gateway in 2022.

See also: *Cover story: CBDCs, the digital arms race*

The BIS Innovation Hub work shows that new payment solutions can substantially increase cross-border transfer speed from days to seconds, reduce by up to half several of correspondent banking's core costs and reduce overall settlement risk. These benefits can be even more significant for jurisdictions without access to adequate correspondent banking networks.

But there are many challenges in building these solutions that need to be overcome before these benefits are brought to bear in a large-scale environment. Each jurisdiction comes with a different domestic context that prioritises different use cases, has different legal systems and monetary and fiscal policy considerations. For example, in many countries, cash is in decline, but in others, its usage is increasing. In a declining cash environment, a central bank might be motivated to serve the public interest by providing a cheap and accessible digital public alternative in an otherwise private player dominated market. Or in the latter case, a central bank might be motivated to provide a digital alternative to cash while ensuring that protections are in place to prevent terrorist financing, money laundering and tax evasion.

Regulatory requirements coordination between jurisdictions is also a challenge for those at the forefront of the design of new alternatives. For example, know your customer (KYC), anti-money laundering (AML) and counter terrorism financing (CFT), and necessary prerequisites for payments will need to be harmonised to enable interoperable solutions across jurisdictions. Central bank demands for a high degree of autonomy and control over payment data is often at odds with the shared infrastructure that supports these solutions. Legal constructs are inherently domestic and sometimes fall short on fundamental topics, like issuance of legal tender and settlement finality in these new digital formats. To make this more complex still, new capabilities introduced by technology raise significant questions around monetary policy that need to be carefully considered by governments and policy makers. Lastly and potentially most challenging is the governance of shared projects, a delicate task especially when the project stakeholders are self-sovereign central banks.

Innovation that attracts the most attention is often not the one that matters most. Innovation is therefore not about just a big idea but the ability to deliver it. By virtue of its disruptive nature, failure is always looming. But this process is cyclical and failed innovation inspires more promising alternatives. The challenges in this process should not be a deterrent, rather a guide to improve upon and a yard stick for progress. In financial innovation and payments in particular, the road to delivery is long but incredibly rewarding. The digital acceleration we are living through presents a rare opportunity to engage and improve our financial infrastructure. So do not be distracted by flashy headlines or overwhelmed by technical buzz words. If there is one thing I have learned, it is that steady innovation is the most likely to last the test of time and the most probable to have beneficial impact on the lives of many for years and decades to come.

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