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The Three Keys to Overcoming Every CBDC Challenge and the Inside Track on the Royal Monetary Authority of Bhutan: Pilot Payment Use Case for a Digital Ngultrum

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Time to Define the Future of Money

The introduction of CBDCs will be one of the defining transformations in the history of money. But the implementation of a CBDC is complex and challenging – one of the most challenging problems we currently face globally.

How the underlying technology is implemented, and monetary policies are set over the coming decade will determine whether sovereign backed digital assets open the door to enhance global trade and financial inclusion or maintain the siloed, inefficient, and inequitable status quo.

The potential benefits for CBDCs to reform our financial system are significant: from stability, to reduced fraud, to faster audit and to greater accessibility. Financial inclusion is often touted as a fundamental goal by private payments platforms, but CBDCs could hold even greater power in empowering individuals to access fiat currency, especially in countries where banking penetration is low. Similarly, CBDCs could provide central banks new tools in terms of monetary policy to address economic crises - an application particularly relevant in our current era of economic uncertainty.

The Three Keys to Overcoming Every CBDC Challenge

Lets explore the research from Ripple, looking at the three keys to overcoming the challenges posed to CBDC:

1. Interoperability

   For a digital currency to have any utility to people and businesses, it needs to coexist and interact with other payment schemes in that domestic market. The next level of interoperability for CBDCs is the ability to work for global transactions. Without seamless cross-border functionality, most CBDC projects will significantly underachieve their potential.

   Just as the global internet thrived by early agreement on common protocols like TCP/IP, HTTP and FTP, so too should Central Banks start coordinating on CBDC standards to cover basic functions, including:
   • Transaction-level operations, such as escrow and hash time-locks
   • Identity and addressing schemes
   • Flexible routing to determine most efficient ways of transmission

This will allow CBDCs to connect with other domestic services, as well as each other, thereby enhancing their utility, lowering transaction costs and reducing barriers for new market entrants — while allowing each Central Bank to retain sovereignty.

2. Public and Private Partnerships

   The infrastructure supporting the existing financial system is vast and varied and not likely to be redundant any time soon. CBDC technology cannot replace what we already have, which is why a layered architecture model, where new systems are built on top of the existing infrastructure, makes the most sense.

   A major benefit of layered architecture is that Central Banks can call on the expertise of the private sector to implement CBDC infrastructure without compromising the integrity of the rest of its system. Many reputable private companies have developed successful digital currencies — their technology and experience can help Central Banks get initiatives up-and-running faster and more effectively than starting from scratch.

   A CBDC could be issued and managed using a private version of an existing decentralized ledger. While blockchain transactions are typically validated by many public validators, Central Banks could restrict this ability to a handful of trusted partners such as commercial banks or the different member states of cooperating unions like the European Union or Eastern Caribbean Currency Union.

   This would give Central Banks the flexibility and functionality that comes with decentralized ledgers, while retaining enough centralized control over their monetary policies and economic management

3. Neutral Bridge Currencies

   While interoperability will support the direct exchange of a CBDC in domestic transactions, many of the same, old issues with cross-border transactions will remain. In particular, supporting immediate real-time foreign exchanges, as opposed to the current 3-5 day process, will likely still require the need for prefunded currency accounts.

   Like any commercial bank or global business, Central Banks will want to avoid the increased costs and risks associated with this familiar liquidity issue. They would also welcome the ability to free up capital that could be generating value elsewhere and skews the financial system in favor of the most liquid currencies – typically those of the most powerful nations.

   A neutral bridge asset can support healthy, alternative liquidity markets that will allow for frictionless and costeffective value movement between various CBDCs in real-time. It would also enable the exchange of less liquid CBDC pairs and increase global competition by lowering entry barriers to new and smaller market participants.

The real use case from Ripple - Royal Monetary Authority of Bhutan - pilot retail, cross-border and wholesale payment use cases for a digital Ngultrum

Ripple recently announced the partnership with the Royal Monetary Authority of Bhutan, to Pilot CBDC Using Private Blockchain. This is a significant step forward for the CBDC usage, but more importantly retains Bhutans' commitment to sustainability as the only carbon-negative country in the world.

The RMA will pilot retail, cross-border and wholesale payment use cases for a digital Ngultrum in phases using Ripple's sustainable blockchain technology. Doing so will help accelerate its mission to **increase financial inclusion in Bhutan to 85% by 2023.**

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