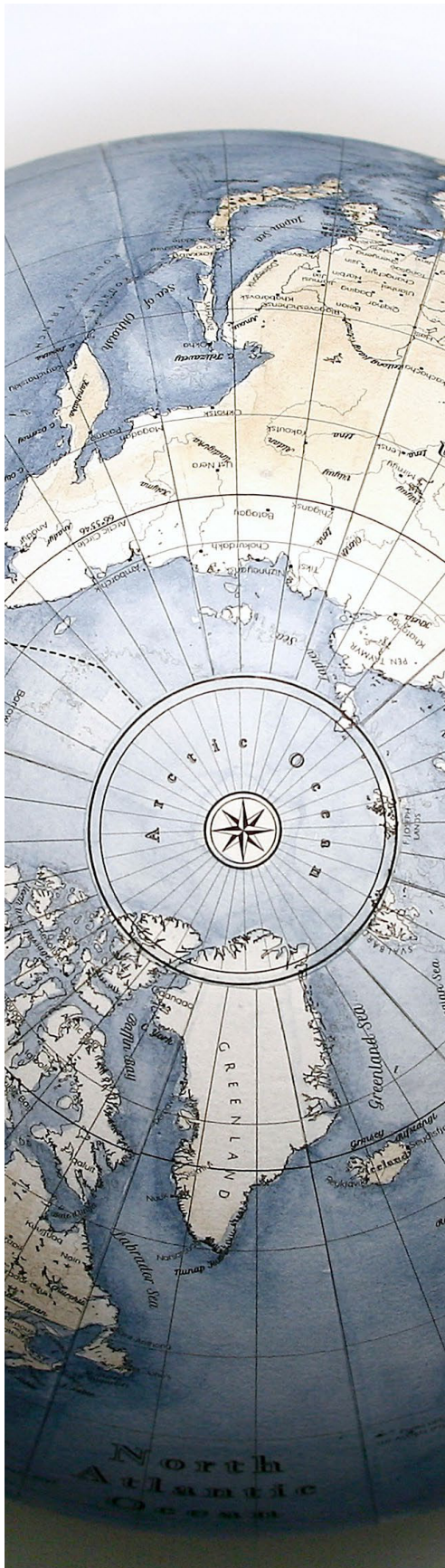


# Retail Cross-Border Remittance: A Perspective of Simulated U.S. CBDC- Philippines Corridor



*A Summary Note of The Digital Dollar Project, Accenture,  
Western Union, and BDO Unibank, Inc Report (RCBRP)*



## Summary

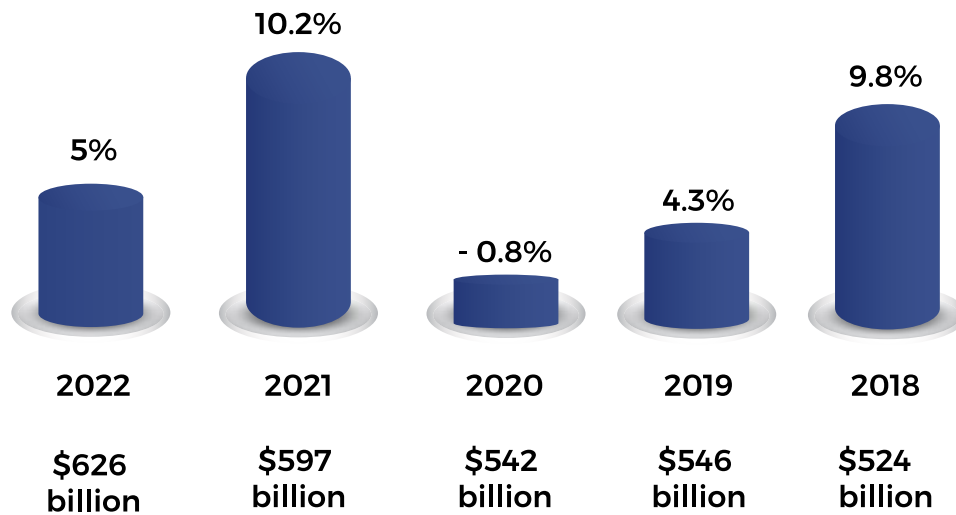
- ▶ Western Union sends approximately \$95B in remittances to customers every year. Each of these payments has a story—a migrant worker supporting their family back home, payment for critical medical care of a loved one, emergency support for a traveler who lost their luggage, and so many others.
- ▶ According to the World Bank’s Remittance Prices Worldwide Database, the global average cost of sending \$200 to LMICs was 6% in the second quarter of 2022, not very different from a year ago, and twice as high as the SDG target of 3% by 2030.
- ▶ Among developing country regions, the cost was lowest in South Asia, at about 4.1%, while Sub-Saharan Africa continued to have the highest average cost, at about 7.8%. The burden of compliance with regulations governing anti-money laundering and combating the financing of terrorism (AML/CFT) continues to restrict access of new service providers to correspondent banks.
- ▶ Digital currencies are still a relatively new and evolving technology, it transforms how migrants think about remittances and financial inclusion.
- ▶ The white paper from The Digital Dollar Project, Accenture, Western Union, and BDO Unibank, Inc explores the potential of two interoperable CBDCs to provide seamless international money transfers from the senders in the United States to recipients in the Philippines.



## What is the Global Role of Remittance Cross-Border Payments?

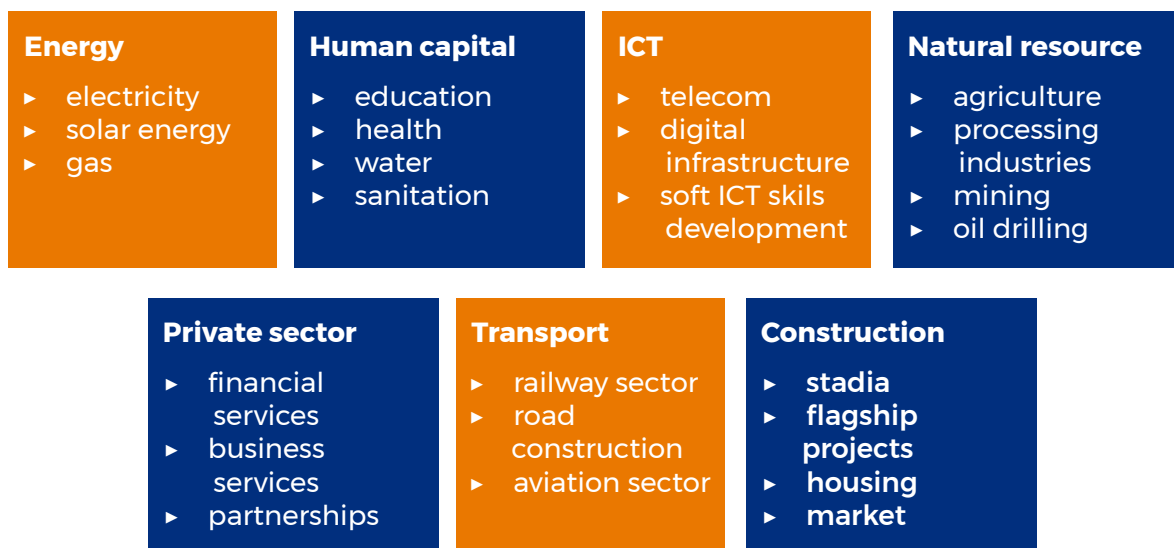
Remittance payments, which involve transferring money from one individual to another, typically across borders for personal or family reasons, play a critical role in the domestic and global economy. Although individual remittances are low in relative value (between \$200 to \$300 per transaction), the cumulative value of such payments is significant and continues to grow.

Figure 1: Remittance Flows to Low- and Middle-Income Region



Source: World Bank Group

Figure 2: Remittance FDI investment sectors in Africa

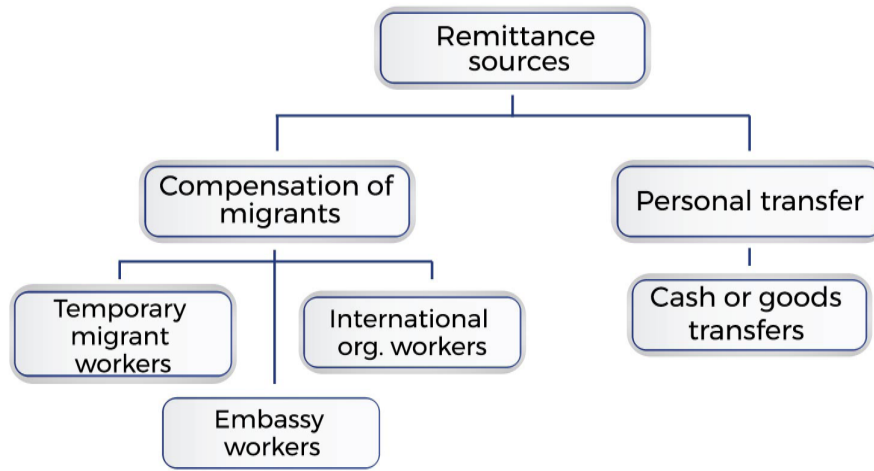


Personal remittance

- ▶ Household consumption
- ▶ Property Acquisition (land, house, etc.)
- ▶ Savings & Investment (Bonds, treasury bills, shares)
- ▶ Startup capital

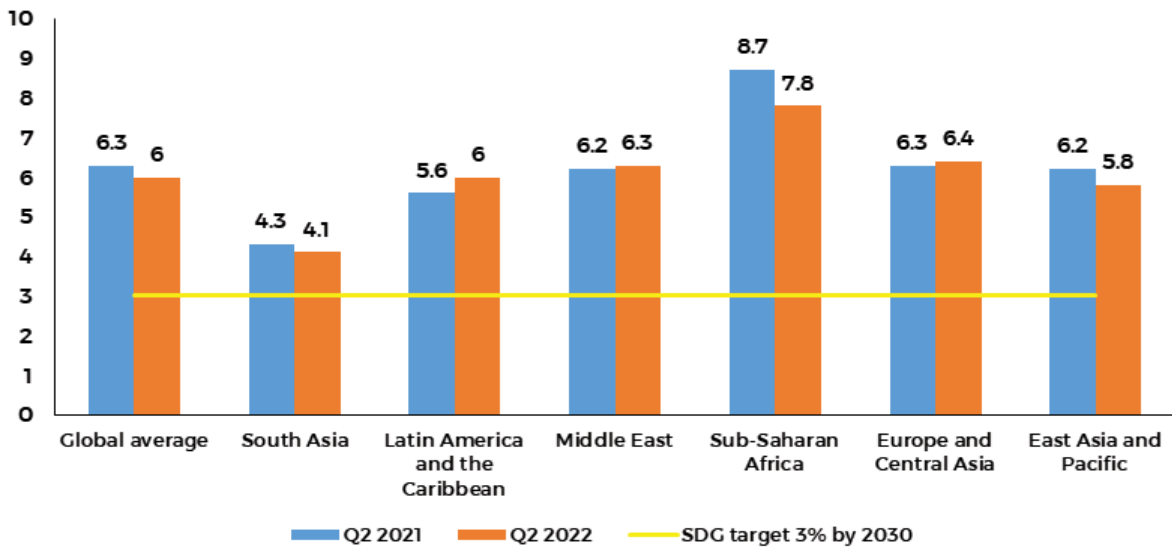
Source: Agpaytech

Figure 3: Remittance sources



Source: Agpaytech

Figure 4: Regional remittance costs of sending \$200

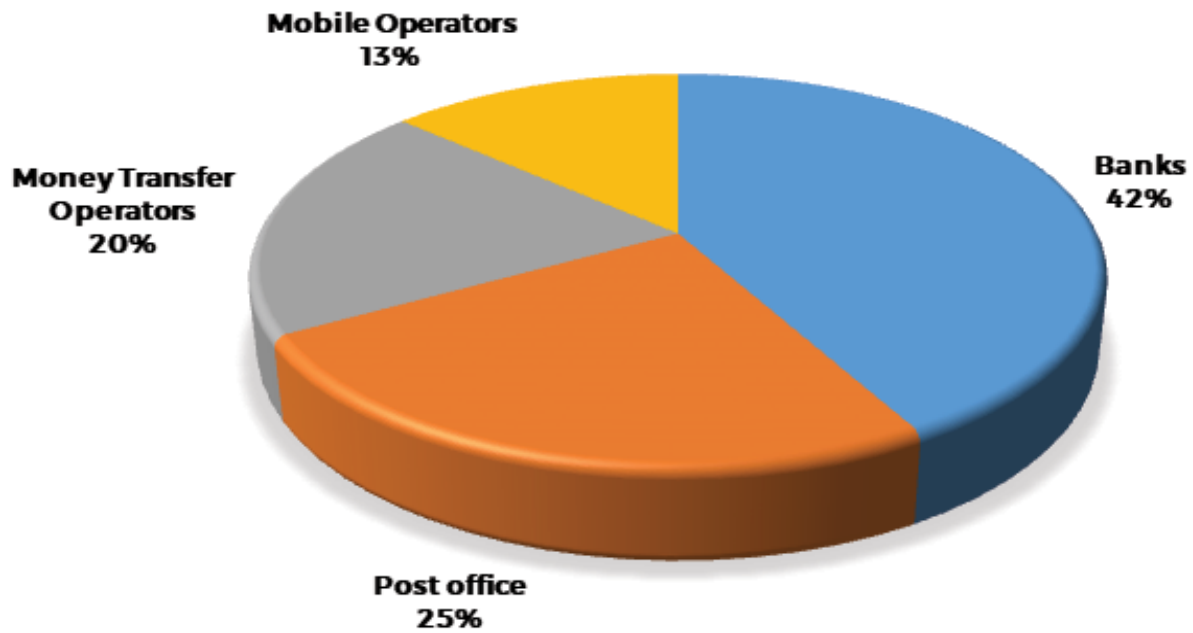


Source: World Bank



Banks continue to be the costliest channel for sending remittances, with an average cost of 11% during the second quarter of 2022; while post offices are recorded at 6.5%, money transfer operators at 5.2%, and mobile operators at 3.5%

Figure 5: Cost by Remittance Service Providers-Q2 2022



Source: World Bank



## Reducing the Hassel: Considerations for Retail Cross-Border Remittance

Exploration of a retail digital dollar requires a prudent approach to understanding the potential impacts and benefits on a wide set of stakeholders, including the general public.

Table 1: Key elements

Foundational Elements	Corridor Compliance	Customer Validation
Establish the core elements of cross-border remittances	Configure the platform to support corridor-specific requirements	Engage with end customers to confirm features and benefits
<ul style="list-style-type: none"> <li>▶ CBDC Issuance</li> <li>▶ Treasury Management</li> <li>▶ Transaction Management</li> <li>▶ Hosted Customer Wallets</li> <li>▶ Currency Exchange</li> </ul>	<ul style="list-style-type: none"> <li>▶ KYC/AML</li> <li>▶ Fraud Management</li> <li>▶ Transaction Compliance</li> <li>▶ Identity Management</li> <li>▶ Currency Liquidity</li> </ul>	<ul style="list-style-type: none"> <li>▶ Improved Accessibility</li> <li>▶ Increased Transaction Visibility</li> <li>▶ Reduced Customer Cost</li> </ul>

Source: Digital Dollar Project

# The Role a CBDC Could Play in Retail Cross-Border Remittance



There is a growing body of work evaluating the potential for CBDCs to improve cross-border payments, with a consensus forming that tokenized CBDCs can improve the speed and lower the cost of remittance payments. As noted, one of the drivers of costs in remittance payments is the need for intermediaries to fulfill cross-border payments compliantly. DLT offers advantages for remittances through peer-to-peer (P2P) transactions, atomic settlement, and enhanced transparency. In this pilot study, DLT allowed for the design of a simulated rCBDC as a P2P tokenized bearer instrument, much like physical cash, which is the preferred payment instrument for remittances. Customer transactions proceeded with fewer intermediaries, improving speed and efficiency and reducing costs.

- ▶ **Cost** – driving substantial cost improvements by reducing frictions in remittance markets,
- ▶ **Speed** – encouraging service providers to process 75% of remittance payments so that recipients have funds available within one hour of payment initiation,
- ▶ **Access** – enabling the vast majority of adults globally who send/receive remittances to make cross-border payments through services that conduct proper AML/CFT checks, and
- ▶ **Transparency** – minimizing data requirements for cross-border remittances.



# Benefits of a DLT Infrastructure for CBDCs

Table 2: DLT infrastructure for CBDC

## **Tokenized Digital Dollars**

By utilizing a tokenized digital dollar as a bearer instrument, both messages and value can be transferred simultaneously between parties, reducing settlement risk and dependence on large pre-funded accounts.

## **Atomic Settlement**

Another benefit of DLT is the atomic settlement, which refers to a settlement process where multiple transactions are settled as a single unit. During the pilot study, two forms of atomic settlement were observed: Delivery-versus-Payment (DvP) and Payment-versus-Payment (PvP).

## **Distributed Technology Architecture**

As observed through the issuance of CBDC to financial institutions and their customers, distributed networks enable the streamlining of intermediaries and the facilitation of P2P transactions. By onboarding entities onto a shared ledger, there is a reduced need to reconcile books. The availability of a decentralized liquidity exchange (DEX) can foster a competitive open market for currency pair exchanges, which may reduce FX costs.

Source: Digital Dollar Project

## **CBDC: Potential Catalyst for Financial Inclusion**

- ▶ rCBDCs could be one catalyst for financial inclusion, whereby the availability of a secure digital settlement medium may reduce costs and improve the availability of banking.
- ▶ CBDCs could complement existing efforts in the digitalization of banking, thereby removing the physical barriers to accessing internet-enabled computer and telephone banking.
- ▶ A CBDC digital wallet should also aim to produce an easy and accessible customer onboarding experience in a compliant and secure manner.
- ▶ Digital wallets could be central to increasing financial inclusion by addressing key reasons people remain unbanked.

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# The Pilot Study

The Digital Dollar Project, Accenture, Western Union, and BDO Unibank, Inc collaborated to experiment to assess the value of using a rCBDC for cross-border direct funds transfers by simulating a remittance transaction from a customer of a U.S. MTO, Western Union, to a customer of a commercial bank in the Philippines, BDO Unibank. The process is summarized in Table 3.

Table 3: Simulation of retail cross-border remittance

**Core objective** The study assessed the value of using a rCBDC for cross-border direct funds transfers by simulating a remittance transaction

- Pilot study focus**
- ▶ Increase the understanding and familiarity with digital dollars for policymakers and private sector stakeholders.
  - ▶ Utilize a CBDC sandbox to simulate the transfer of a tokenized digital dollar from a US-based MTO to a Philippine Bank.
  - ▶ Inform future remittance transaction dollar use cases and business model opportunities.
  - ▶ Refine the Digital Dollar Project’s Champion Model to support the design and development of retail digital dollars.

<b>Country &amp; participants</b>	Customer	<b>DLT DEX</b>	Customer
	<b>U.S.: MTO -Western Union</b>		<b>Philippines: Commercial Bank - BDO Unibank</b>

**Model simulations** Issuance of CBDCs by Central Banks to Financial Institutions  
Peer-to-Peer Remittance Payment with MTO

- Key Findings**
- ▶ The pilot study successfully simulated a cross-border retail CBDC remittance between Western Union and BDO Unibank customers using a DLT-based sandbox.
  - ▶ The sandbox illustrated the potential remittance flows, capabilities, and how the customer experience may be improved.

**Conclusion** The pilot study indicated a clear potential for retail CBDCs, designed as tokenized bearer instruments and distributed to end users through banks and other regulated intermediaries, to improve cross-border remittance payments.

Source: Digital Dollar Project

## Processes in the DLT Sandbox Environment

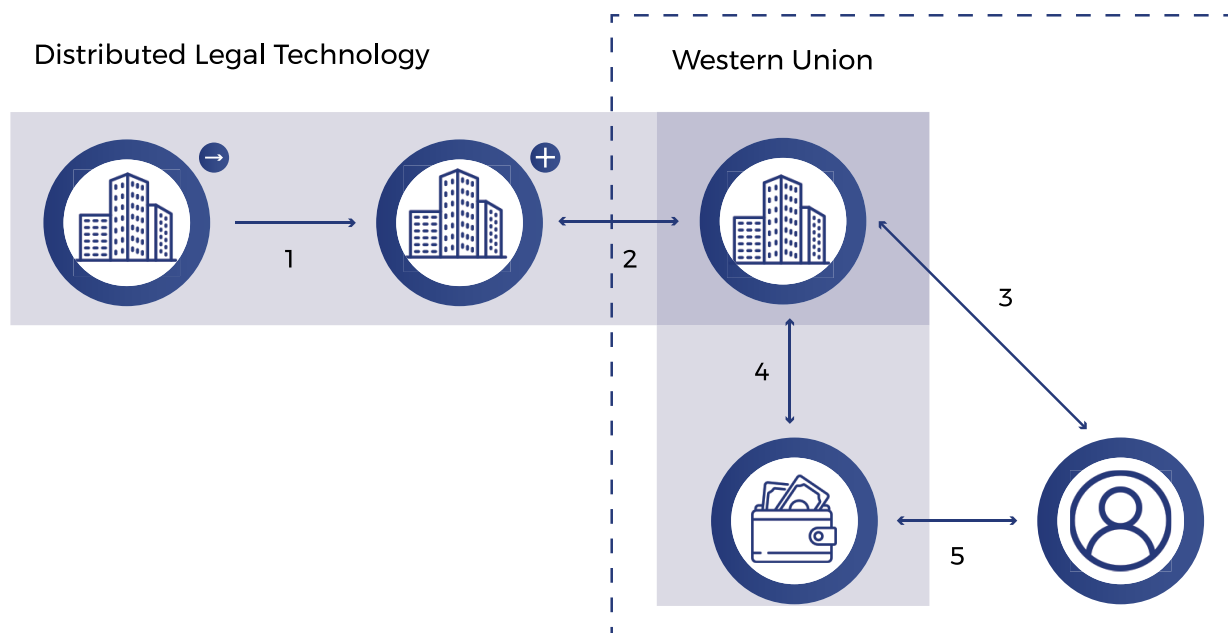
The scope of the pilot study included testing the following key processes in the DLT sandbox environment:

- ▶ Configuring and issuing CBDCs from central banks to commercial banks and regulated financial intermediaries
- ▶ Pledging digital collateral by regulated financial entities to acquire CBDC
- ▶ Onboarding retail customers to Western Union and BDO Unibank DLT nodes to simulate a retail wallet portal for transacting with CBDC
- ▶ Generating and accepting bulk-order FX spot prices, mirroring FX order generation processes of the current state
- ▶ Order Fulfilment of US CBDC for PHP CBDC through a DEX
- ▶ Exchanging US CBDC for PHP CBDC end-to-end from a sending retail customer of WesternUnion to a receiving retail customer of a commercial bank in the Philippines, BDO Unibank
- ▶ Auditing the end-to-end issuance through the redemption process for US and PHP CBDCs

## Simulation A: Issuance of CBDCs to Financial Institutions

The Digital Dollar Project experiments established the foundation for how an MTO and a commercial bank would have access to the digital settlement asset, which required making assumptions, and further explored the CBDC issuance process from a central bank's perspective. Once the CBDC token was designed and the access controls were set, the CBDC could be distributed to the second-tier financial entity and onwards to customers. The MTO or commercial bank funds their respective customer wallets, assuming they have undergone an onboarding process and have wallet accounts created on the network. The funds held in a retail wallet were part of a sub-account to the MTO, which the commercial bank has visibility into. Once logged in, the customer could view transaction history, add payees, and send remittances.

Figure 6: Issuance of CBDC to financial institutions

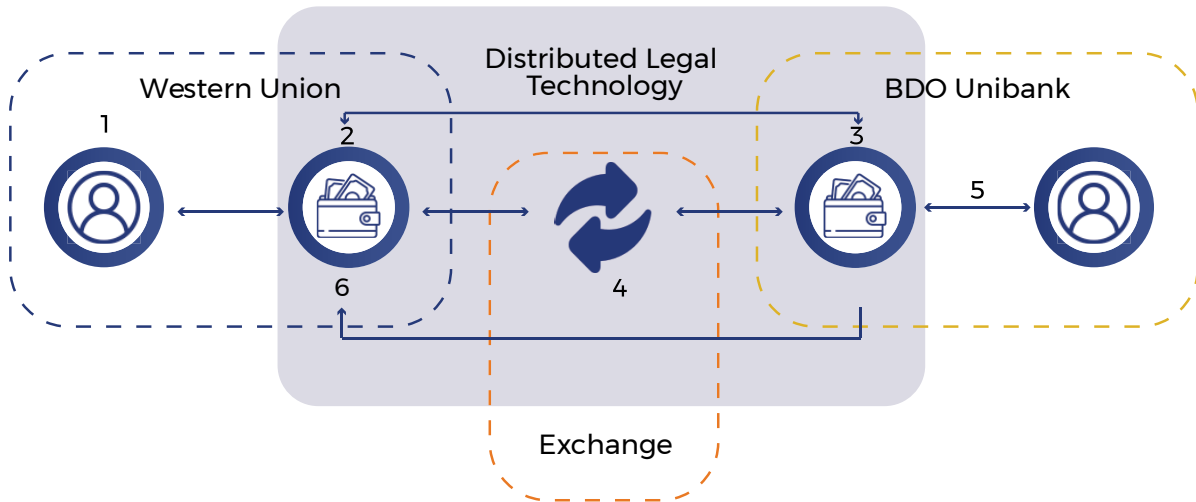


1. Central Bank issues digital dollars to commercial bank
2. Western Union's commercial bank provides access to digital dollars
3. Western Union conducts KYC/AML to onboard customer
4. Western Union hosts customer's wallet
5. Customer funds or withdraws traditional fiat in exchange for digital dollars

## Simulation B: Peer-to-Peer Remittance Payment

The next simulation showcased the P2P remittance transfer, whereby Western Union acquires PHP CBDC to facilitate the remittance transaction on behalf of a Western Union customer. Real-time FX rates were made available via a 3rd party integration to simulate exchange rates between USD and PHP.

Figure 7: P2P remittance transfer



1. The sender initiates the payment, confirms the details
2. Verification of balance in Sender's wallet
3. Verification of known Recipient
4. Value atomically exchanged between wallets
5. The recipient was notified of the payment
6. Confirmation sent back to Sender

### Benefits to retail customers

#### Reduced Risk

Instant settlement across multiple currencies reduces counterparty and credit risk for customers and their financial institutions.

#### Optimized Cost

CBDC settlement allows for transferring value and message in a single transaction, settled atomically, alleviating the cost of capital held in pre-funded accounts.

#### Enhanced Customer Experience

A tokenized digital dollar increases the accessibility and portability of money in a digital form to benefit the unbanked and underbanked.

#### Improved Visibility

Using a permissioned ledger provides institutions and their customers with enhanced visibility into the stage of a transaction, which bolsters customer trust.

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*While deciding whether to design and deploy a U.S. CBDC and a Philippine CBDC rests with policymakers in each jurisdiction, the Digital Dollar Project will continue its philanthropic mission of fostering private-sector-led exploration of a U.S*

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## Conclusion

- ▶ The team designed and deployed this pilot to better understand the potential role of a digital dollar for cross-border remittance payments. The pilot demonstrated that rather than displacing the service offerings of Western Union and BDO Unibank, CBDCs present an opportunity to modernize processes and promote efficiencies for private sector companies and their customers.
- ▶ This pilot study indicated a clear potential for retail CBDCs, designed as tokenized bearer instruments and distributed to end users through banks and other regulated intermediaries, to improve cross-border remittance payments.
- ▶ While deciding whether to design and deploy a U.S. CBDC and a Philippine CBDC rests with policymakers in each jurisdiction, the Digital Dollar Project will continue its philanthropic mission of fostering private-sector-led exploration of a U.S. CBDC, including the design benefits and challenges for a retail digital dollar. The pilot study was an initial step in evaluating a key consideration for financial inclusion, improving the speed and lowering the cost of cross-border remittances, and further research experimentation is suggested.

## Reference

The Digital Dollar Project, Accenture, Western Union, and BDO Unibank, Inc Report (2023). White Paper: Retail Cross-Border Remittance Payments. <https://digitaldollarproject.org>

## About Agpaytech

Agpaytech Ltd. is a company pioneering in the Fintech Space with a focused approach to building robust technologies for eCommerce Card Processing Solutions for Payment Service Providers (PSPs). Additionally, we provide Compliance and Regulatory Umbrella, Remittance-as-a-Service White-Label Solution, Foreign Exchange, Cross Border Payments, and digital currency technology. We have partnered with multiple banks, non-banking financial institutions, and corporate organizations to create a solid service delivery model for them and their customers to ease their international remittances and payments concerns. [Website: www.agpaytech.co.uk](http://www.agpaytech.co.uk)

United Kingdom  
AGPAYTECH LTD.  
3rd Floor, 86-90 Paul Street  
London EC2A 4NE, UK  
Email: [info@agpaytech.com](mailto:info@agpaytech.com)

United States of America  
AGPAYTECH USA LLC  
9701 Apollo Dr Suite 100  
Largo MD, 20774, USA