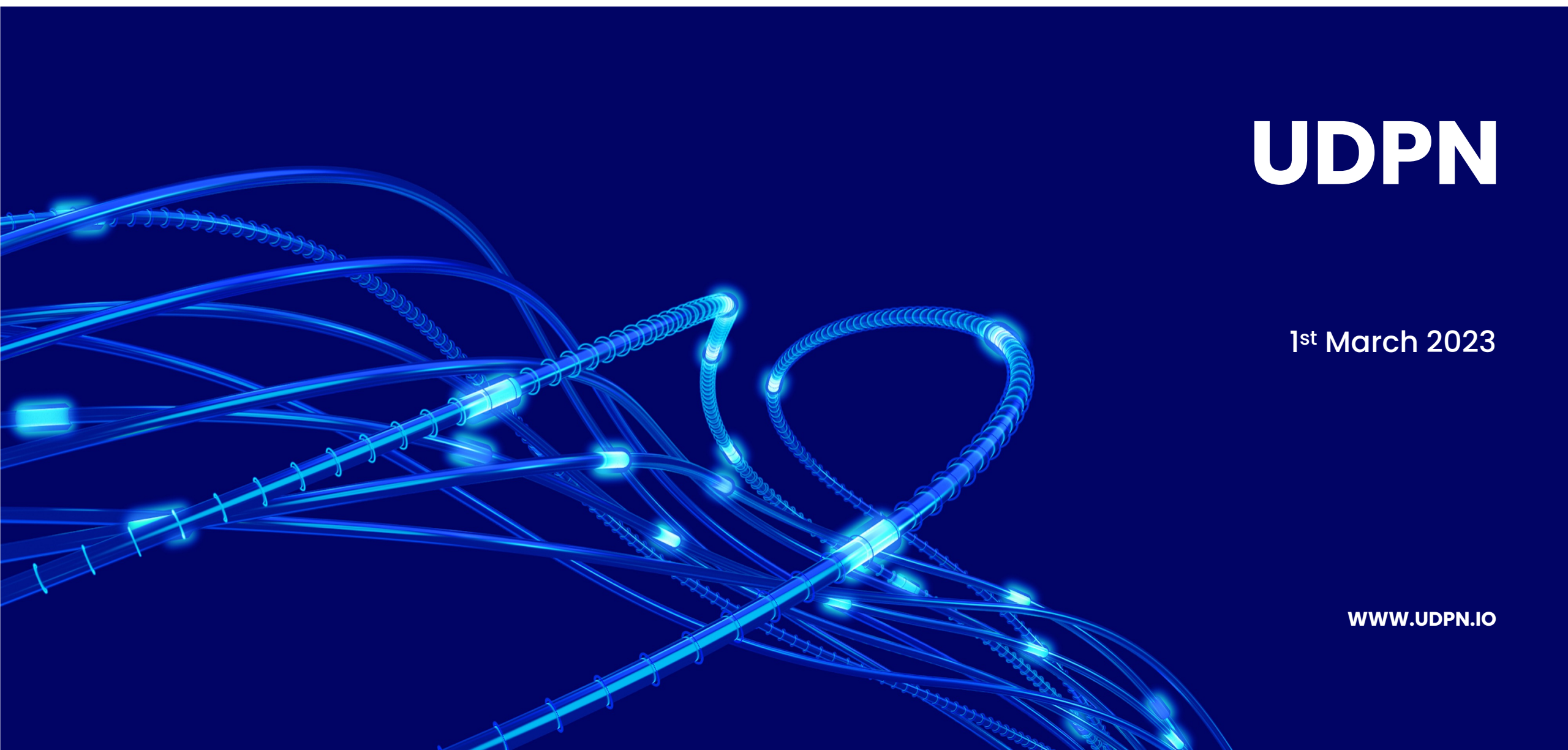


UDPN

1st March 2023

WWW.UDPN.IO





National Bank Act of 1863 brings an end to “Wildcat Banking”

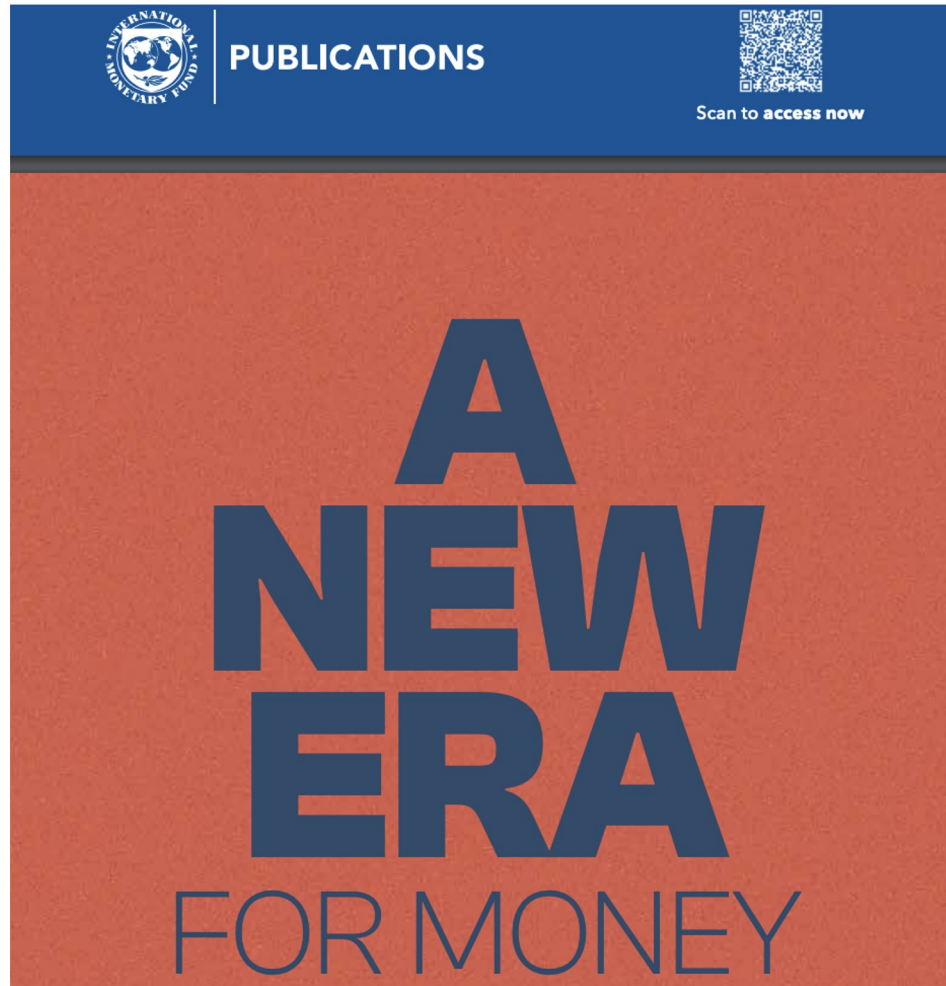


History repeating itself again in 2022: TerraUSD market cap collapsed by 99%

From \$1 to 2 cents



Regulators taking back control over digital money: CBDCs will be the reality



ASIA-PACIFIC BLOCKCHAIN CRYPTO REGULATORY
WATCH & LISTEN

World Economic Forum argues for CBDCs, Australia latest to test use-case technology

With over 100 countries experimenting with the technology behind Central Bank Digital Currencies, the World Economic Forum of Davos fame lays out its views on the potential benefits and drawbacks of CBDCs.



Central Banks in over 114 countries are working toward launching their CBDC

Project Jura: French Central Bank and Swiss National Bank



Project Rosalind: Bank of England

Project Rosalind: developing prototypes for an application programming interface to distribute retail CBDC



Project Helvetia: SIX and Swiss National Bank



Project Dunbar: Reserve Bank of Australia, Bank Negara Malaysia, MAS, and South African Reserve Bank



Project Dunbar
International settlements using multi-CBDCs



Project Icebreaker: Central Banks of Israel, Norway, and Sweden

Project Icebreaker: Central banks of Israel, Norway and Sweden team up with the BIS to explore retail CBDC for international payments



Project mBridge: HKMA, PBOC, Bank of Thailand, Central Bank of UAE

Project mBridge: Connecting economies through CBDC



The ECB will decide on a potential rollout this year

ECB publishes new digital euro report, rollout decision in fall 2023

In its second report, researchers go into the practicalities of a digital euro, even addressing concerns over privacy through the non-inference of balances.

Samuel Wan
Dec. 22, 2022 at 11:30 am UTC

2 min read
Updated: December 22, 2022 at 11:11 am

The FED is not ready yet

Digital Dollar Is a Long Way From Reality, US Treasury Official Says

- Need for CBDC currently doesn't exist, undersecretary says
- Fed won't issue CBDC without clear Congress, executive support

Digital money has several key characteristics and benefits

Replace Cash



Could replace cash (eventually)

All transactions at all points of sale and between individuals and organizations will be digital.

Same Value



Will have the same value as cash of today and be exchanged at a rate of 1:1

Programmable Money



Using regulated stablecoins and CBDCs will allow us to program functionalities that will benefit clients and entire economies.

Cost Reduction



Will eliminate costs attributable to the production, distribution/transport, storage and protection of cash

Reduce Fraud



Will eliminate the effects of counterfeiting and forgery, one way of doing this is through the use of an immutable ledger (to track accountability)

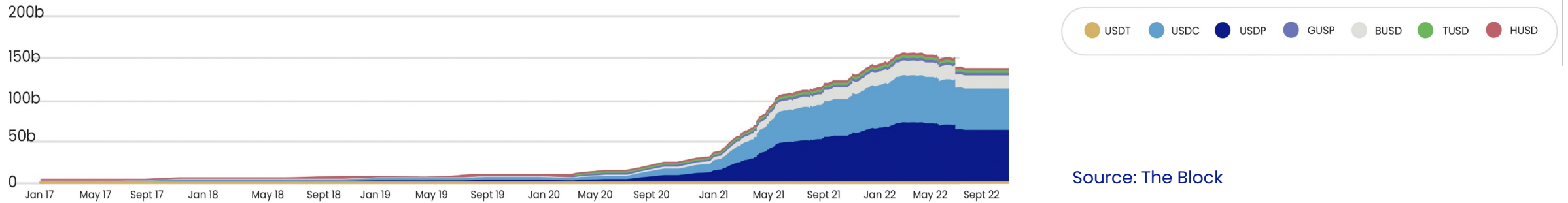
Traceability



Will enable enhanced tracking and tracing of monies earned by business and individuals for the purposes of tax collection; dissolving of black/ grey market economies; real-time monetary policies...

Regulated fiat-backed Stablecoins are the bridge to CBDCs

USDC Liquidity (~44B*) is split between 8 different Blockchains



Source: The Block

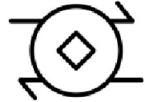
USDC Liquidity (~44B*) is split between 8 different Blockchains



*As of January 11, 2023
Source: Circle

Over USD 100 Billion in transaction costs could be saved annually

TRANSACTION VOLUME



US\$ 23.5TN

flows in cross-border transactions
in 2020

TRANSACTION COST



US\$ 120BN

(excluding FX costs) spent to
facilitate cross-border transaction
in 2020 which equals to
1/3 OF SINGAPORE'S GDP

SETTLEMENT TIME



2-3 DAYS

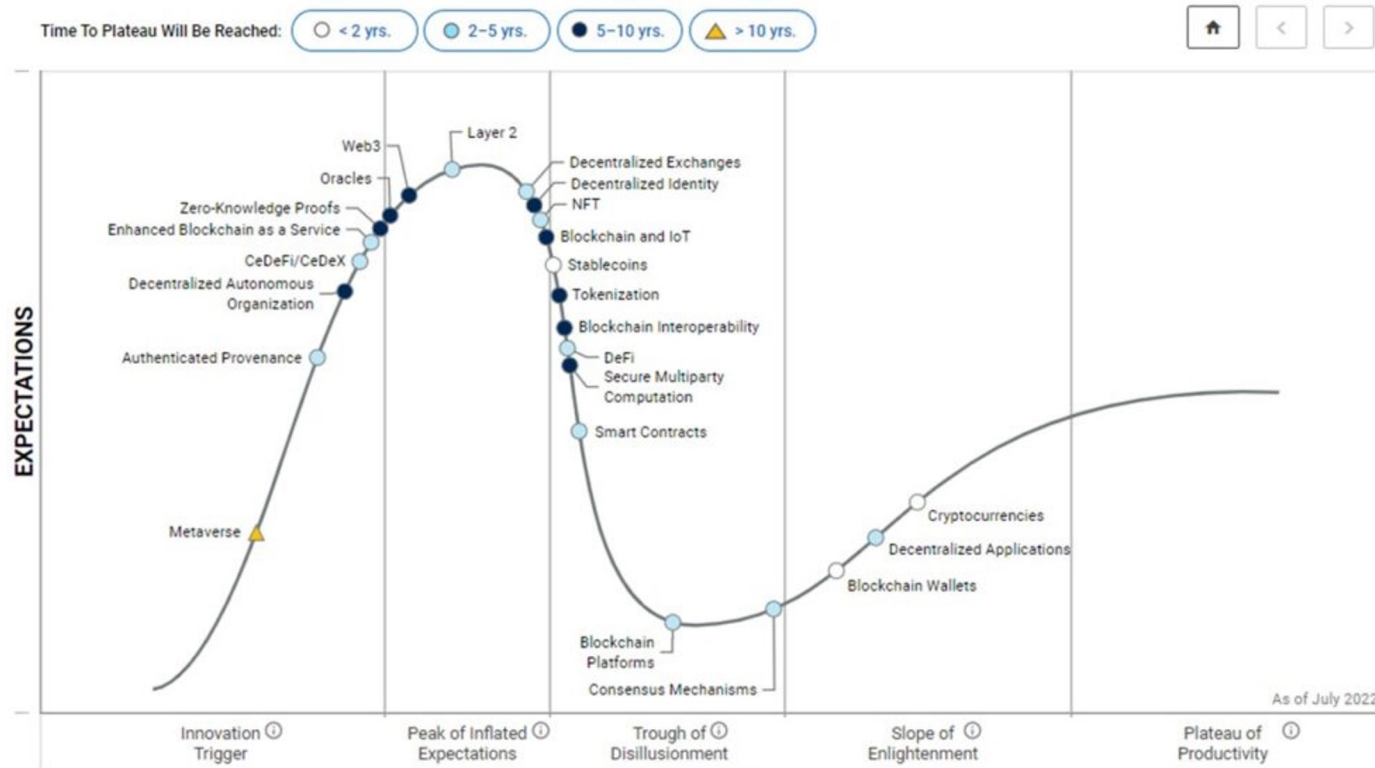
to clear a cross-border
transaction on average

**“A FULL-SCALE CBDC NETWORK WHICH FACILITATES
24/7 REAL-TIME, CROSS-BORDER PAYMENTS AND FX
PVP SETTLEMENTS COULD SAVE GLOBAL
CORPORATES NEARLY \$100 BILLION ANNUALLY.”**

Source: Unlocking \$120bn value in X-Border Payments: Oliver Wyman and JP Morgan
Source: WTO, UNCTAD reports, Oliver Wyman and JP Morgan Analysis

DLT adoption at the Enterprise-level becoming mainstream

Gartner Blockchain Hype Cycle (2023)



“BLOCKCHAIN PRODUCTION READINESS VARIES BY INDUSTRY AND USE CASE. [...] WE SEE ENTERPRISES AND EXECUTIVES TALKING ABOUT THE EFFICIENCY GAINS AND ROI GAINS THEY ARE SEEING WITH BLOCKCHAIN IMPLEMENTATIONS.”

**DANIELA BARBOSA,
THE LINUX FOUNDATION (OSSE22)**

The time to build the infrastructure of tomorrow is NOW

Regulator's Push

Central Banks are taking back control of digital currencies

The ECB will decide on a potential rollout this year
ECB publishes new digital euro report, rollout decision in fall 2023

The FED is not ready yet
Digital Dollar Is a Long Way From Reality, US Treasury Official Says

- Need for CBDC currently doesn't exist, underscores early
- That won't leave CBDC without clear Congress, executive support

Stablecoins: The Bridge to CBDCs

Stablecoins are the bridge to CBDCs

USD Liquidity (-448B) is split between 8 different Blockchains

Ethereum- \$40.7B*	Algorand- \$18M*
Avalanche- \$637M*	Stellar- \$16.4M*
Solana- \$970M*	Flow- \$11.7M*
Tron- \$1.07B*	Hedera- \$9.77M*



Market Pull for Infrastructure

Over USD 100 Billion in transaction costs could be saved annually

TRANSACTION VOLUME US\$ 23.5TN Flows in cross-border transactions in 2020	TRANSACTION COST US\$ 120BN (including FX costs) spent to facilitate cross-border transaction in 2020 which equals to 1/5 OF SINGAPORE'S GDP	SETTLEMENT TIME 2-3 DAYS to clear a cross-border transaction on average
--	---	--

"A FULL-SCALE CBDC NETWORK WHICH FACILITATES 24/7 REAL-TIME, CROSS-BORDER PAYMENTS AND FX PVP SETTLEMENTS COULD SAVE GLOBAL CORPORATES NEARLY \$100 BILLION ANNUALLY."

Business readiness of DLT Tech

Businesses are ready to adopt DLT technologies

"BLOCKCHAIN PRODUCTION READINESS VARIES BY INDUSTRY AND USE CASE. [...] WE SEE ENTERPRISES AND EXECUTIVES TALKING ABOUT THE EFFICIENCY GAINS AND ROI GAINS THEY ARE SEEING WITH BLOCKCHAIN IMPLEMENTATIONS."

DANIELA BARBOSA, THE LINUX FOUNDATION (OSSE22)

UDPN Introduction



The UDPN is a **decentralized payments messaging backbone** connecting digital currency systems to enable seamless, efficient payments of **regulated stablecoins and eventually CBDCs**.



The UDPN allows **any entity** (natural or legal) to **transfer and swap digital currencies across borders**, currencies, and systems in a **low-cost and convenient manner**.



The UDPN is a **co-governed blockchain environment** that supports **third-party smart contracts deployment** and execution for value-added financial or payment-related services.

The UDPN is the leading interoperable payments network for regulated digital currencies and leverages distributed ledger technologies to drive efficiency and transparency in digital payments.



SOLUTION

- Decentralised **permissioned network**
- **Messaging backbone** amongst various CBDC and stablecoin platforms and protocols
- Does **not directly serve end-users**, but rather **grants access to IT systems** to create UDPN DIDs, link/unlink wallets, and initiate digital currency transfers and swaps through the network
- Will only support **CBDCs and government-approved fiat-backed stablecoins**, not unregulated cryptocurrencies

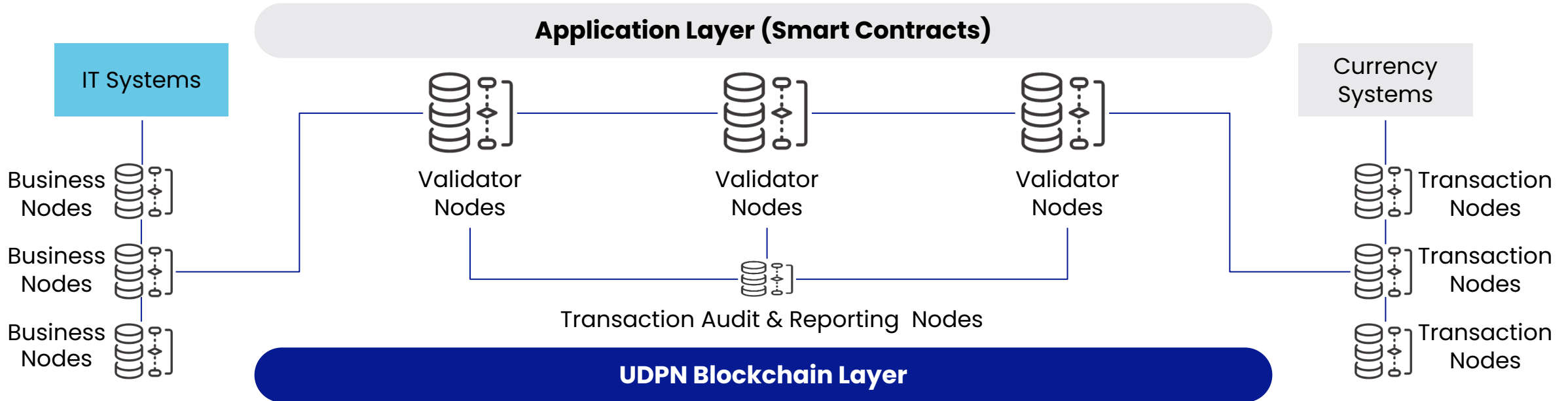


VALUE PROPOSITION

- The UDPN addresses the challenge of **interoperability** by creating a **regulated global payments network** designed for digital currencies **across all technical platforms**
- A UDPN **Decentralized ID (DID) can be linked with accounts and wallets** on CBDC and stablecoin systems: **digital currencies can be easily transferred and swapped between UDPN DIDs**, whereby all transactions would still occur within each CBDC or stablecoin system
- The UDPN hence **lends critical universal messaging and interoperability functionality** to all CBDC and stablecoin ecosystems

The UDPN is a Two-Tiered Infrastructure Open to New Applications

A payments infrastructure open to innovation



*Non-Exhaustive list of potential UDPN applications

UDPN Official PoC Use Case Portfolio

UDPN USE CASE #1

Digital Currency Transfer and Swap

UDPN USE CASE #2

Implementing the Travel Rule

UDPN USE CASE #3

Bank-issued Stablecoin

UDPN USE CASE #4

Purchasing Digital Currencies with Fiat Money

UDPN USE CASE #5

Digital Currency Payment Gateway for E-Commerce

UDPN USE CASE #6

Enabling Gasless Transactions Using Public Chain-based Stablecoins

UDPN USE CASE #7

Cross-Institution KYC Verification

UDPN USE CASE #8

Digital Asset Tokenization

UDPN USE CASE #9

Facilitating Foreign Exchange on Digital Currencies

UDPN USE CASE #10

Central Bank Digital Currency Issuing and Circulation
(Hybrid Model)

UDPN USE CASE #11

Auditable Digital Currency Transaction Service

UDPN USE CASE #12

We are live!



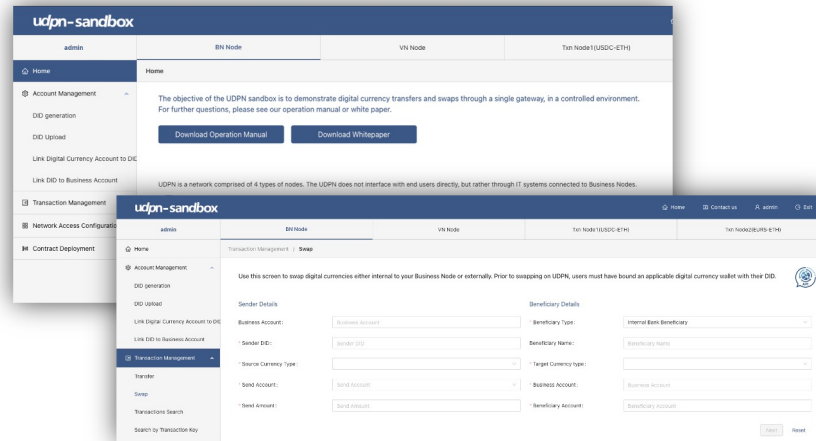
Visit our website: udpn.io

- 1. DOWNLOAD THE **WHITE PAPER**
- 2. APPLY TO JOIN THE **SANDBOX**
- 3. JOIN **A PROOF OF CONCEPT**

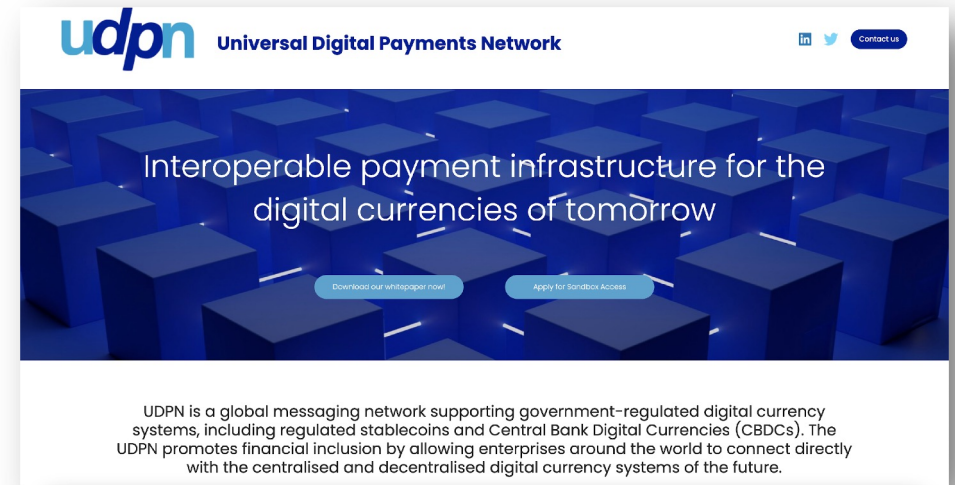
UDPN White Paper



UDPN Sandbox



UDPN Website



01

Apply to join the Sandbox

- Have a self-installed (open source) or hosted Business Node.
- Play around with the web interfaces and test transfer and swap.
- Use Business Node APIs and SDKs to connect Business IT System to the sandbox.

02

Participate in the PoC Use Cases

- Follow the development and testing of three PoC cases.
- Access the PoC cases' source code, testing results, and documentation
- Develop part of the PoC from the Business IT System with GFT's support

03

Become an equal member of the UDPN Alliance

- Vote on all UDPN matters
- Access ALL UDPN source code
- Share potential revenues after commercialization

SANDBOX

The UDPN Sandbox is Live

Following successful completion of the MVP we launched the UDPN Sandbox for controlled testing.

Objectives

1. BECOME FAMILIAR WITH UDPN ARCHITECTURE

- Understand all UDPN concepts from a practical PoV
- Access Sandbox functions via Web-based UI or BN
- Test API endpoints when available

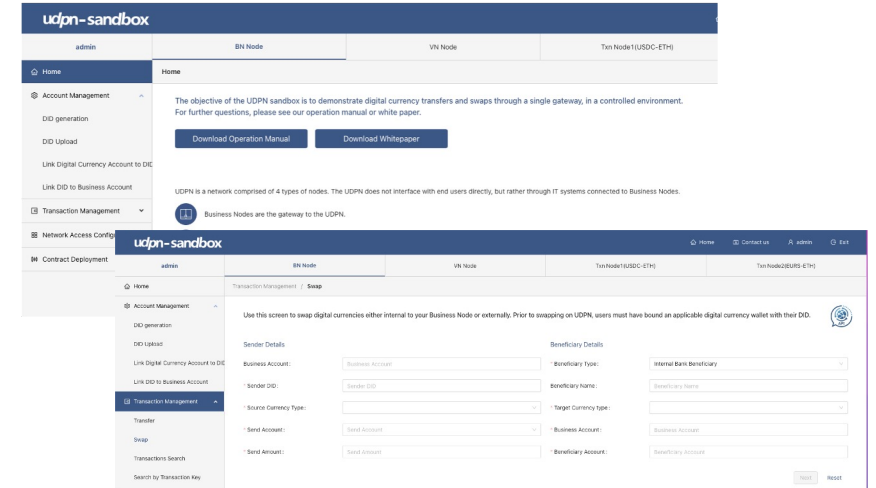
2. TEST ALL UDPN BASIC FEATURES AND SERVICES

- Report bugs in a timely manner
- Provide suggestions and comments
- Maintain a discussion forum

3. PARTICIPATE IN POC USE CASE AND FOSTER NEW IDEAS

- Enjoy the industry-leading development experience
- Brainstorm new application/PoC ideas
- Formulate future digital currency norms and rules

Web Interface



Two ways to access the Sandbox



via Web-based UI



via local Business Node APIs

UDPN SANDBOX ADDRESS:

<http://sandbox.udpn.io>

CONTACT:

To apply for sandbox access, please contact us at contact@udpn.io

ud/pn

**Thank
you!**

WWW.UDPN.IO



AGENDA

1. UDPN INTRODUCTION
2. SANDBOX & 10 UDPN USE CASES

PoC Managment

PoC Project Management Structure and Participant Roles/Responsibilities



PoC Project Team Structure



Project Manager (GFT)



Development Managers (GFT and Red Date)



Participants:



Developer:

- Develop any self-owned application based on open-source PoC codes, APIs, and smart contracts provided by GFT and Red Date.
- Participate in the development of the business requirements and technical design documents
- Attend regular weekly PoC meetings
- Contribute to the development of the PoC Use Case Report



Observer:

- Participate in the development of the business requirements and technical design documents
- Attend regular weekly PoC meetings
- Contribute to the development of the PoC Use Case Report

PoC Project Process

- 1 Participants complete Questionnaire
- 2 Participants complete MoU
- 3 Review and feedback on business requirements and technical design docs
- 4 Make decision on developer or observer roles
- 5 Kick-off meeting with all participants
- 6 Communication channel established (Slack, Telegram, etc.)
- 7 Gain access to all source codes and documentation
- 8 Developers receive daily support and Q&A on their own development from GFT and Red Date
- 9 Project Manager invites all participants to test
- 10 PoC officially deployed in UDPN sandbox
- 11 Project Manager leads development of PoC Use Case Report with participant input
- 12 PoC closed and report released

POC Timelines



All PoC Use Cases will be developed by GFT and Red Date. Participants as developers can choose to develop their own applications based on each PoC's smart contracts, APIs and source codes, or just install the Use Cases and test them in their own environment during the PoC development period. The following is the completion schedule table for the planned PoCs:

	Technical Design	Development Kickoff	Testing	Deployment	Report	Closed
PoC#1	Done	March 15th	April 15 th	April 30 th	May 15th	June 15th
PoC#2	Done	March 10th	April 15th	May 15th	May 30th	June 15th
PoC#3	March 20 th	March 25 th	April 30 th	May 31 st	June 10 th	June 15th
PoC#4	March 25 th	April 1 st	April 20 th	April 30 th	May 20 th	June 15th
PoC#5	March 31 st	April 5 th	May 10 th	May 20 th	June 1 st	June 15th
PoC#6	March 15 th	March 20 th	April 15 th	May 1 st	May 20 th	June 15th
PoC#7	March 30 th	April 15 th	May 20 th	May 31 st	June 15 th	June 15th
PoC#8	April 10 th	April 20 th	May 31 st	June 10 th	June 30 th	July 30th
PoC#9	April 20 th	April 31 st	July 15 th	August 31 st	September 30 th	October 31 st
PoC#10	April 30 th	June 1 st	August 15 th	September 30 th	October 31 st	December 31 st

Coming POC Milestones:

- Step 1: Onboarding PoC Use Case Participants
- Step 2: Participant Questionnaire and MoU
- Step 3: Team Assembly, Slack/Telegram, and GitHub Setup
- Step 4: Business/Technical Design, Work Allocation
- Step 5: PoC Use Case Development Management
- Step 6: Testing, Deployment, and Documentation
- Step 7: PoC Use Case Report
- Step 8: Project Closing, Report, Press Release (Optional), and Demonstration

The Process to Deploy New Applications on UDPN

01

Enterprise Business Node owners can deploy their smart contracts/applications on the UDPN network. These third-party smart contracts can be used for internal purposes only or open for other Business Nodes to call.

02

All Validator Node owners need to vote to allow the deployment of any third-party smart contract.

03

The smart contract owner or whoever calls the smart contract must pay a standard network fee to execute transactions.

04

If the smart contract is a paid service opening for other Business Nodes to use, UDPN Alliance will have a revenue-share deal.

05

The smart contract can be executed by any Enterprise Business Node owner at any time with the smart contract owner's permission.

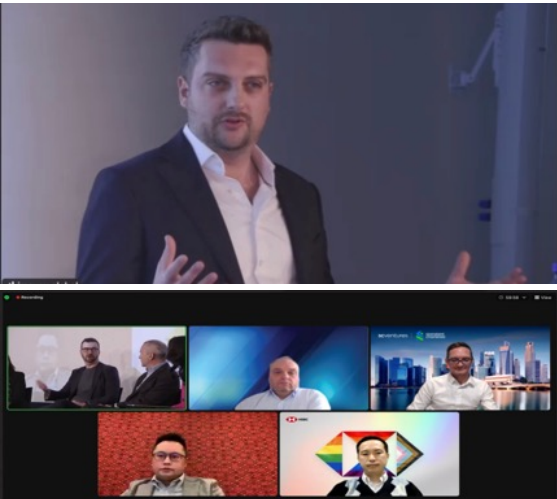
06

The smart contract can only be called by regular Business Node owners after becoming a UDPN basic service like transfer and swap through an application process to the UDPN Alliance.

We are live!



📍 **UDPN launch event (in person and virtually) at Davos during the World Economic Forum week 2023.**



Discover [UDPN.io](https://udpn.io)

The UDPN is one of the most advanced payment infrastructure

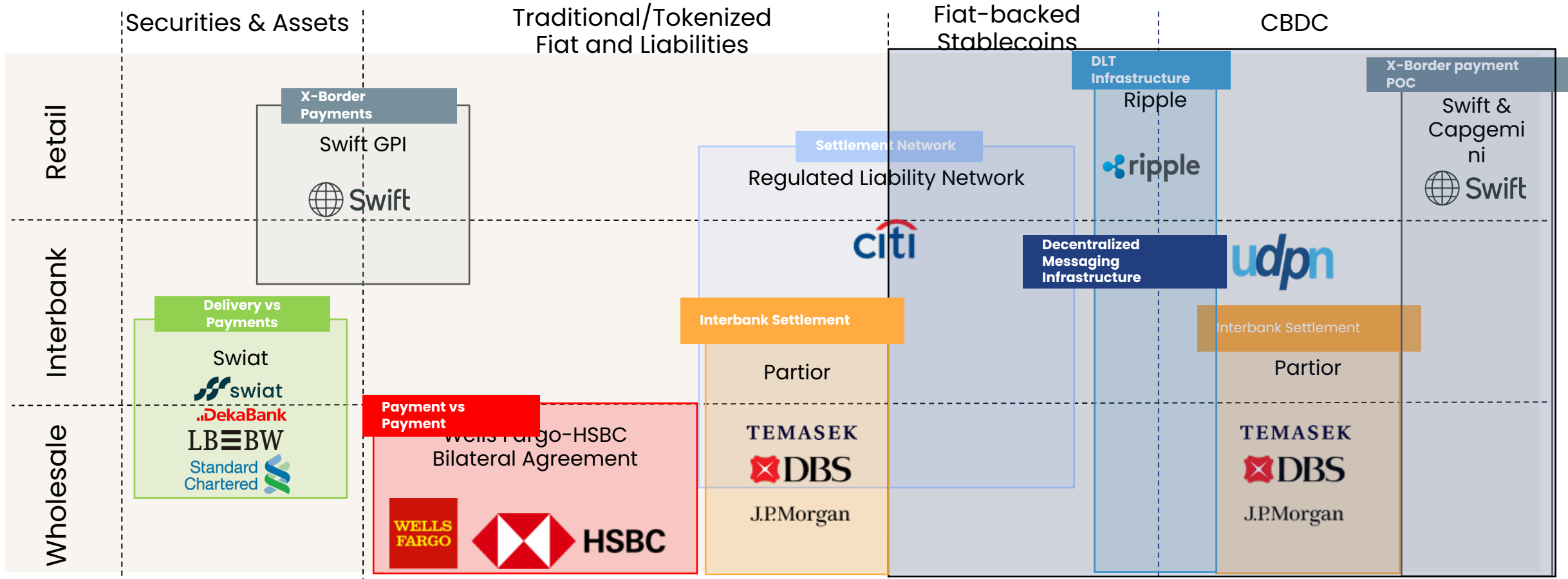


	UDPN	mCBDC Bridge	RLN	Ripple	Partior	SWIFT
Focus	Universal	Wholesale	Wholesale	Cryptocurrency	Wholesale & Interbank	Wholesale & Interbank
Asset Focus	Regulated Fiat-Backed Stablecoins & CBDCs	CBDCs	CBDCs	All digital currencies linked back to cryptocurrency	Fiat Money	CBDCs, tokenised assets
Targeted Customers	All businesses including Financial Institutions	Central Banks, Commercial Banks	Public and private regulated Financial Institutions	Individuals, FIs and traders	Financial Institutions	Commercial Banks and Central Banks
Governance	Decentralised, no entity in control	Individual governance of its own system	Centralized. Entity approach.	Individual governance of its own system	Centralised. Entity approach.	Centralised / hub and spoke
Function	Messaging	Settlement	Settlement	Settlement	Settlement	Messaging
Open Source	Yes	No	No	Yes	No	No
Sandbox	Yes and Live	No	No	Yes	No	Yes
POC Use Cases	11 Use Cases	Yes (X-border payment)	No	Yes	Yes	Yes
Third-Party Applications	Yes	No	No	Yes	No	No

The UDPN'S Positioning in the evolving digital currency landscape



Unlike others, the UDPN is a universal, **token-less infrastructure**; **decentralized**; and also a **working application**.

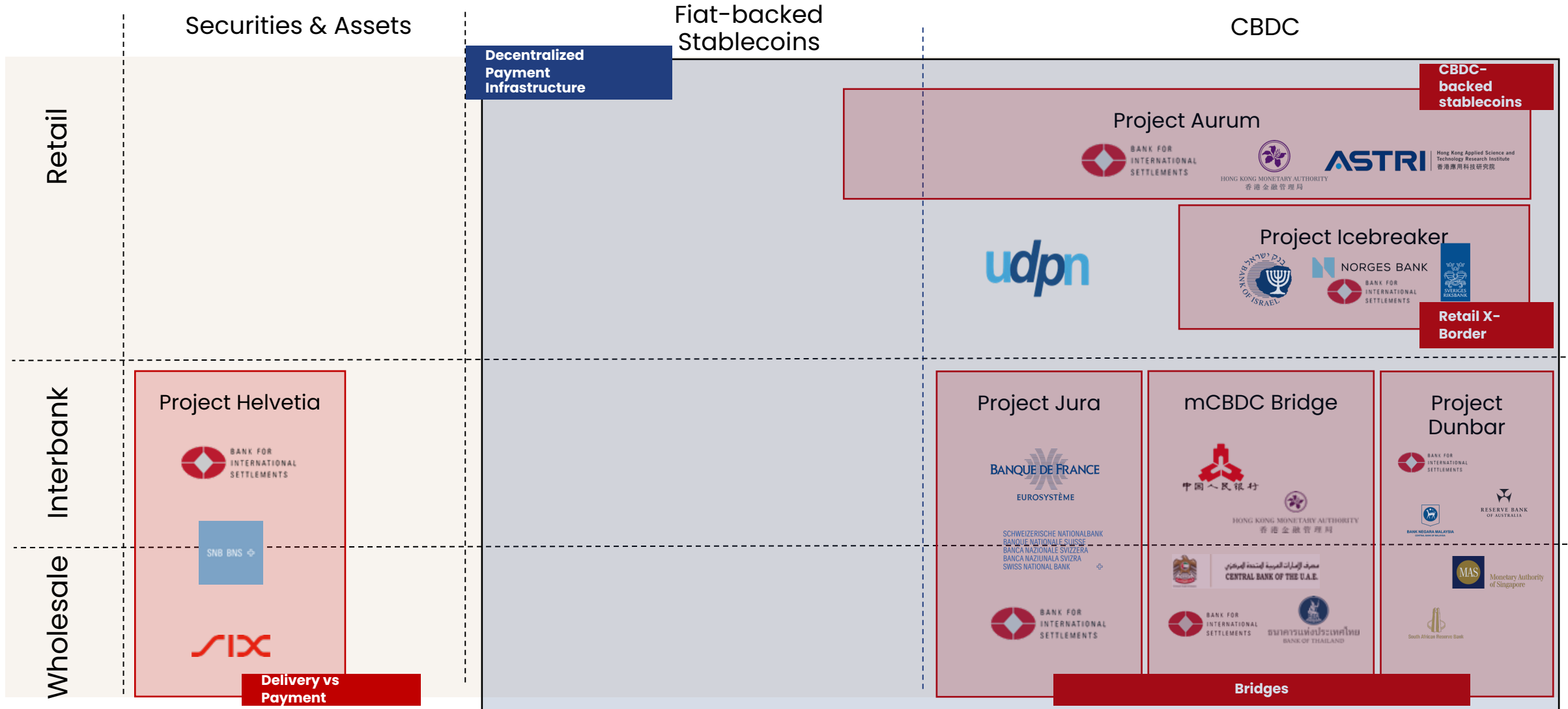


Source: GFT Analysis, Secondary Research, and Expert Interviews

UDPN & BIS Projects Synergies

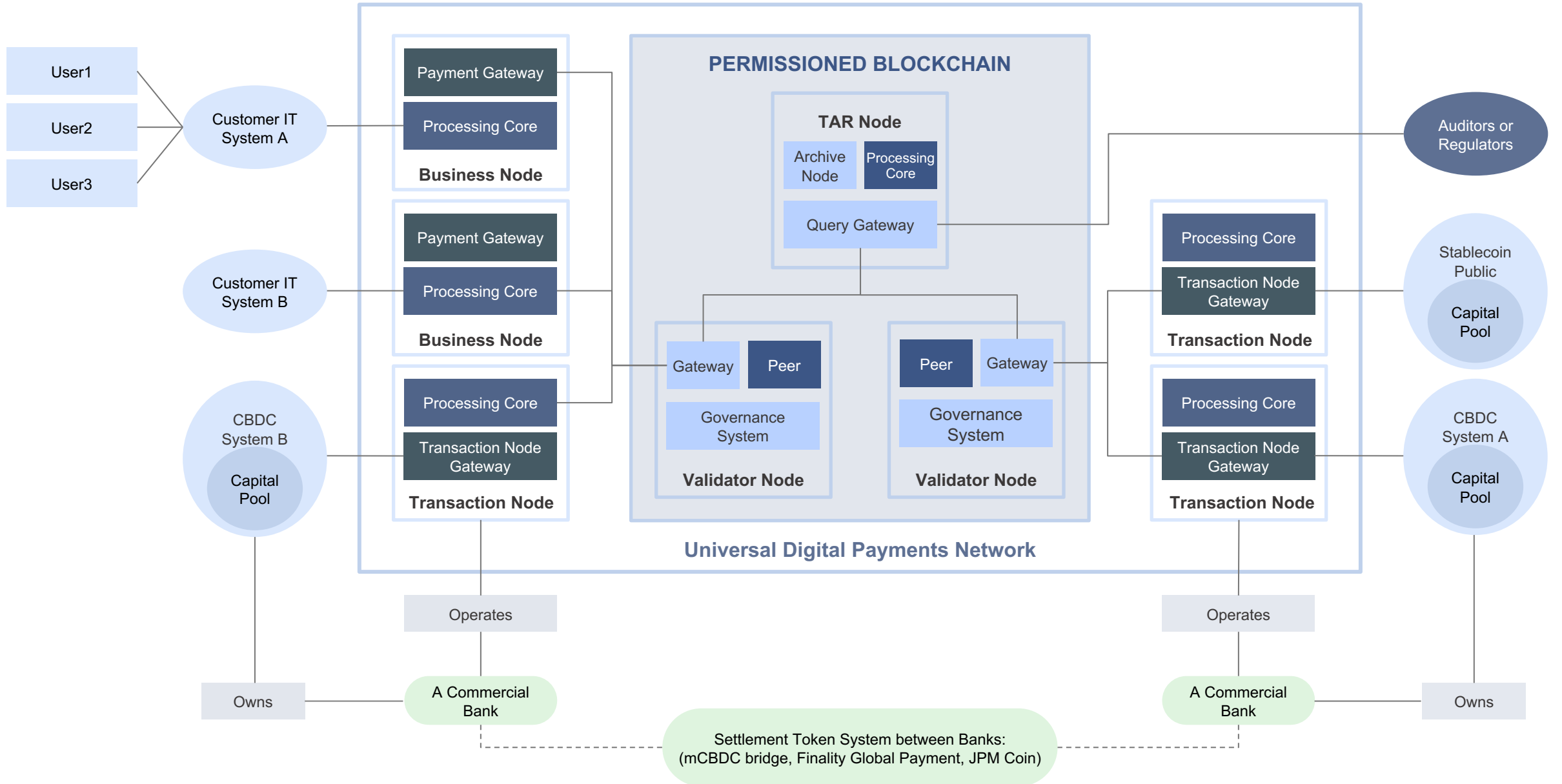


The UDPN has maintained an ongoing dialogue with the Bank of International Settlements to discuss potential collaboration.



Source: GFT Analysis, Secondary Research, and Expert Interviews

High-level UDPN Architecture



UDPN enables interoperability and higher-efficiency payments



The UDPN difference

1. TIME TO MARKET

The UDPN is a working infrastructure ready to be tested in our Sandbox.

2. DECENTRALIZED GOVERNANCE

The UDPN is governed by the UDPN Alliance members, not shareholders.

3. DECENTRALIZED ARCHITECTURE

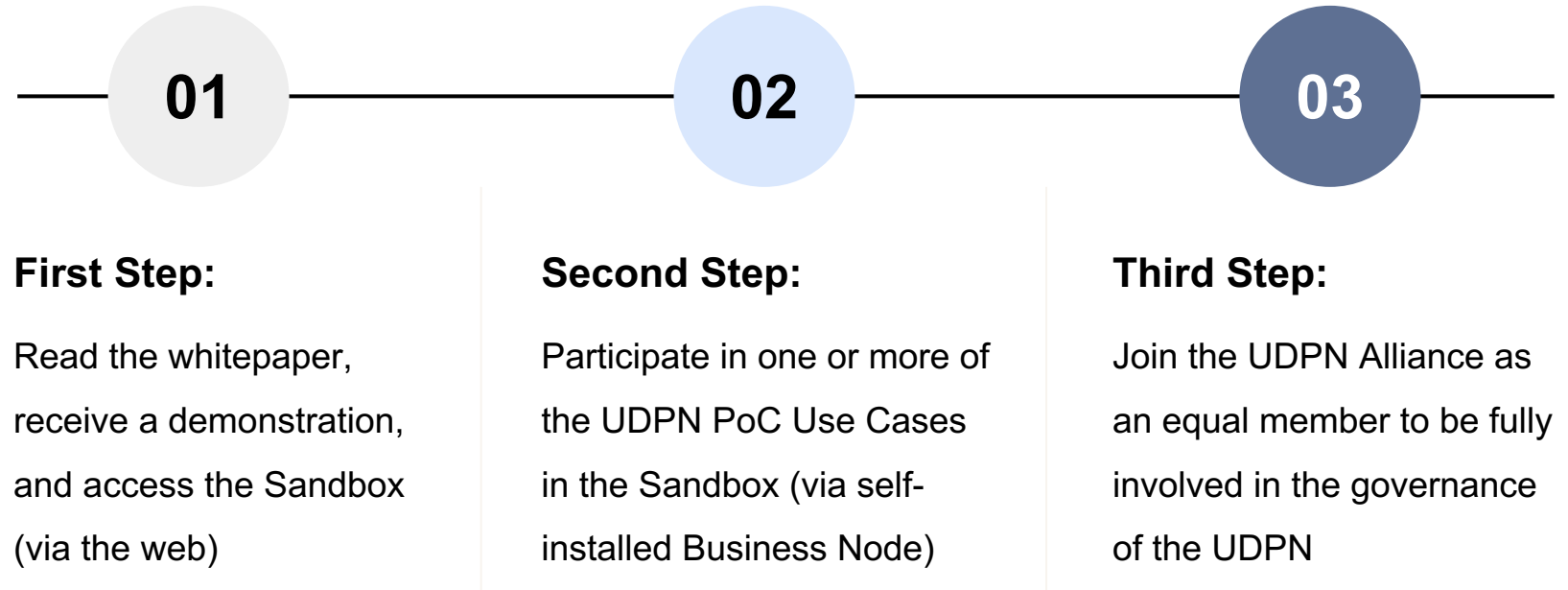
Each node has its own function and is run by different stakeholders.

Payment Systems Comparison

Metric	Payment Systems Today	Payment Systems Tomorrow	UDPN Today
Speed	Days	Instant	Instant
Cost	7-11%**	<1%-11%**	<1%*
Transparency	Limited	Transaction Transparency	Transaction & Smart Contract Transparency
Model	Traditional Messaging	Hub & Spoke	Distributed Messaging via Multiple Nodes
Governance	Centralized	Centralized	Decentralized

*TBD by Alliance partners **Estimate avg. cost taken from multiple sources

We want to offer financial institutions and interested parties the opportunity to better understand the future payment-related digital currency landscape and ecosystem by taking the UDPN journey step by step.





The UDPN is governed by an alliance of financial institutions and technology companies. Alliance membership will be capped at 24 participants. Each member will operate a Validator Node and has equal voting power.



Ownership and control are fully decentralised, with no single Alliance member having more authority than the next. There will not be any legal entity or board members for UDPN.



All governance actions are determined through a **voting mechanism** attached to each Validator Node. Some actions only require two votes, while some require a **supermajority**.

	Action Requiring Voting	Voting Threshold needed
01	For new member entry and the establishment of new Validator Nodes	80%
02	For the establishment of Business Nodes	2 votes
03	For onboarding new currencies and the establishment of Transaction Nodes	60%
04	For matters related to the upgrade of UDPN node software	60%
05	For matters related to the upgrade and deployment of third-party smart contracts	60%
06	For deciding the fee structure for UDPN official services and network transactions	80%
07	For deciding the revenue share model	80%
08	For the deployment of new UDPN official services on the Network	60%

Contributions



Bring expertise from across different industries to help reshape the landscape of digital currencies and establish the rules of play



Govern the UDPN by operating a Validator Node and participating in voting



Help develop the UDPN by providing insights to development teams



Capital contribution (~ USD 50K per year in Validator Node operating costs)



Promote and market the UDPN

Benefits



Share revenue equally with all UDPN Alliance members (transaction fees, service fees, entry fees, etc.)



Gain access to all the UDPN source code and documentation



Maintain voting rights on all matters related to the UDPN

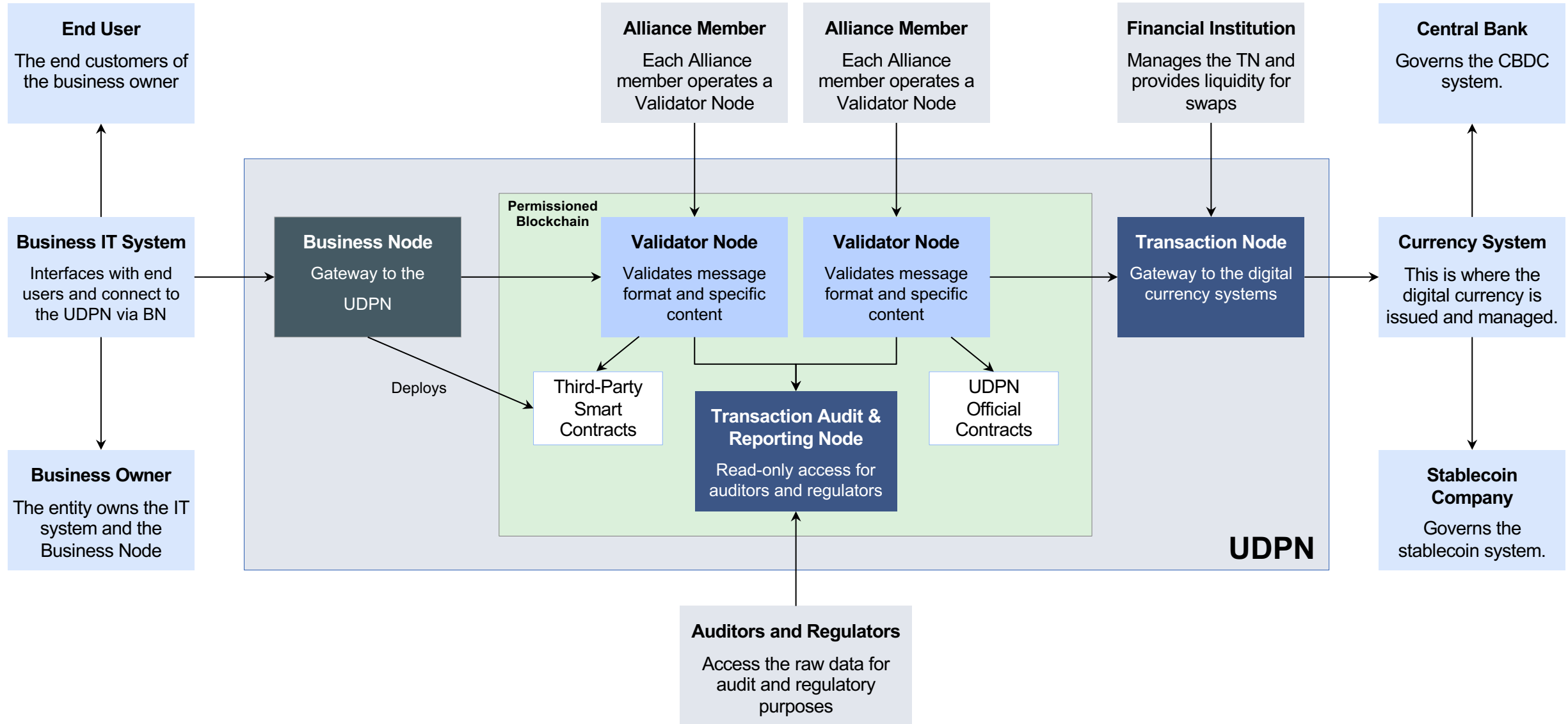


Enjoy a first-mover advantage in building services and applications on the UDPN



The opportunity to guide this unique shift for finance

The UDPN Ecosystem and Roles



The UDPN Commercialization and Business Models



The UDPN is expected to be commercialised in the **second half of 2023**.

Some of the revenues shared by all Alliance members are as follows:

01

The network transaction fees are calculated based on the smart contract transactions initiated by Business Nodes.

02

The official UDPN services may charge an additional service fee to the transaction fees, such as FX or digital currency swaps.

03

For third-party smart contract services deployed on UDPN, a 20% revenue share will be enforced through the network.

It is recommended that Alliance members should also consider building their own business models based on UDPN infrastructure.

Compliance and Privacy



The UDPN doesn't require special regulation in most regions and countries as a messaging network because it doesn't hold or move money directly, just like SWIFT.



UDPN's Transaction Node operators must be regulated money service providers since they move money from capital pools to user accounts. All Transaction Node operators for CBDCs must be commercial banks.



The UDPN doesn't collect end-users' personal information; all such information is stored locally in the source IT systems or by locally installed Business Nodes' private storage (not on-chain).

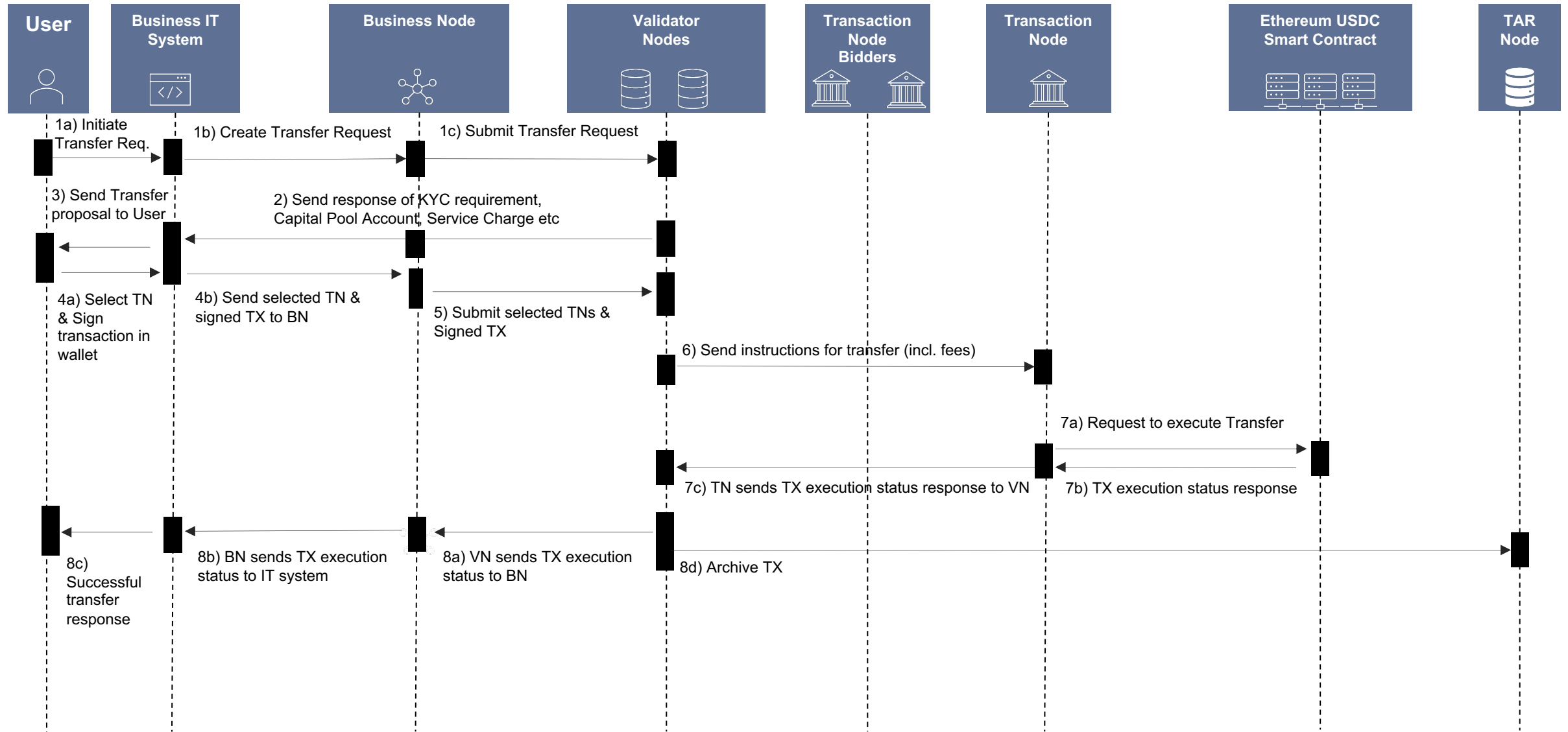


The Business Node and Validator Node software will be open source. All source codes can be accessed and reviewed at any time by all Alliance members.

Appendix A: Transfer Transaction Flow



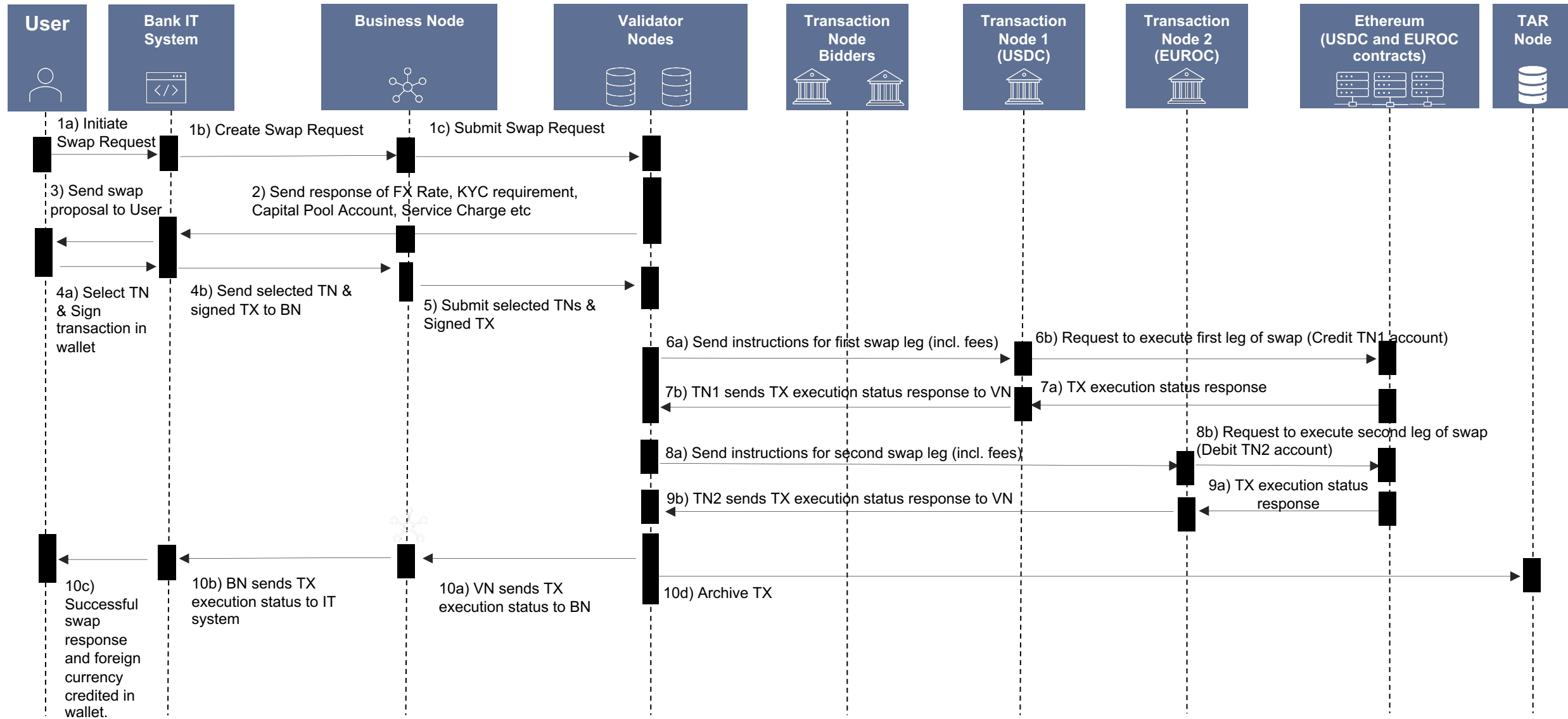
This time sequence illustrates a single currency transfer initiated by a bank client and enabled end-to-end by the bank via UDPN.



Appendix B: Swap Transaction Flow



This time sequence illustrates a swap transaction between 2 digital currencies initiated by a bank client and enabled end-to-end by the bank via UDPN.



In order to clone below UDPN repo, user needs to first get permission from the UDPN admin.

1

- Download the business repo and clone it: <https://github.com/UDPN/VN-Sandbox-selfservice-public>
> `git clone git@github.com:UDPN/BN-Sandbox-selfservice-public.git`

2

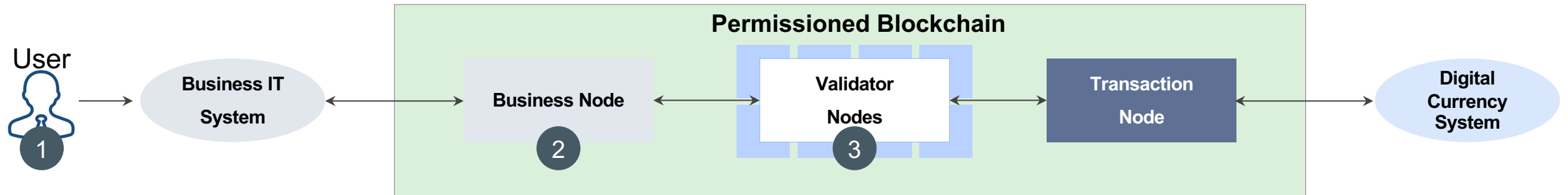
- Go to the business node docker-compose directory
> `cd BN-Sandbox-selfservice-public/docker-compose/`

3

- Use the start/stop commands to start/stop the business node
> `sudo docker-compose up -d`

4

- Follow the instructions to register the business node with a validator node via [Business Node Self-Onboarding Manual for the UDPN Sandbox](#)



What is a UDPN Decentralised Identifier (DID)?

A UDPN Decentralised Identifier is a unique identifier used to represent all UDPN stakeholders from validator node operators to end users.

DID Creation Process

- ① Submit a DID creation request
- ② Generate the DID document and private key locally with the DID SDK. Submit the creation request to the Validator Nodes
- ③ The creation request is validated and written to the permitted blockchain. A response is sent back to the IT system

Linking a DID and a Digital Currency Account

A linking transaction maps the UDPN DID to a digital currency account before allowing the DID holder to initiate transfers and swaps on the UDPN.

Linking Process

- ① Send a linking request and relevant information for a potential KYC/AML check to the IT system
- ② Submit the linking request to a Validator Node
- ③ A Linking request is validated and written to the permitted blockchain. A response is sent back to the IT system

ud/pn

**Thank
you!**

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