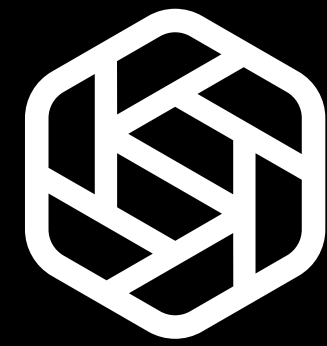




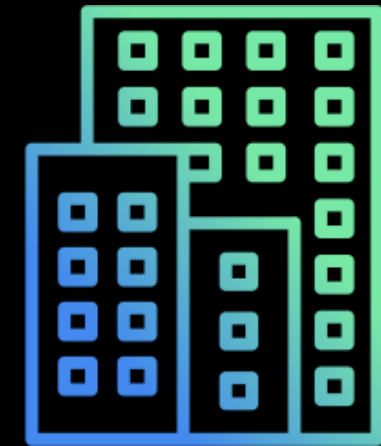
The Emerging Tech Stack for Digital Assets and Asset Tokenization

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kaleido

THE BLOCKCHAIN BUSINESS CLOUD



Web3 & Digital Assets

Made Radically Simple

For Enterprise



Kaleido's Product Suite

Institutional Web3

Digital Assets & Tokenization

Consumer Web3

Mass scale user applications

Multi-Party Web3

Business Networks

Kaleido Asset Platform

Digital Asset

Institutional grade digital assets platform across public and private

NFT

Mass scale dedicated NFT platform with zero gas and high performance

Consortium

Full stack, decentralized hosting on an automated, compliant platform



FireFly Supernode

CBDC Middleware & Infrastructure

Custody



FireFly OS

Web3 Gateway
Transaction Manager



Data Manager
Event Bus

Enterprise Integration



First open source SuperNode for blockchain and digital assets

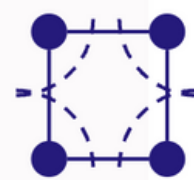
Chain

Blockchain-aaS infrastructure

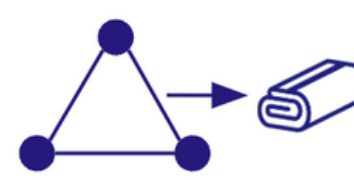
Private



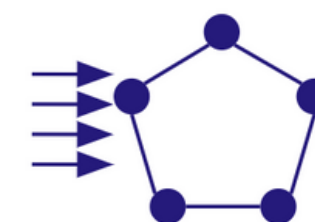
Consortium



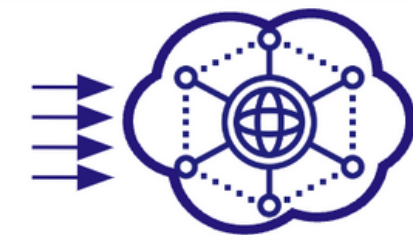
App Chain



Side Chain



Public Chain



Industry leading BaaS - multi-protocol, cross-cloud, and hybrid

Progress in the past year

w-CDBC^s ↑
r-CDBC^s
tokenized deposits
Digital Assets ↑
Digital Identity ↑

interop ↑



~~play to earn~~

Regulated Liability Networks ↑

Digital Twins

DAOs

Enterprise NFTs

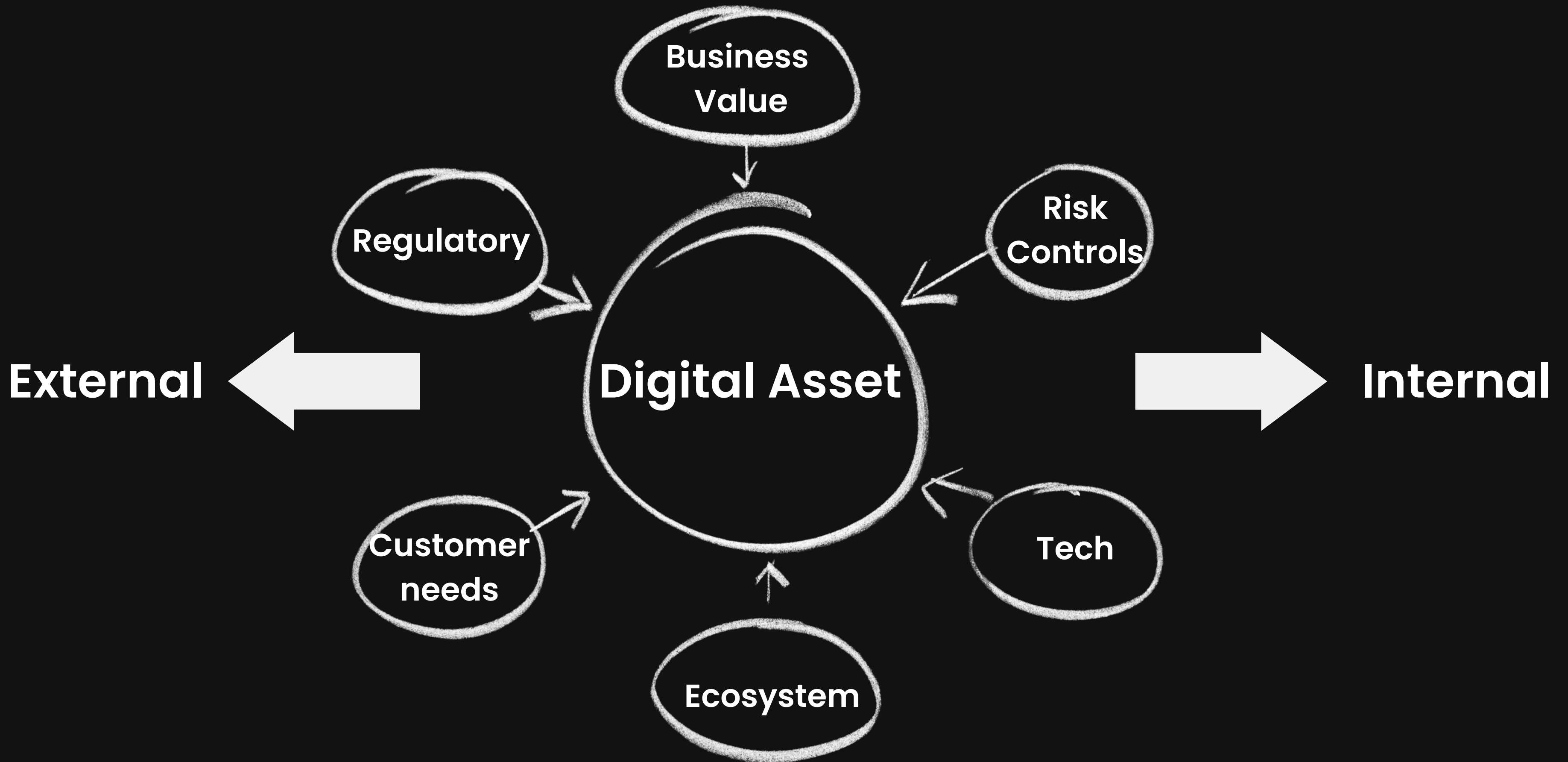
Asset Tokenization (RWAs) ↑↑

Metaverse ↓

Bank Custody of Crypto ↓

Stablecoins

Considerations in a Digital Asset strategy



Digital assets strategy challenge... scaling and interop

Typical Financial Services
Company:

30+ use cases

60+ team

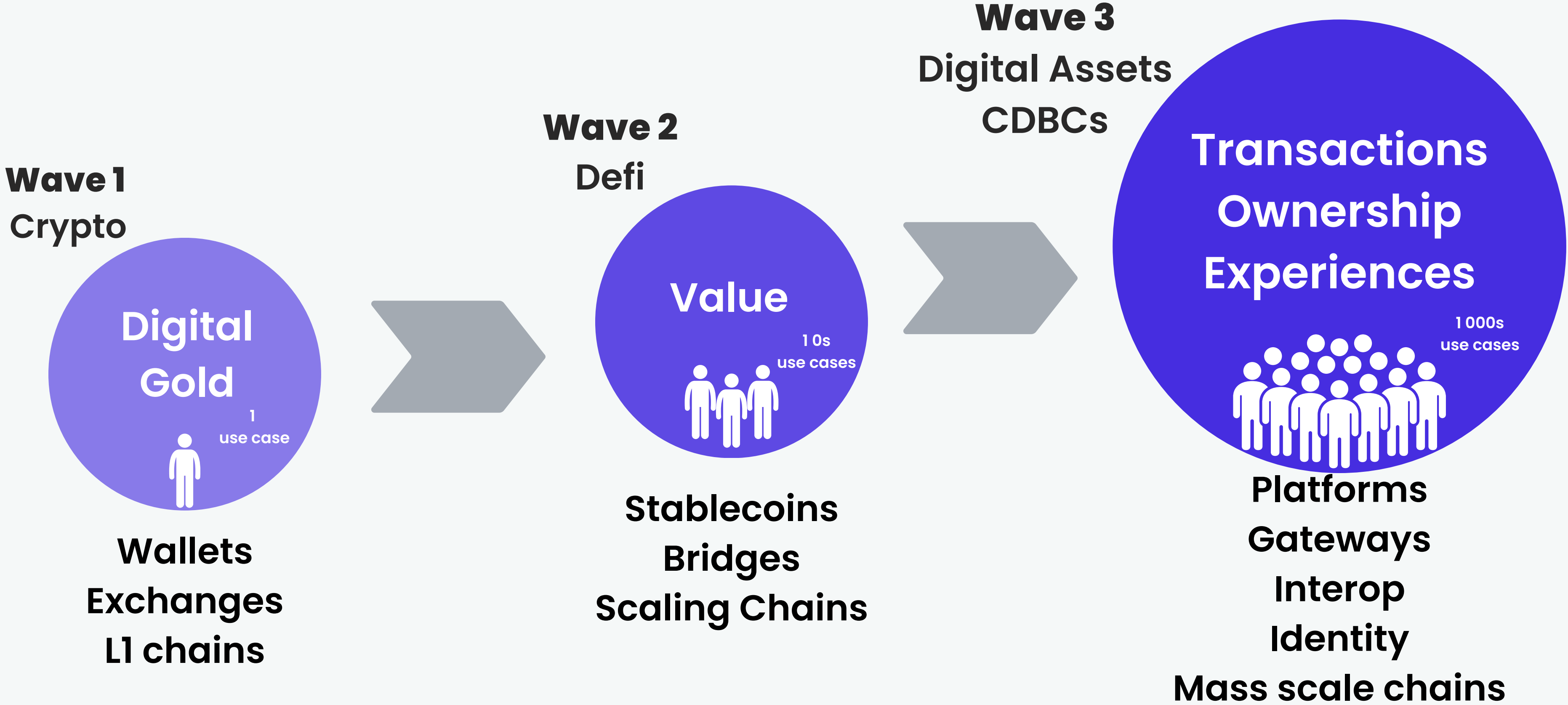


But...

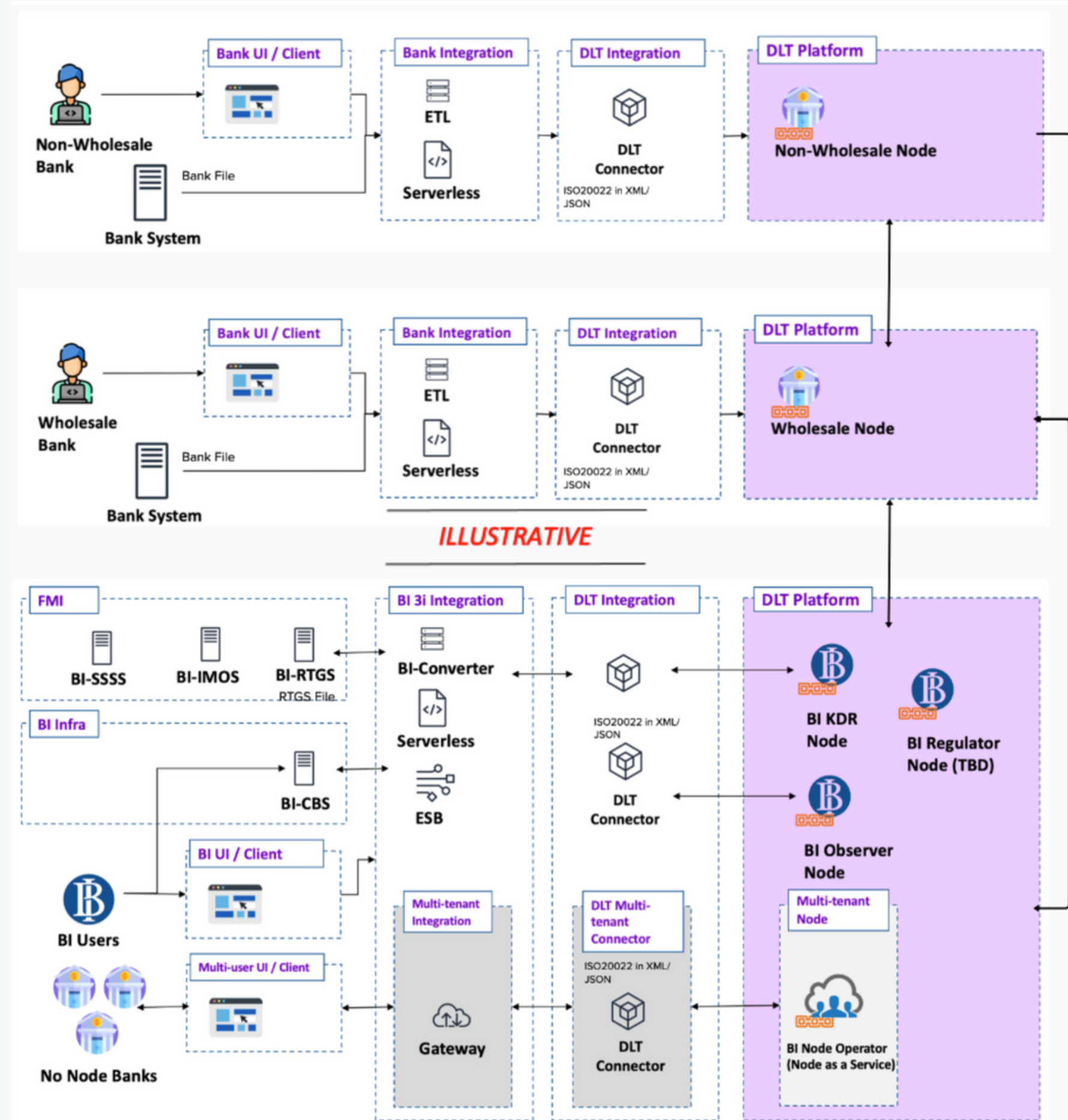
1-2 completed

2-3 working on

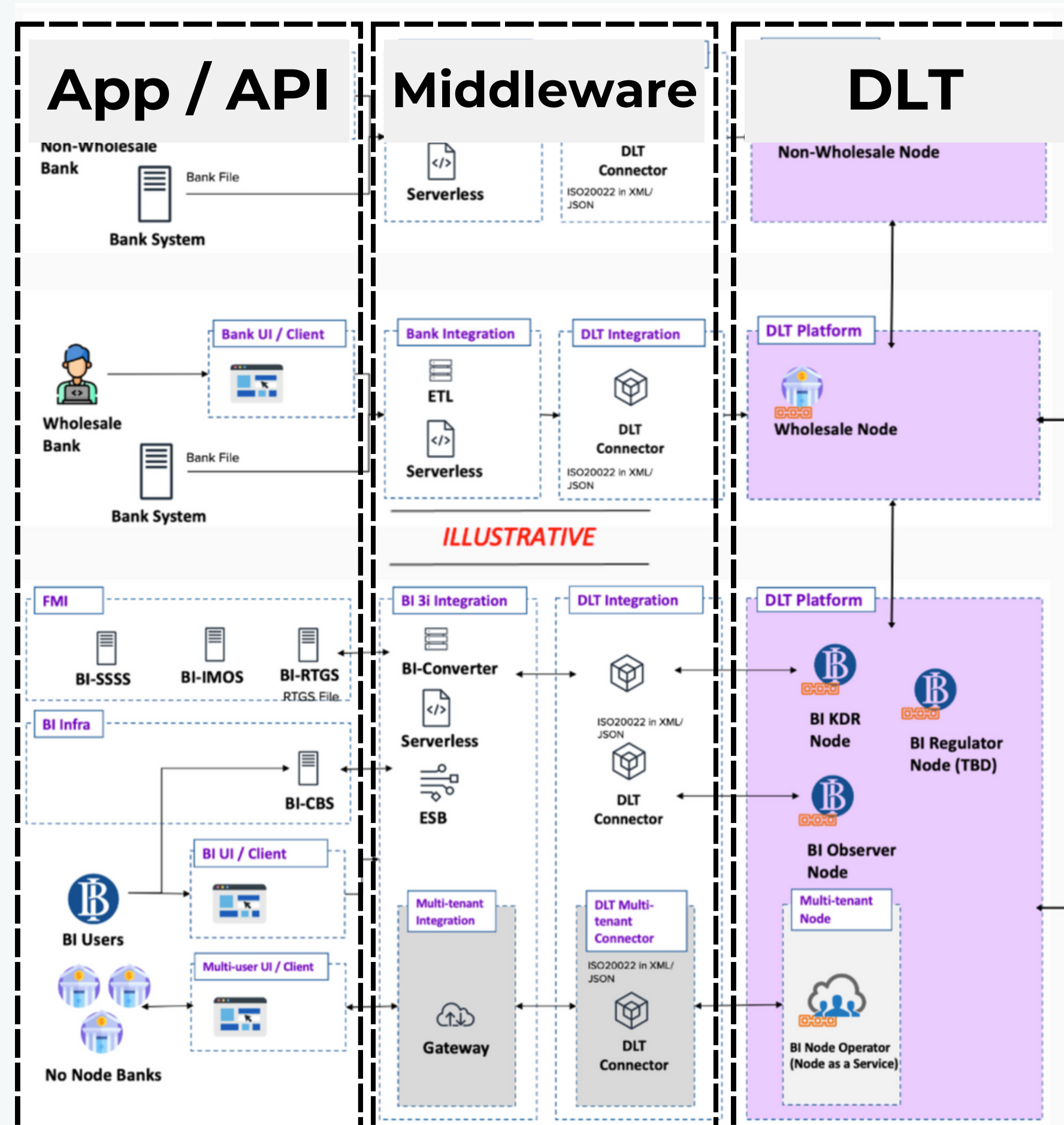
Digital Assets will transform thousands of use cases for enterprises and consumers



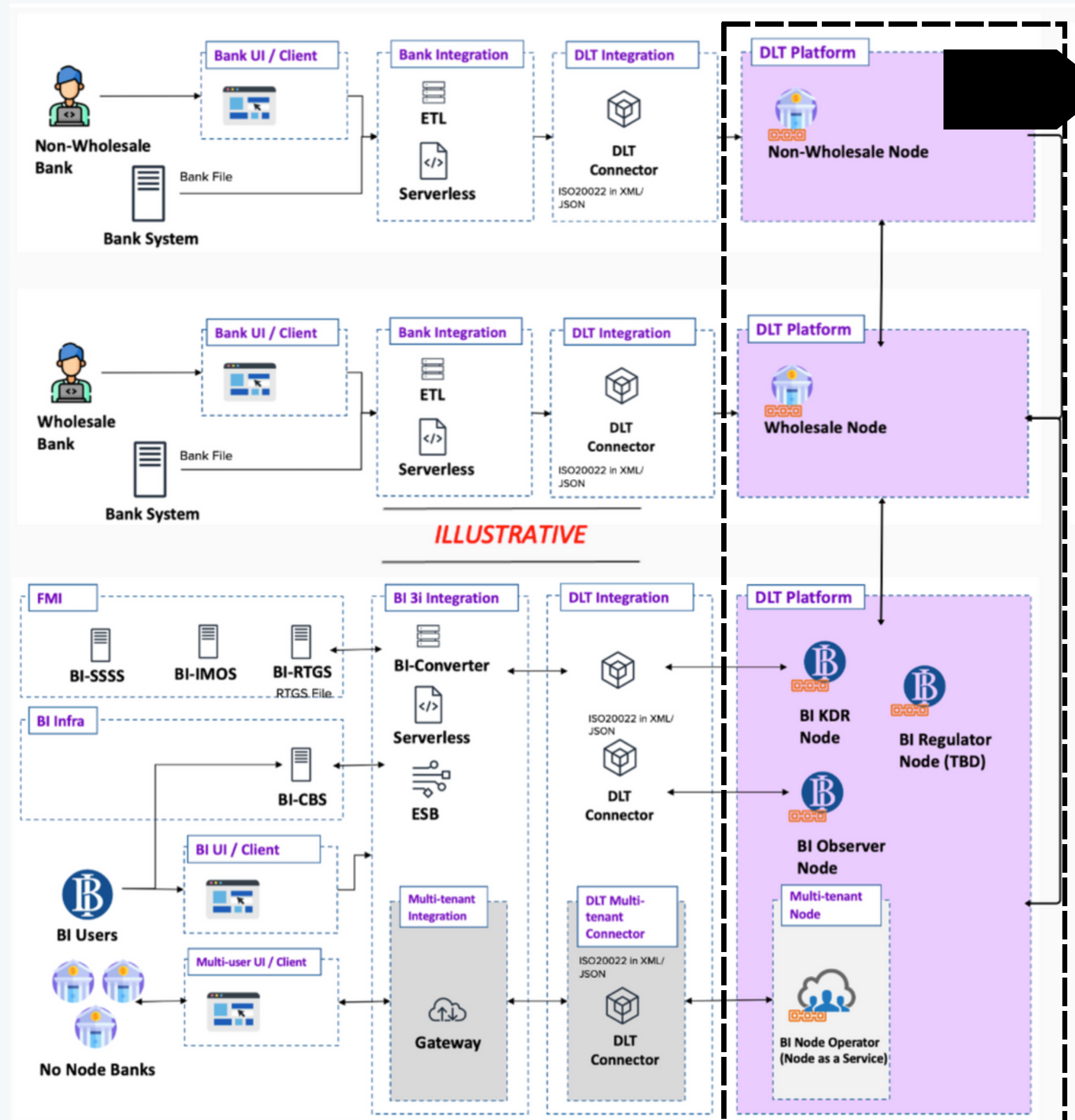
Notional Digital Asset Architecture - CBDC Example



Introducing the 3 Tier Digital Asset Architecture



Notional Digital Asset Architecture



DLT Layer

- How centralized?
- DLT vs blockchain
- Privacy model
- Token lifecycle
- Governance
- Scalability

DLT Layer Considerations

Which DLT?

- UTXO vs Account
- EVM vs other

Privacy Model

- On chain vs off chain
- UTXO model
- Zero Knowledge Proofs (zkp)

Governance

- Permissioning model
- Lifecycle management
- Issuance controls

Topology

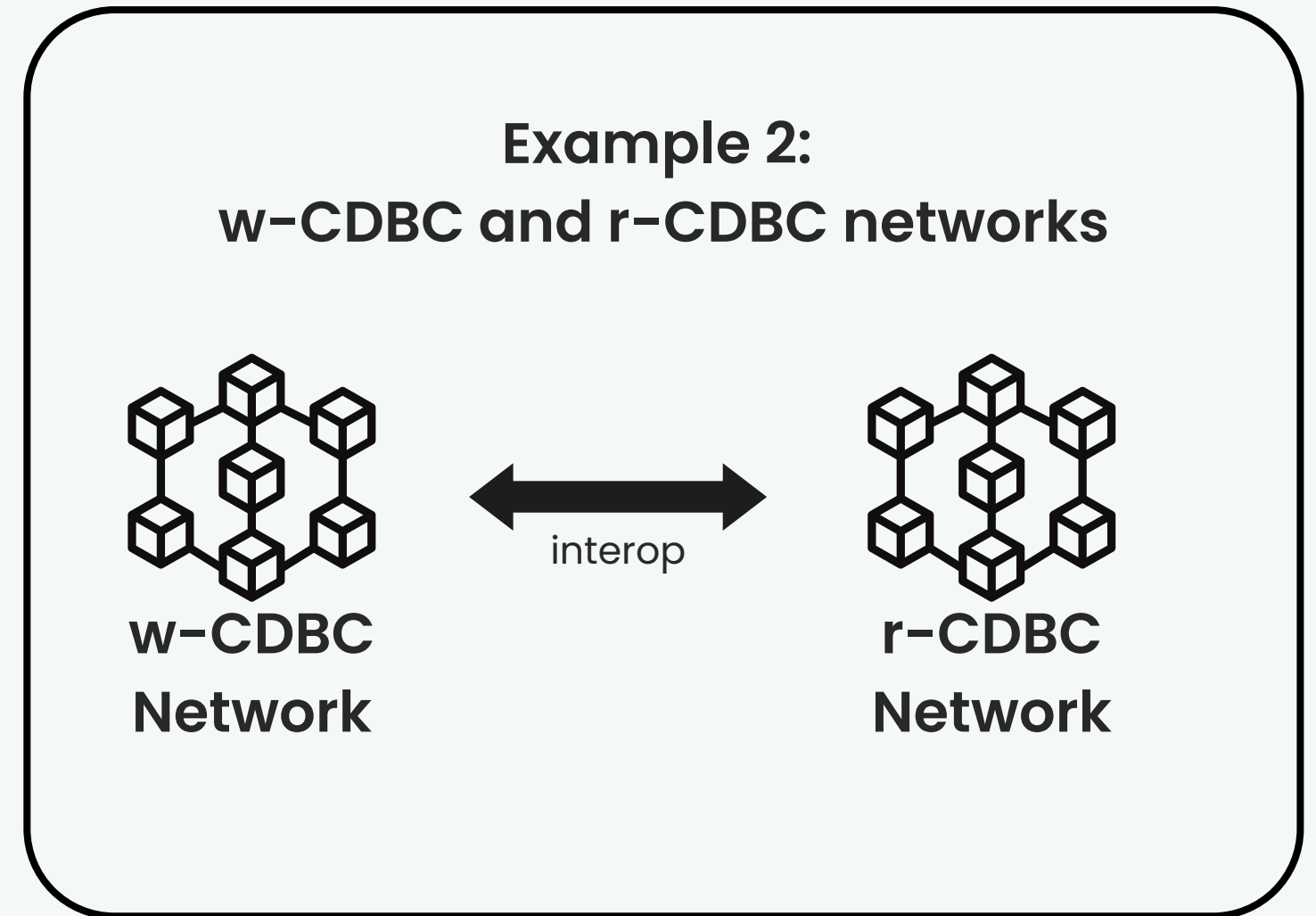
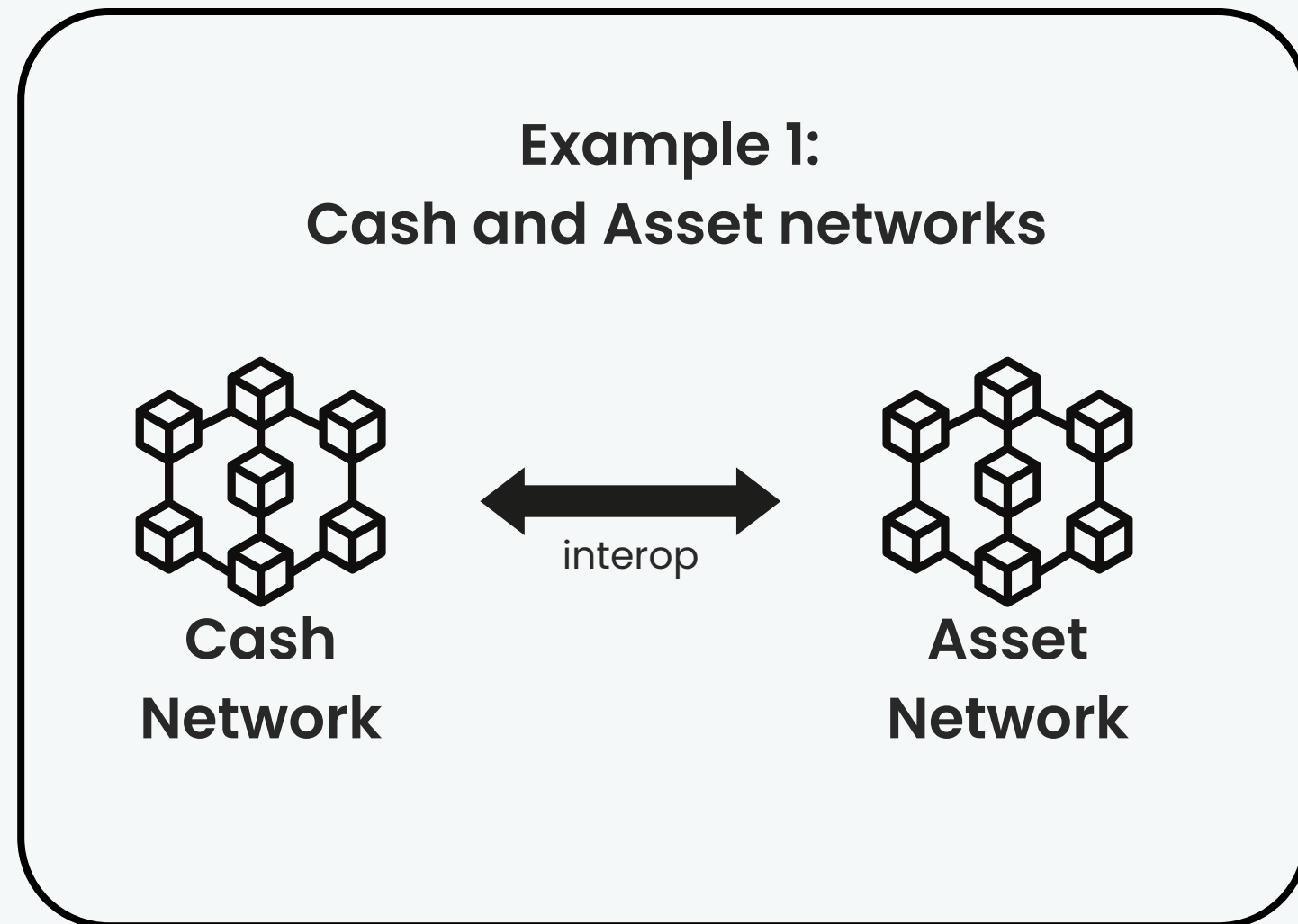
- Distribute nodes
- API access only
- Redundancy design

Scalability

- Throughput
- Latency
- Finality characteristics

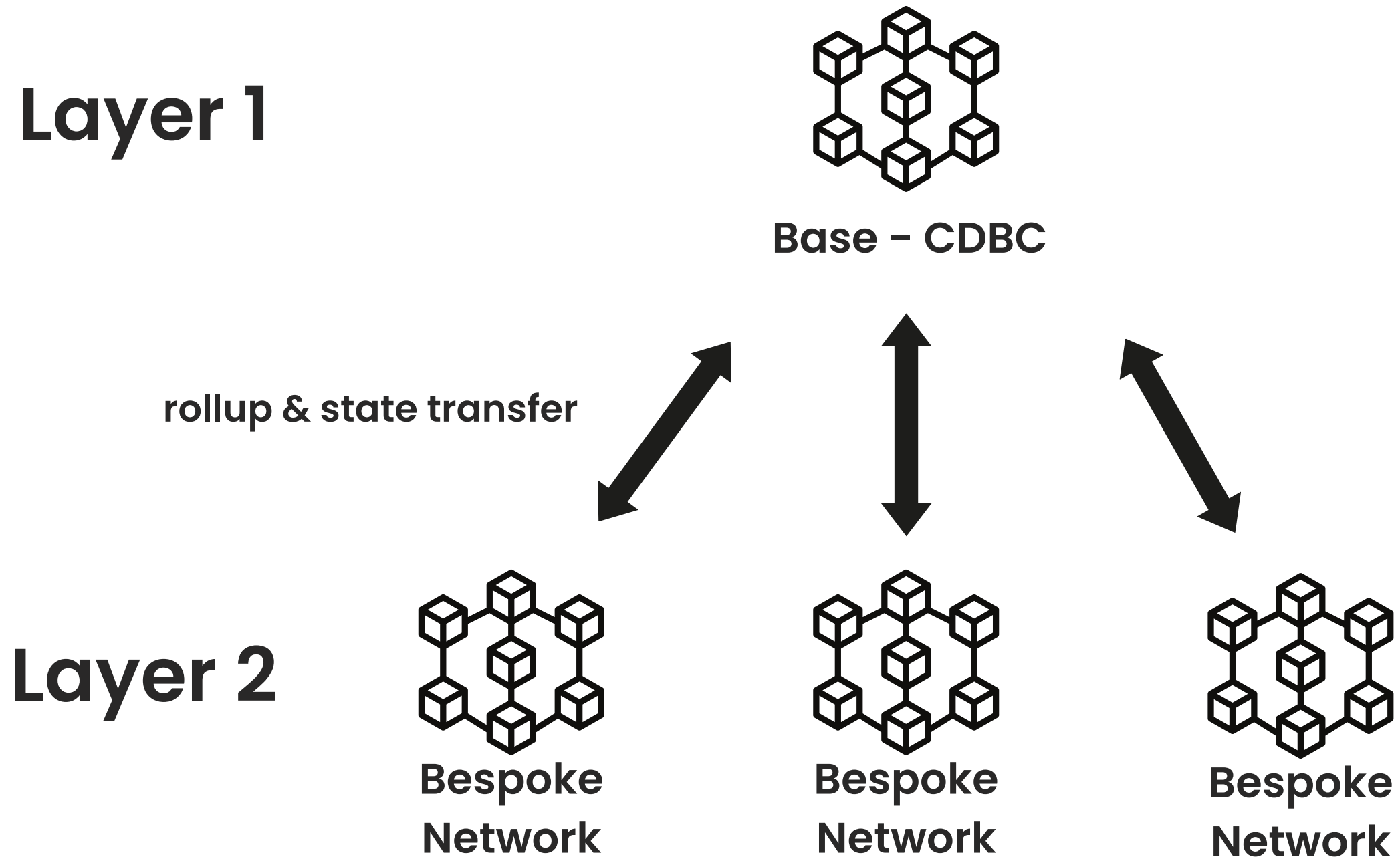
DLT Layer Trends

Trend 1: Purpose built chains

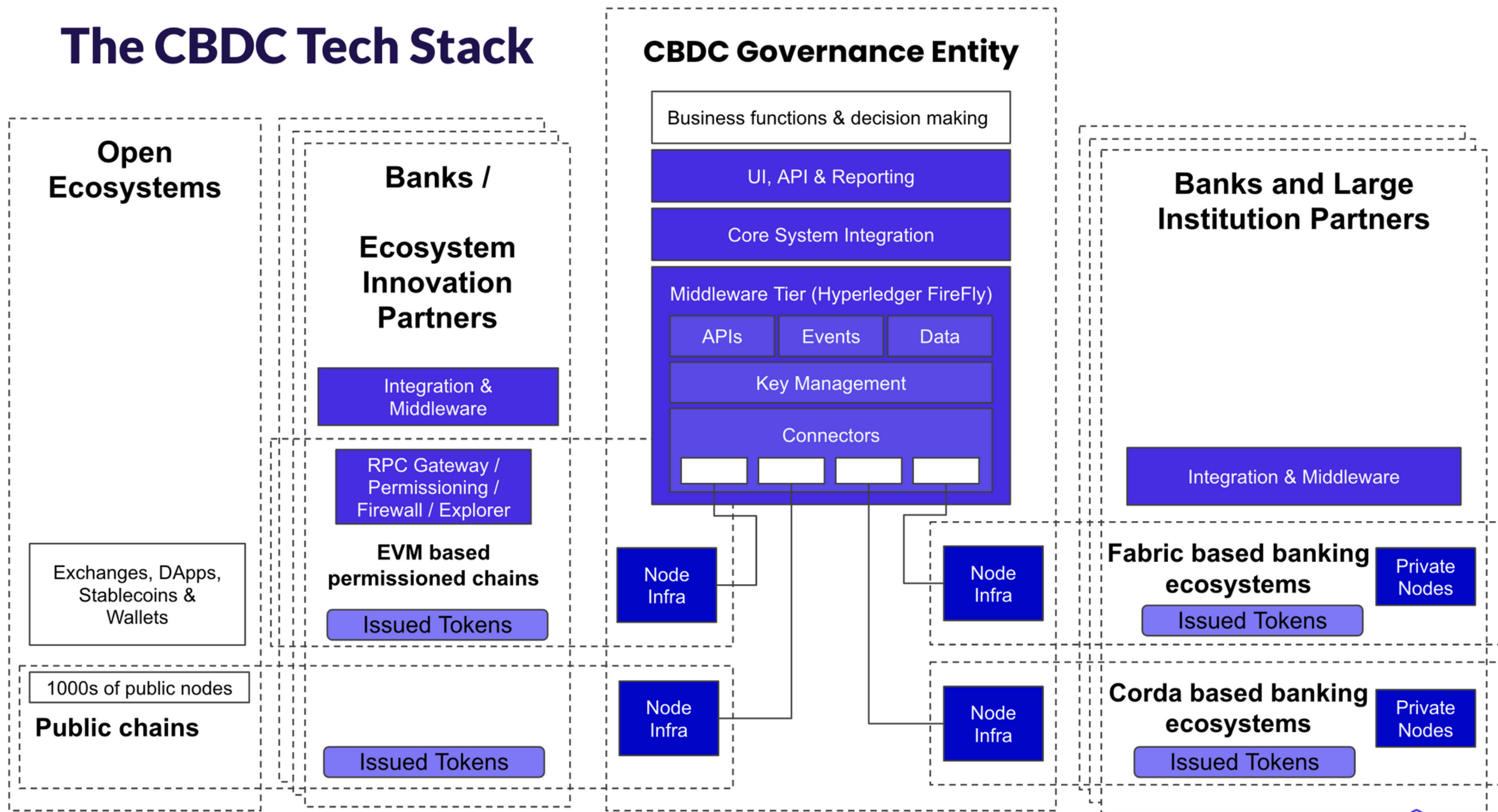


DLT Layer Trends

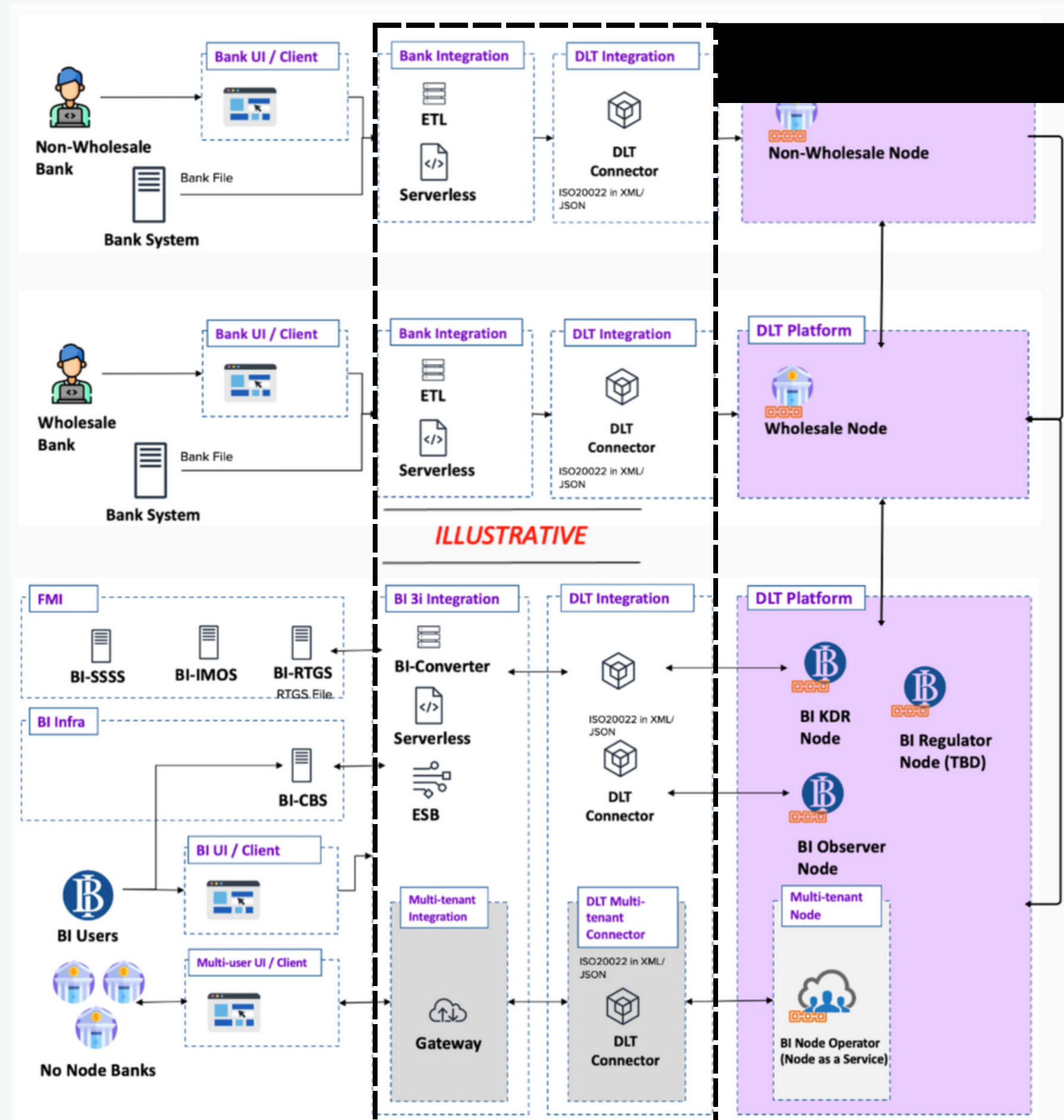
Trend 2: Layered Chains



The CBDC Tech Stack



Notional Digital Asset Architecture



Middleware Layer

- Transaction management
- Realtime event bus
- Api gateway
- Data management
- Custody
- Trusted bridge interop

Middleware Layer Considerations

Transaction mgmt

- guaranteed delivery
- API abstraction layer
- submission gateway

Realtime event bus

- event driven coordination bus
- mass scale processing

Data mgmt

- Indexing engine
- Intelligence platform
- AI & analytics integration

Custody

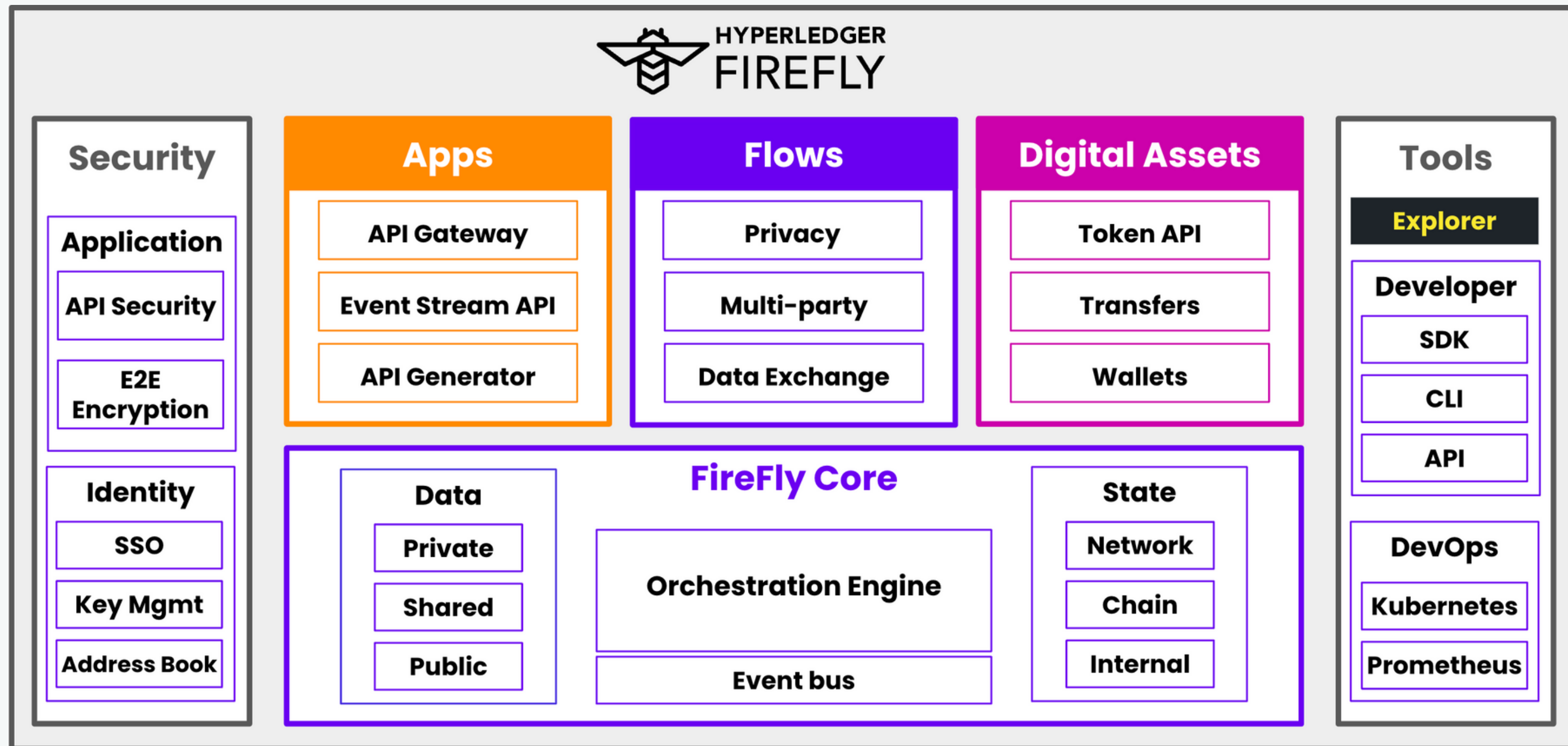
- custodial wallet mgmt
- non custodial support
- Security model

Trusted bridge interop

- omni-network interop
- move assets in trusted workflows

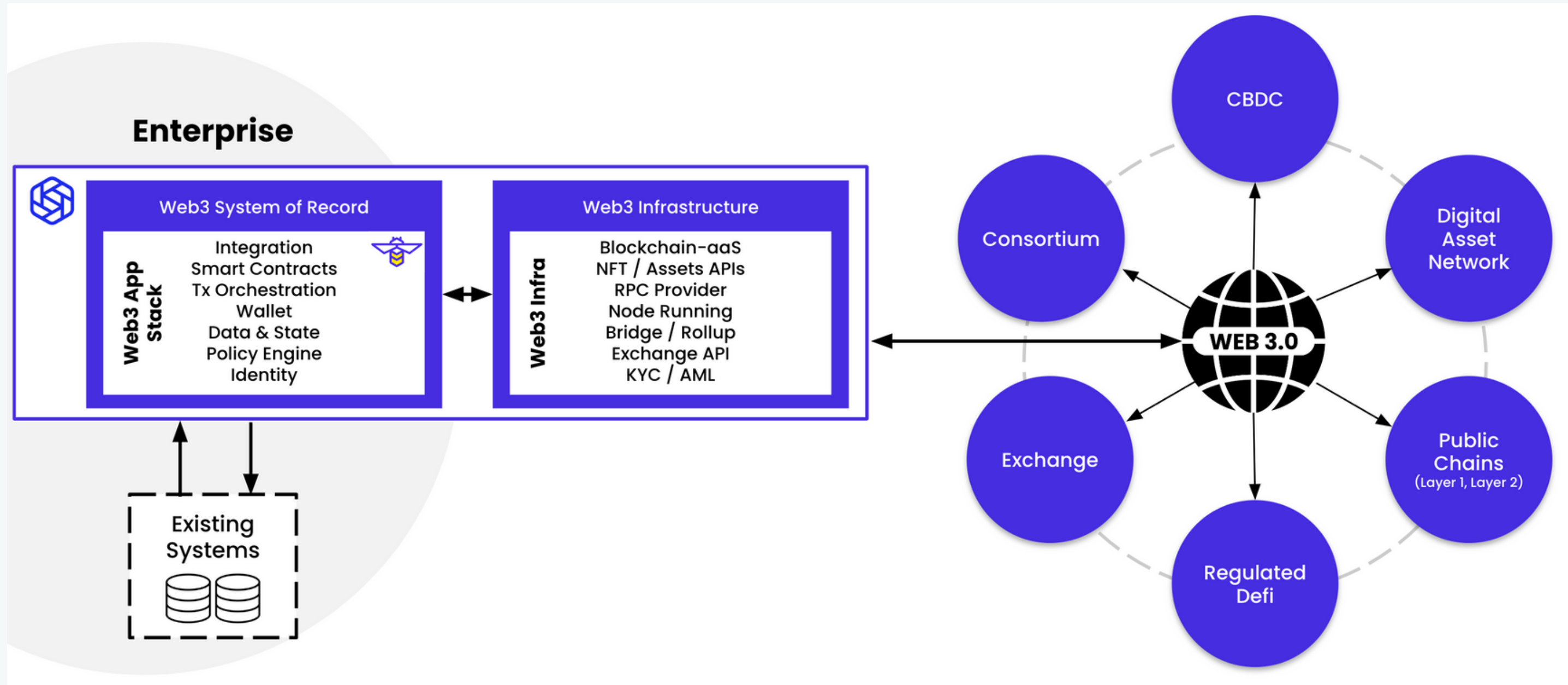
Middleware Layer Trends

Trend 1: Look open source



Middleware Layer Trends

Trend 2: Whole enterprise architecture



CBDC Gateway for International Payments



The Challenge

- Fragmentation leading to ‘digital islands’ springing up across the globe
- Businesses and consumers aren’t currently able to make frictionless cross-border payments using CBDCs
- Different systems and different CBDCs will need to be able to efficiently work together

The Solution

- Integrated tokenized CBDC gateway for the industry

The Results

- Orchestrated a cross-border transaction between one entity on a DLT-based CBDC network and a second running on an established real-time gross settlement (RTGS) system
- Interlinking the multiple domestic-based CBDC networks emerging worldwide to make cross-border payments with CBDCs seamless

[Read the whitepaper](#)



Australian Central Bank Digital Currency Pilot



The Challenge

- Identify and understand innovative business models, use cases, benefits, risks, and operational models for a CBDC in Australia

The Solution

- Robust sandbox environment providing integrated tokenized CBDC with support for multiple use cases

The (On-going) Results

- 15 industry participants actively experimenting as of March 2023, across a wide variety Wholesale and Retail CBDC use cases:
 - CBDC interoperability
 - Bond Settlement acceleration with CBDC
 - Supply Chain finance
 - Foreign Exchange settlement



CBDC Custodial Models

[Read More](#)



CBDC Distribution

[Read More](#)



Construction Supply Chain Payments

[Read More](#)



Corporate Bond Settlement

[Read More](#)



Crossborder Settlement & Custody

[Read More](#)



GST Automation

[Read More](#)



Interoperable CBDC for Trusted Web3 Commerce

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Livestock Auction

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Nature-based Asset Trading

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Offline Payments

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Stablecoin Proof of Reserve

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Superstream Payments

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Tokenised Bills

[Read More](#)



CANVAS

Tokenised FX Settlement

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Tokenised HQLA Securities Trading

[Read More](#)

Philippines payments network and stablecoin Year 4 in production

UNIONBANK

The Challenge

- 35% of Filipinos are unbanked
- 56% of Filipinos live in rural areas with no access to financial services
- 476 rural banks that are disconnected from electronic banking services and money transfer networks

The Solution

- A decentralized, cost-efficient, approximately real-time inter-rural bank payment platform to connect rural banks to each other and to national commercial banks built on Kaleido
- Additional services such as wallet-as-a-service

The Results

- Streamlined individual remittance process flows from 26 steps to 5
- Slashed payment transfer time from 30 days to minutes
- >500M Php million transactions on the blockchain
- Over 200 banks and entities participating
- Launched PHP Stablecoin



Thank You



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