

# Central Bank of the Republic of Trkiye CBDC R&D Project

Experiences/Challenges and Prospects

Financial Innovation Department

9 May 2023

19th MEETING OF THE COMCEC FINANCIAL COOPERATION WORKING GROUP



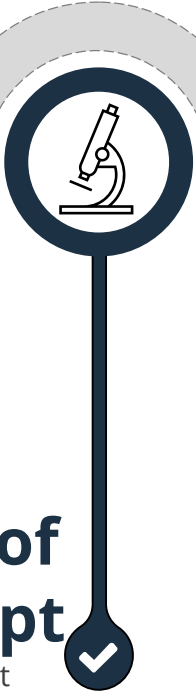
# Digital Turkish Lira R&D Project Roadmap

## 1. Financial Innovation Department



## 2. Proof of Concept

- R&D project
- Test environment
- Digital Wallet
- Design



## 3. Collaboration Model

- Public institutions, private sector, academia
- Technological superiority
- Access to talent



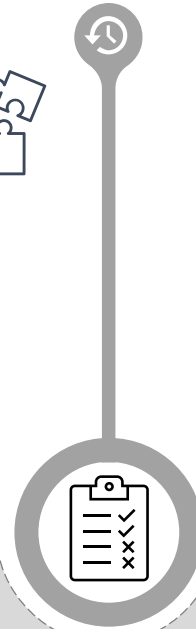
## 4. Pilot

- Different layers
- User experience
- Impact analysis-Reporting



## 5. Certification

- Performance
- Security

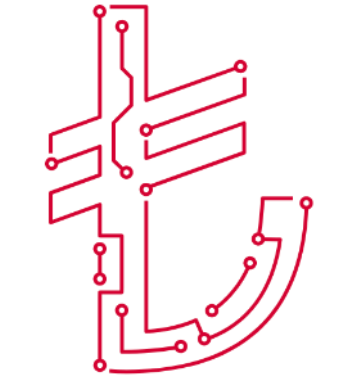


## 6. Legal Process - Authority

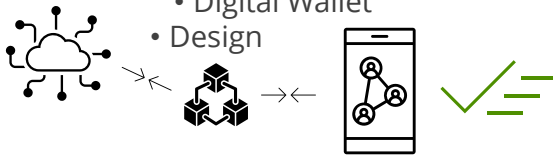
- Draft law
- Legislative arrangement
- Privilege



\*No decision has been made to introduce a CBDC.



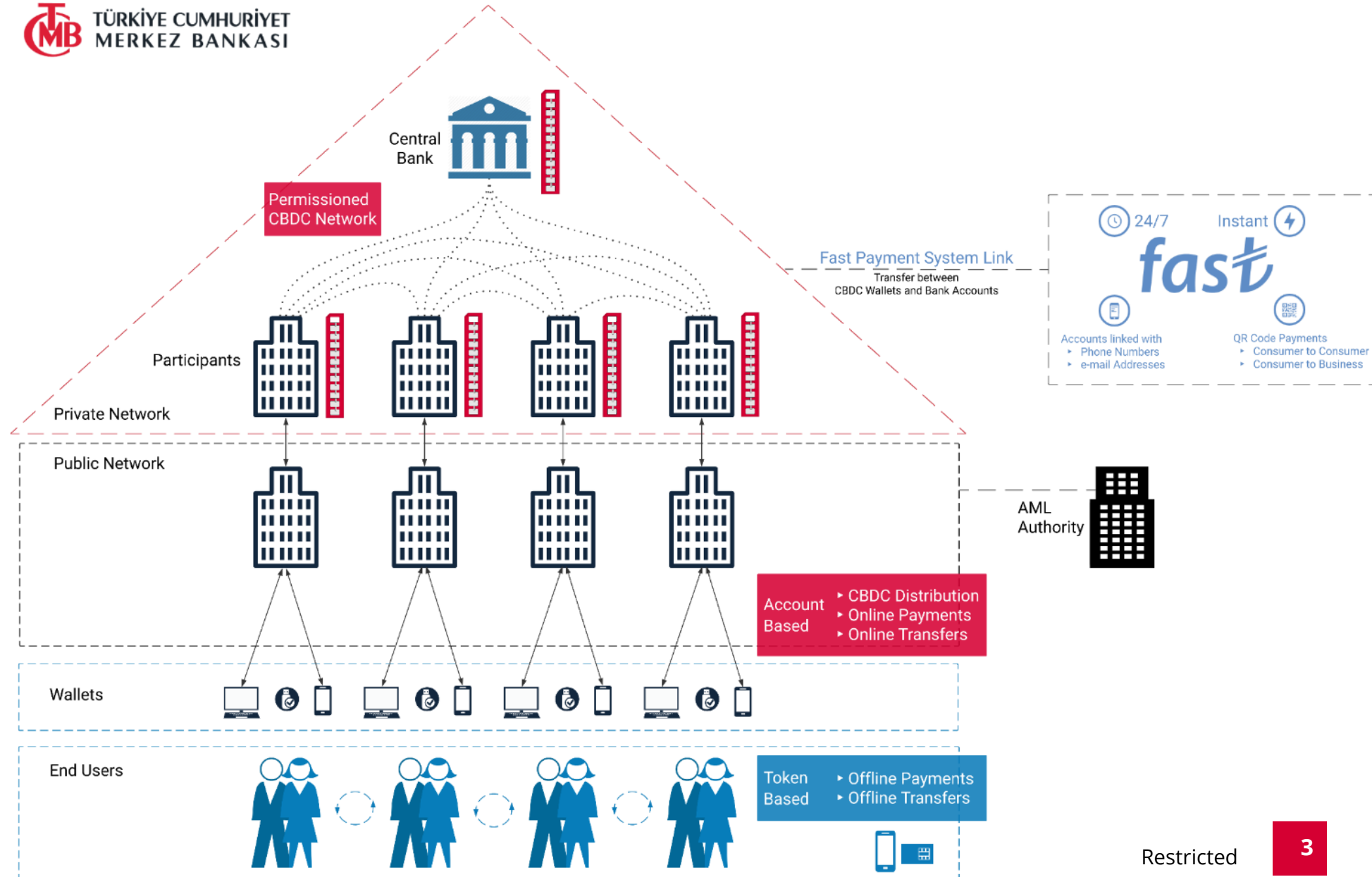
## Issuance



# Digital Currency \*Test\* Architecture

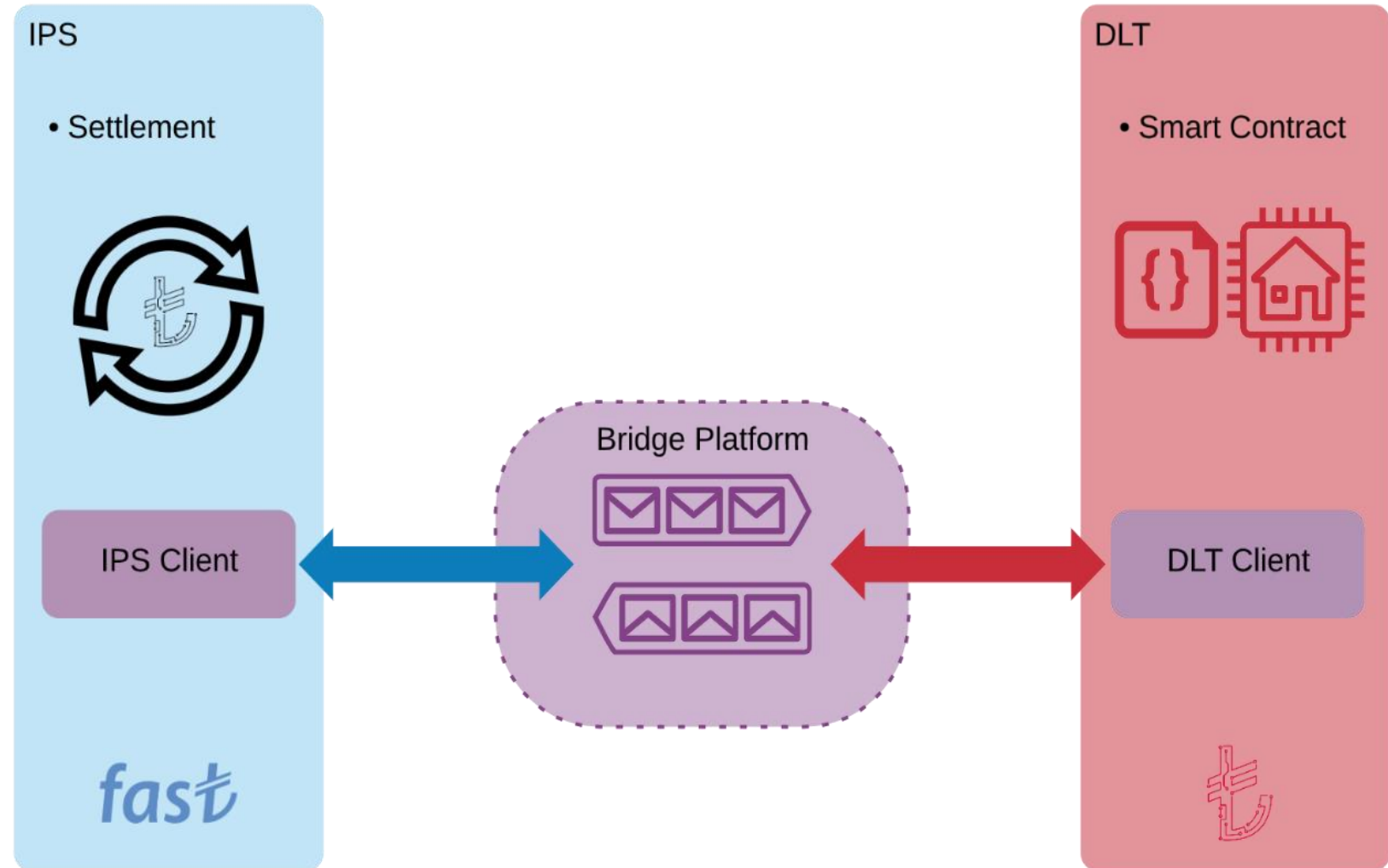
National retail CBDC architecture with

- two layers and
  - hybrid components
- is prioritized for design and test purposes



# Integrated Approach to DLTs and IPSs

Upgraded and integrated **instant payment system** that incorporates new features and enhances existing ones in order to meet the requirements for the digital currency, particularly the **incorporation of smart contracts**.

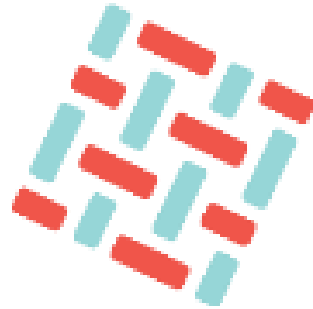


## Blockchain Platforms

The **blockchain platforms** used\* by global financial institutions and central banks were tested.

Applications were developed on top of these platforms.

\*Until 2020.



**HYPERLEDGER**  
**FABRIC**

### Central Banks

- ECB
- South Africa
- Hong Kong
- Sweden
- Switzerland
- Japan
- Canada
- Lithuania
- Singapore
- Thailand
- Ukraine

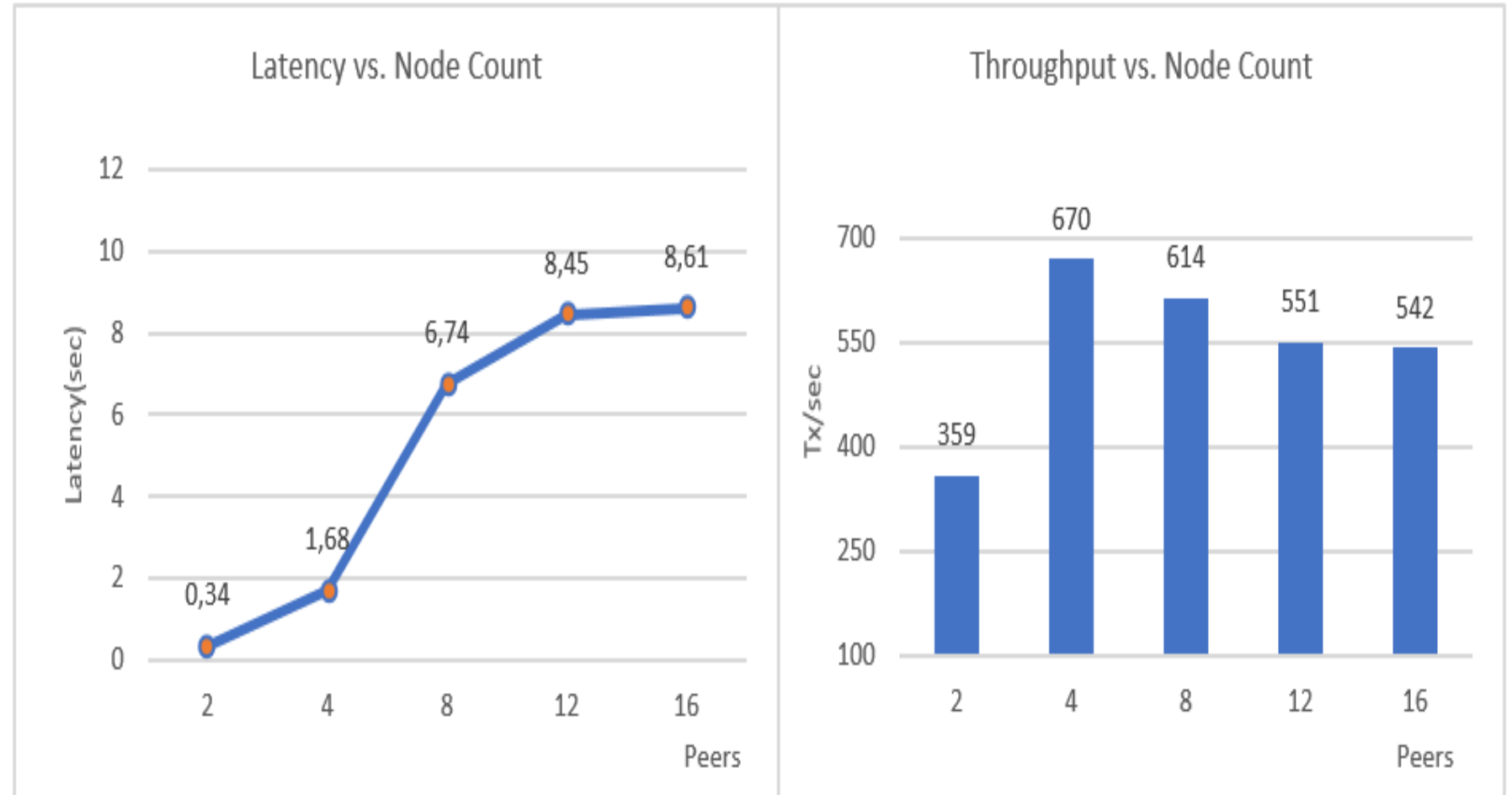


Figure 1: Transaction Latency and Throughput for Hyperledger Fabric

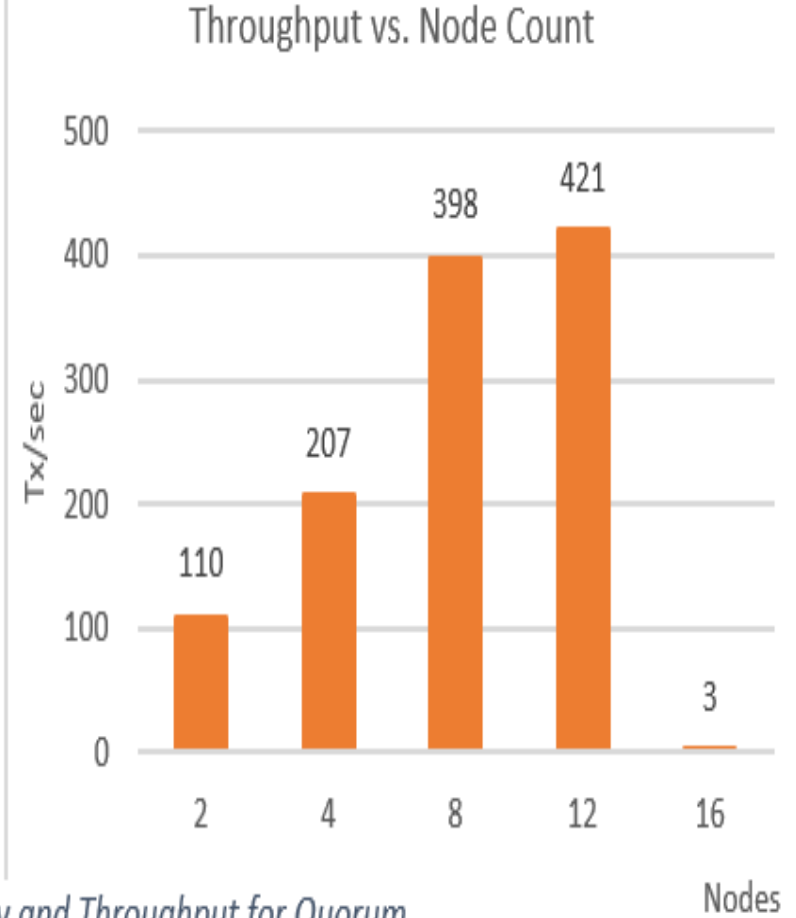
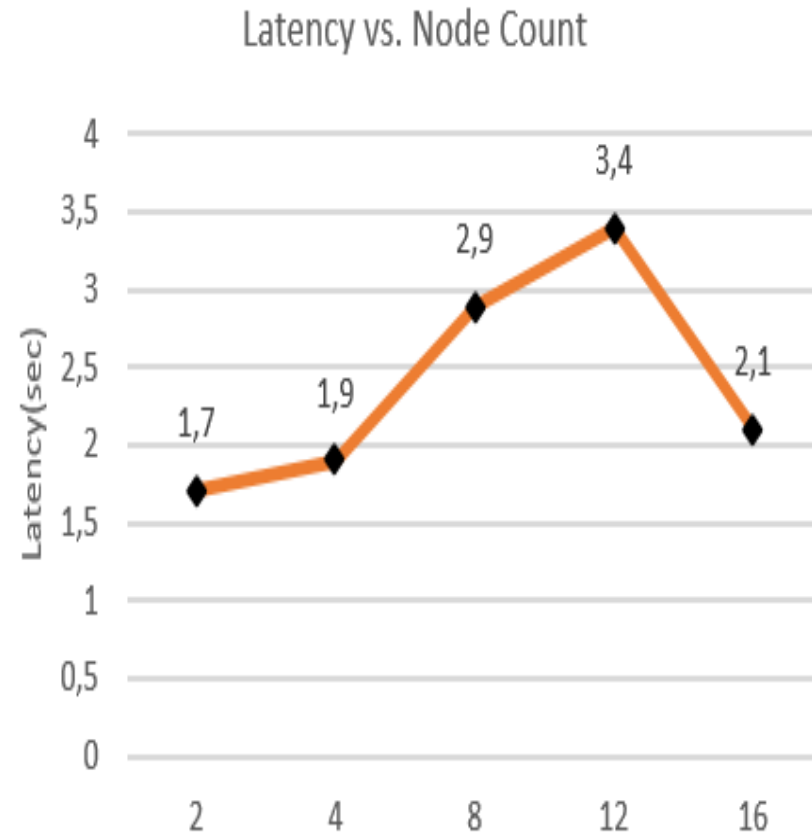


Figure 2: Transaction Latency and Throughput for Quorum

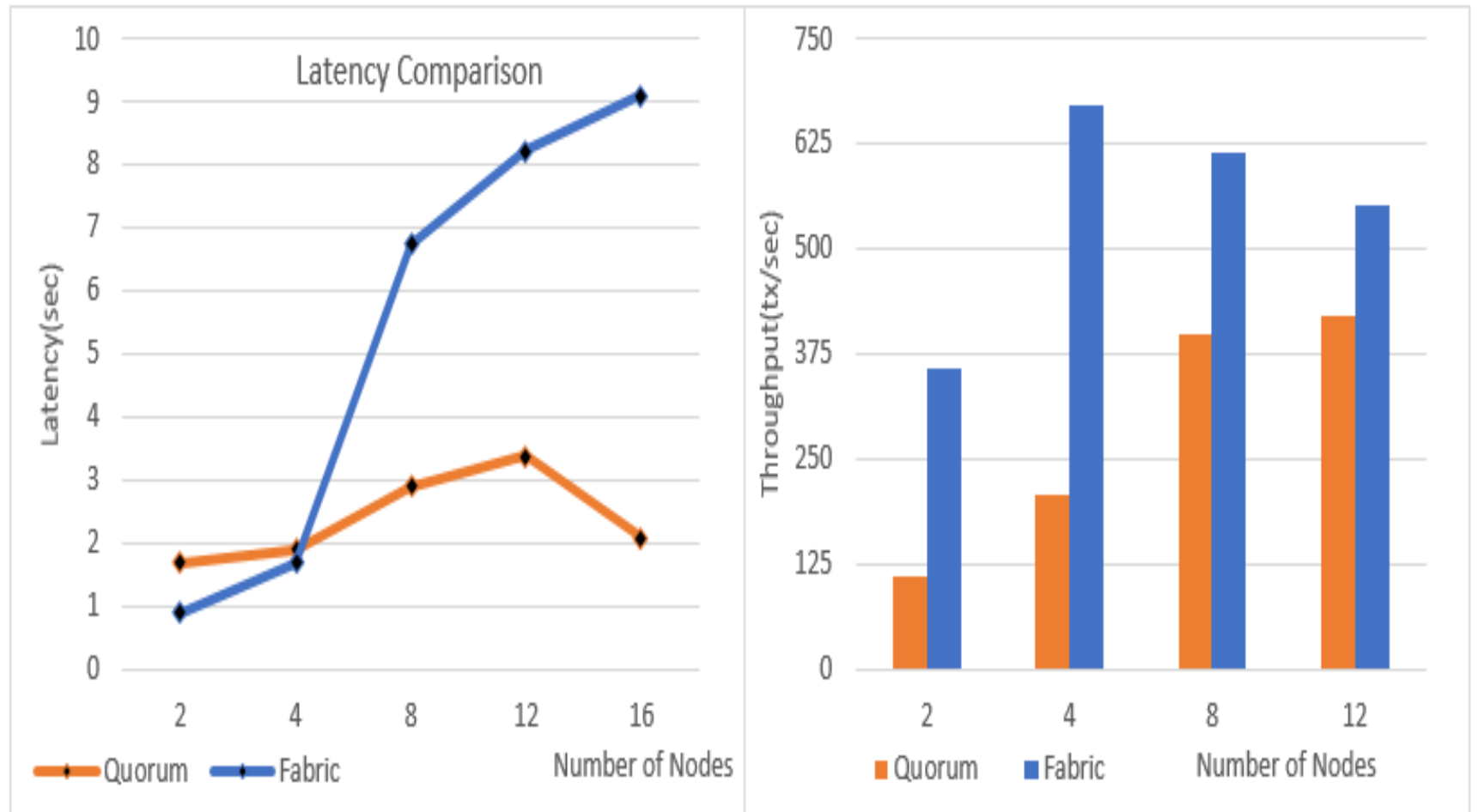
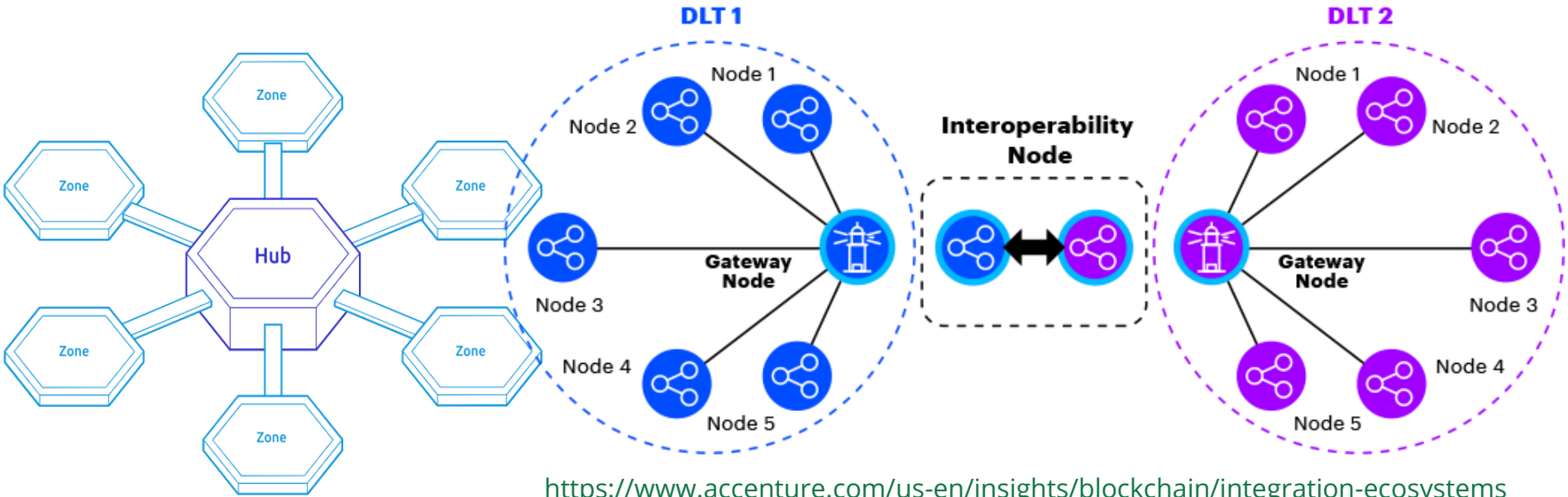


Figure 3: Latency and Throughput among Hyperledger Fabric and Quorum



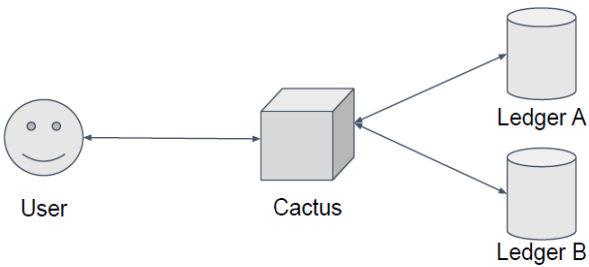
# Interoperability

- Integration with Digital Currency, and possibly with Digital ID and Digital Asset environments.
- Gateway to cross-border.

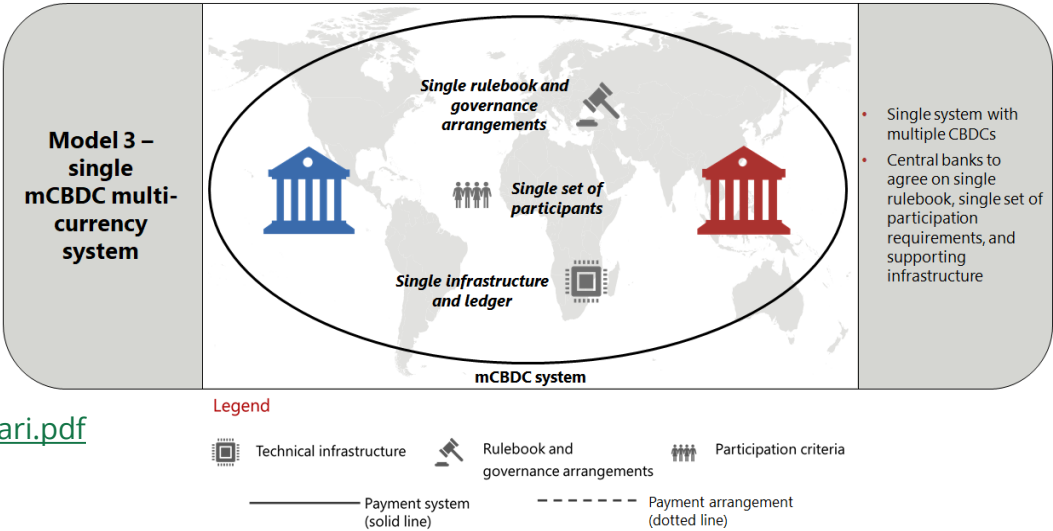


<https://v1.cosmos.network/intro>

<https://www.accenture.com/us-en/insights/blockchain/integration-ecosystems>

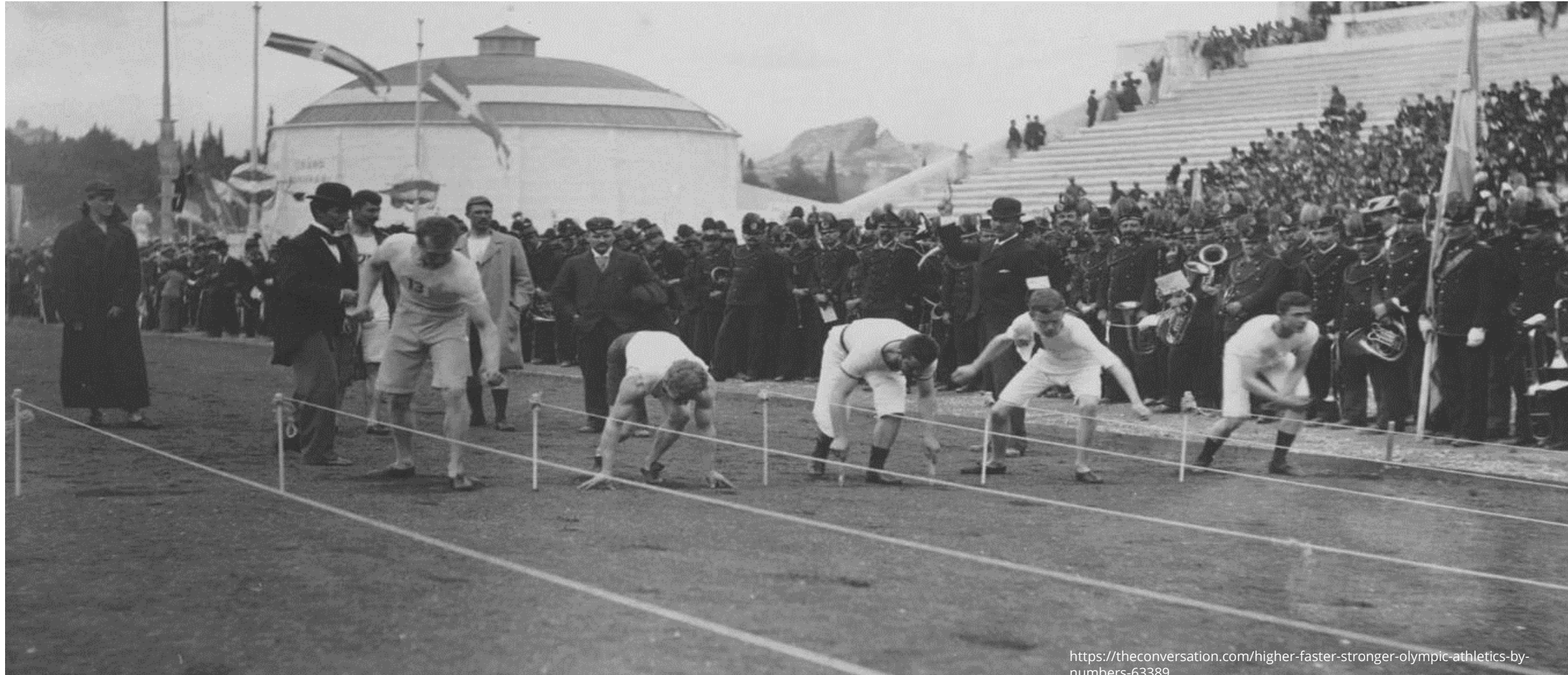


<https://www.itu.int/en/ITU-T/webinars/20200902/Documents/Peter%20Somogyvari.pdf>



<https://www.bis.org/publ/bppdf/bispap115.pdf>

# Ends as it begins:1896 Olympics 100 meter Thomas Burke just beginning to win the Gold Medal with 12 seconds –



<https://theconversation.com/higher-faster-stronger-olympic-athletics-by-numbers-63389>

In the Age of Central Banking 4.0: Fin-Reg Tech & Digital Payments: What is the optimal payment method?



**TÜRKİYE CUMHURİYET  
MERKEZ BANKASI**

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