BIS Innovation Hub

CBDCs – Opportunities for Collaborative Innovation

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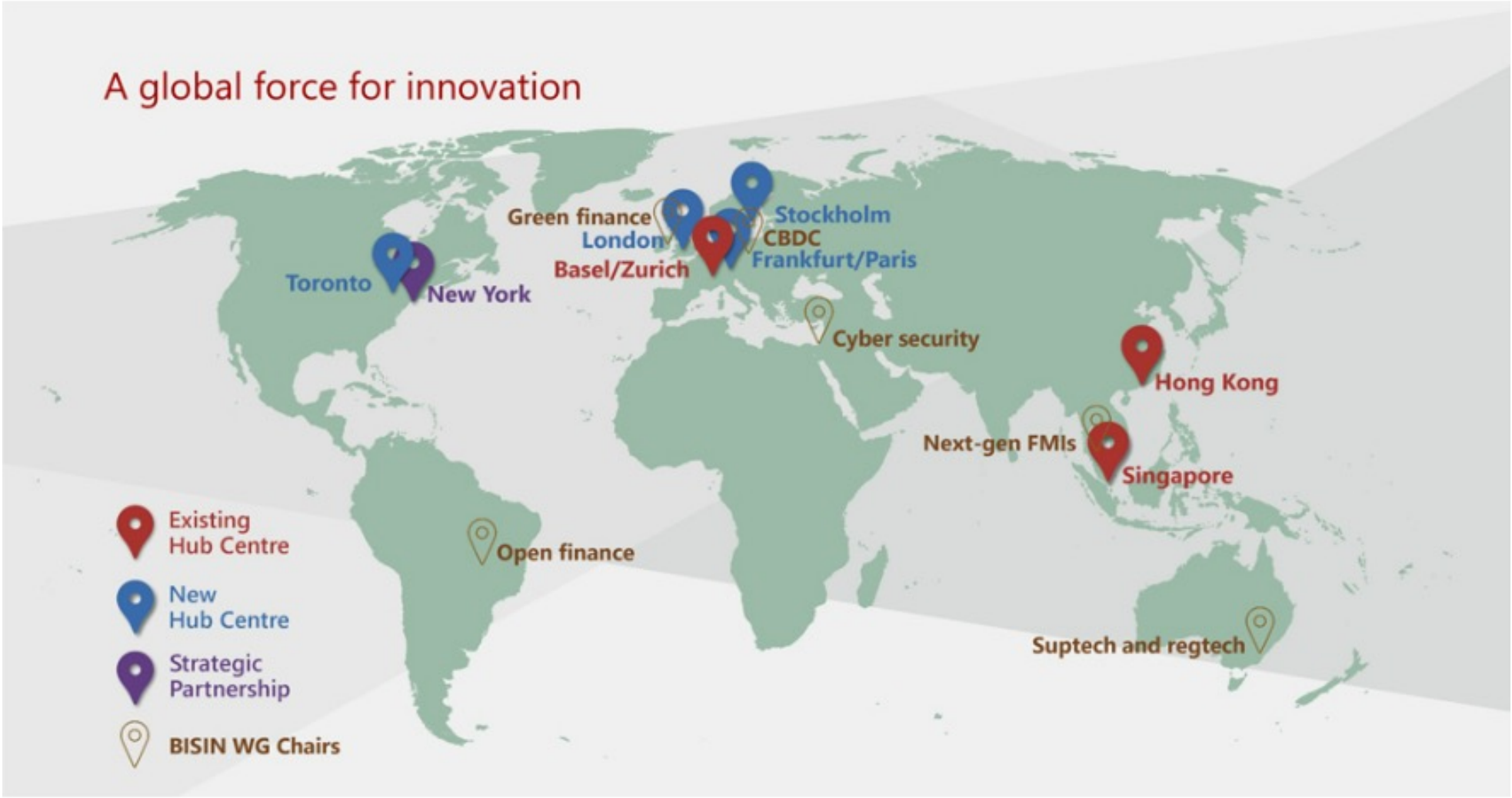
The BIS Innovation Hub



The Vision of Central Bank Digital Currencies (CBDCs)

A trustworthy, stable, and versatile digital currency that enables the representation, measurement, and transfer of value by anyone, anywhere, and anytime.

- Trustworthy – direct claim on the central bank, secure
- Stable – is part of the country's fiat currency supply
- Versatile – programmable, composable, resilient

- Anyone – individuals, organizations, things
- Anywhere – cross platform, cross border, even in the metaverse
- Anytime – 24x7

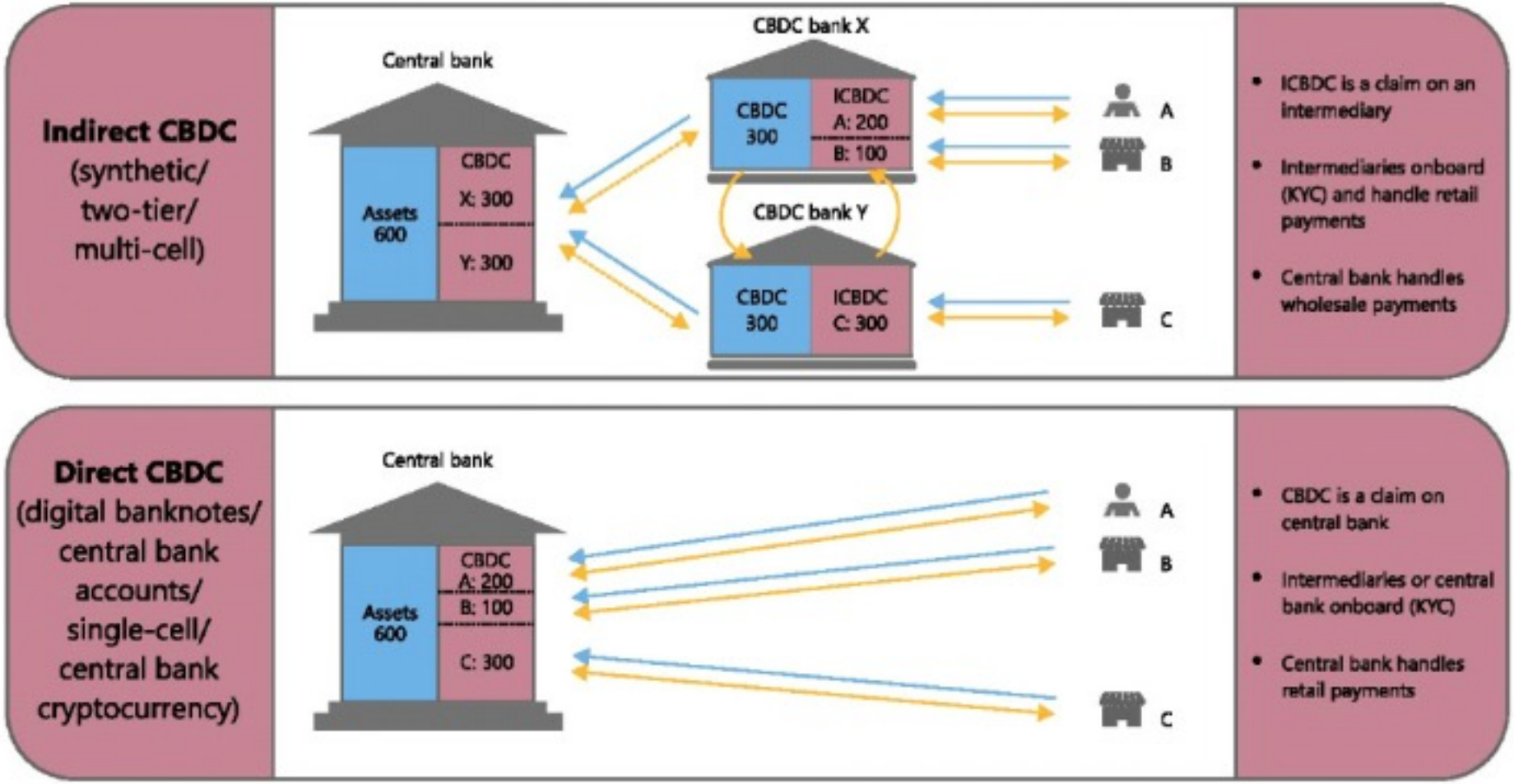
A lot of regulatory and technical work are needed before the vision can fully materialize.

Policy Objectives for the CBDC

1. Provide benefits and mitigate risks for consumers, investors, and businesses
2. Promote economic growth and financial stability and mitigate systemic risk
3. Improve payment systems
4. Ensure the global financial system has transparency, connectivity, and platform and architecture interoperability or transferability, as appropriate
5. Advance financial inclusion and equity
6. Protect national security
7. Provide ability to exercise human rights
8. Align with democratic and environmental values, including privacy protections

(The White House: Policy Objective for a U.S. Central Bank Digital Currency System, Sep. 2022)

Overall CBDC Model



CBDC: Areas for Consideration and Experimentation

- Fundamentals: issuance, distribution, circulation, destruction
  - Issuance and destruction: can only be performed by the central bank
  - It is possible for another party to generate and use a "wrapped" CBDC, when the same amount of CBDC is locked
  - Open questions: how to handle interests, dividends, etc. generated by CBDC
- Distribution: direct, intermediated, hybrid
- Circulation: retail vs. wholesale, domestic vs. cross-border

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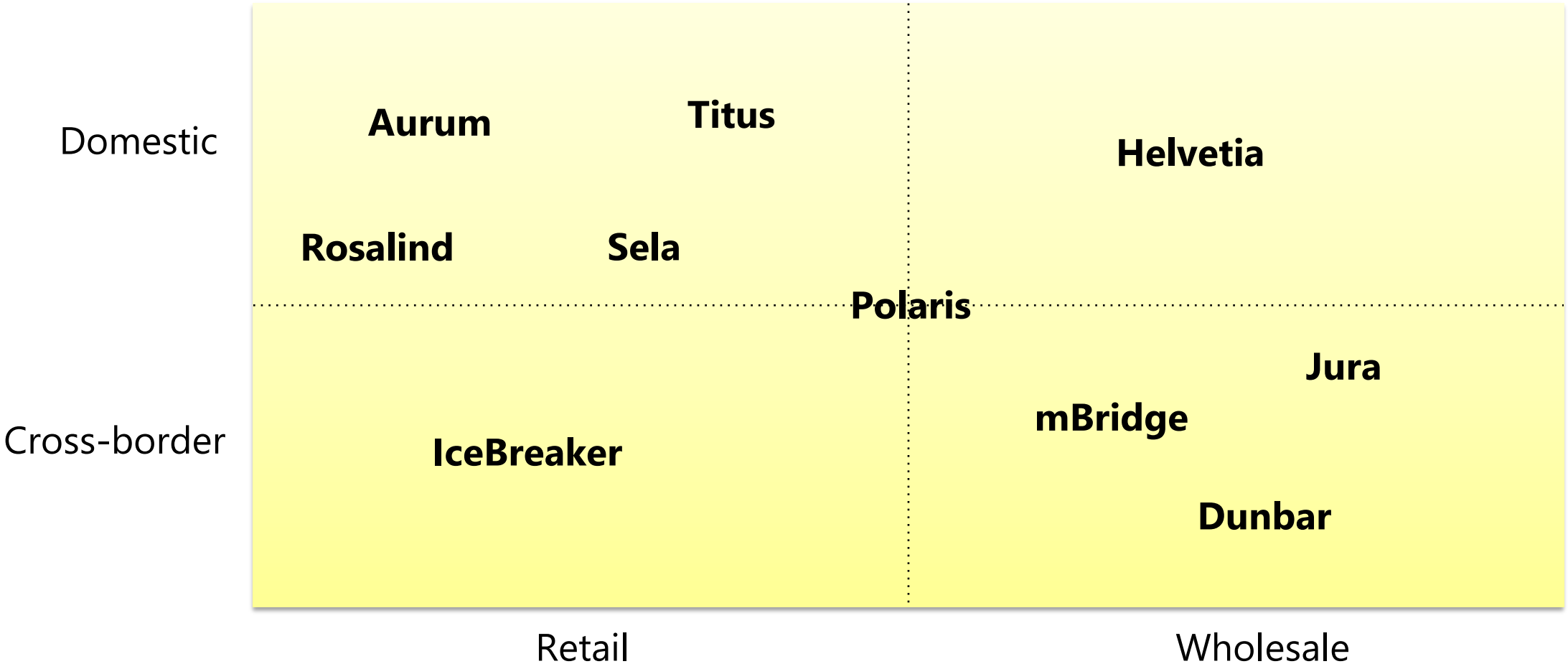
BIS CBDC Projects

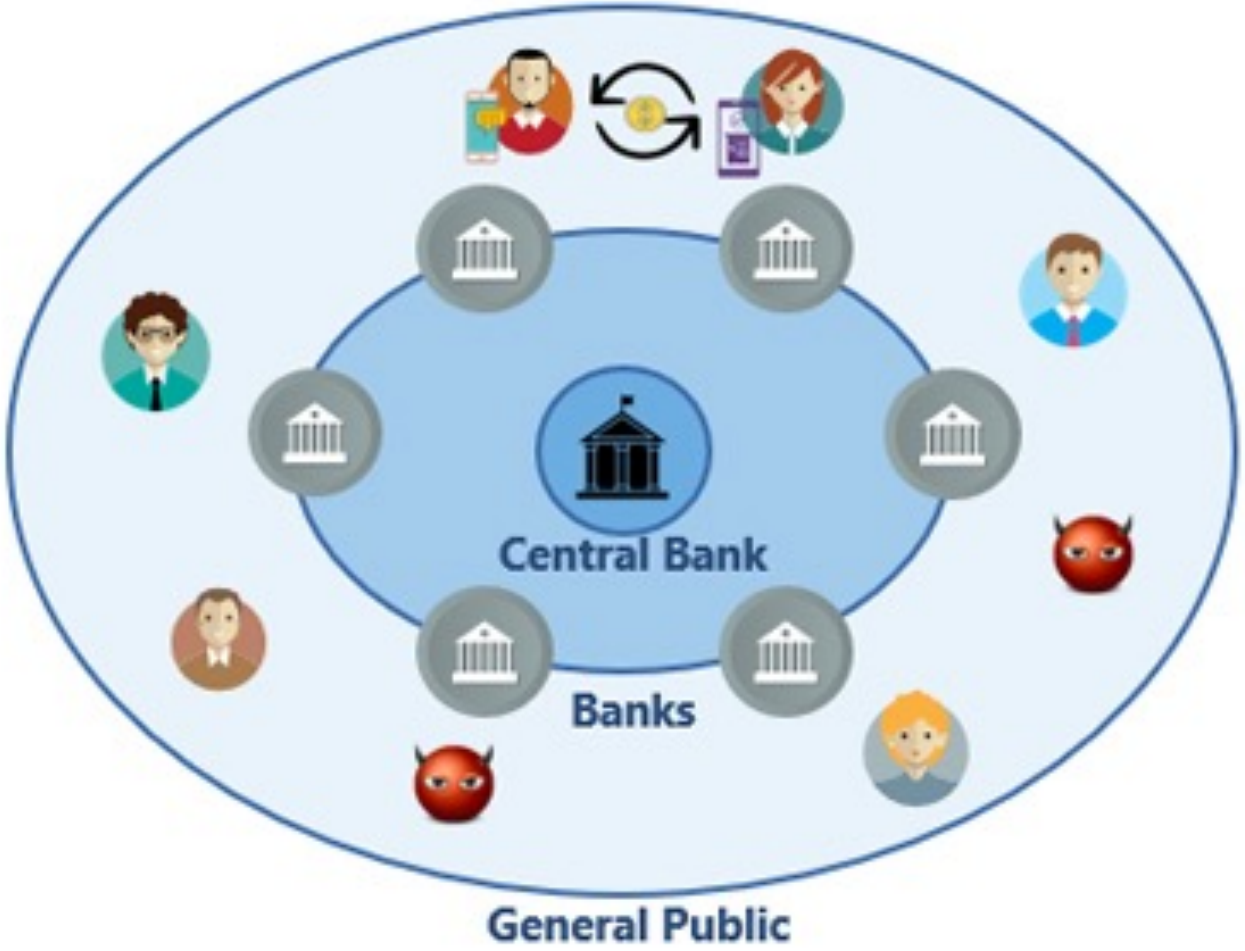
Overview of BIS Innovation Hub Projects on CBDCs



Project Aurum

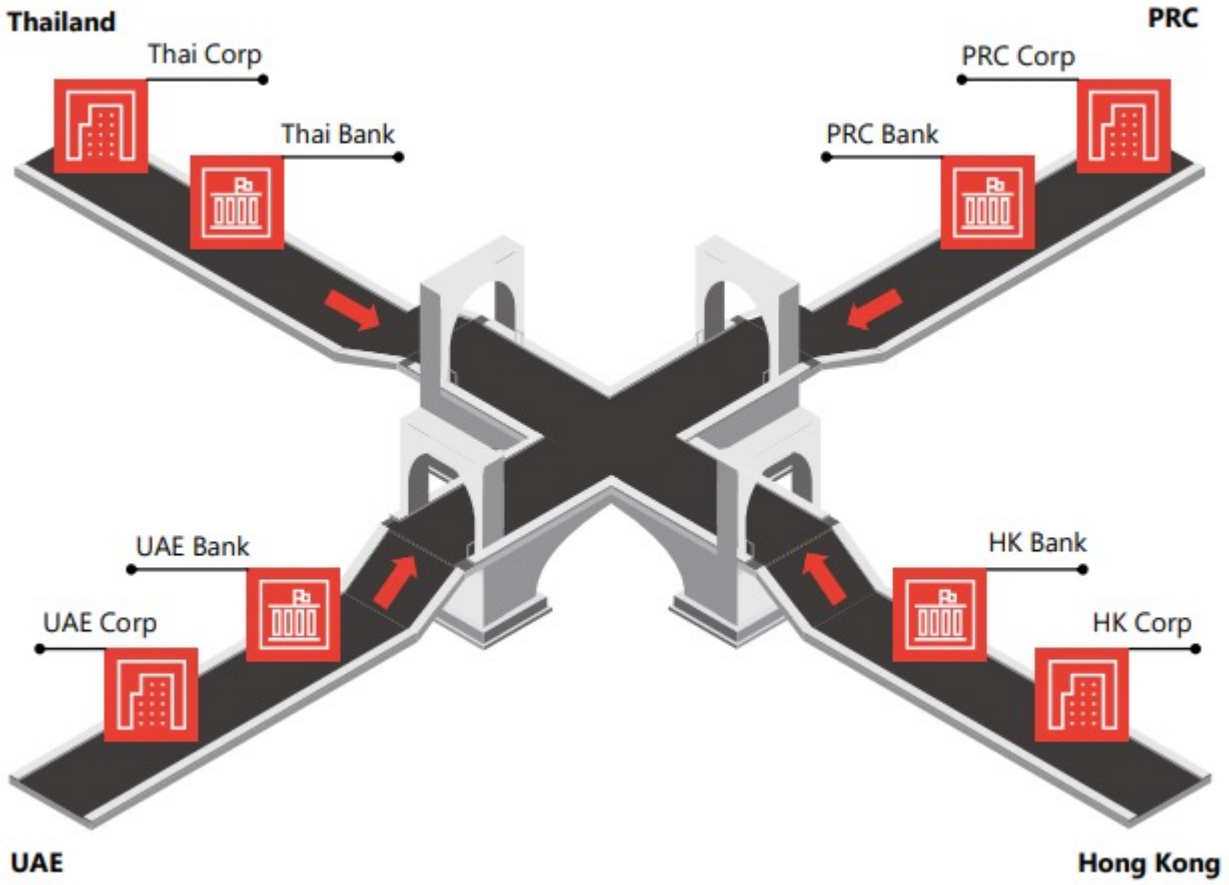
- Two-tier distribution model of retail CBDC
  - Central bank →
  - Commercial banks &
    - Payment service providers →
  - End users

- Two levels of ledgers
- Policy enforcement
- Traceability of the flow and CBDC backing of eMoney



Project mBridge

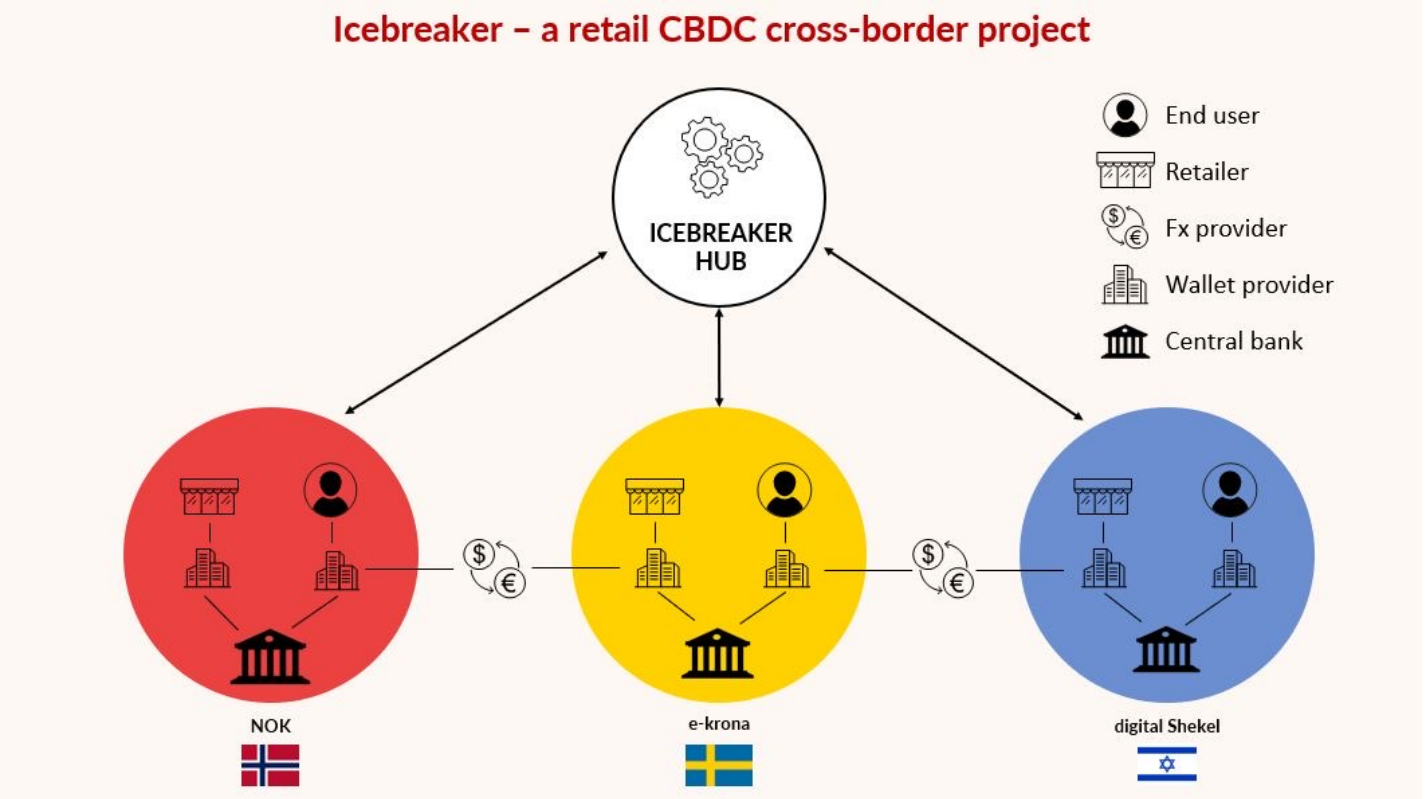
- Participants from four countries
  - Central banks
  - Commercial banks
  - Corporations
- Same platform, multiple CBDC tokens
  - Payment-vs-payment
  - Foreign exchange facilitation
  - Liquidity management
  - Transparency vs. privacy



Project Icebreaker

- Hub-and-spoke model
- Three different DLT-based CBDCs
  - Corda
  - Quorum
  - HyperLedger Besu
- Communications through APIs
- Hub will only pass messages, and not store any CBDCs

- Use hashed timelock contracts (HTLCs) to achieve payment-vs-payment (PvP)



Project Polaris

- Secure and resilient CBDCs
- Offline payments
  - Comprehensive study of current and future state
  - Provide guidance to central banks on technology options and best practices
- Reference architecture
  - Capabilities for secure and resilient CBDC
  - Processes and best practices
  - Risk-based, and continuous adjustment to emerging threats

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Public-Private Partnership is a key to the success of CBDCs.