



Central Bank of Brazil's Innovation Agenda

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What is happening in the digital world

- People look for a digital representation of value
- Assets are becoming encrypted
- Distributed ledgers allow assets to be verifiable and transferable, with divisibility

So, what is the real debate?

- Are we moving towards a tokenized economy?
- Tokenizing assets for negotiation is the main transformation
- To extract value from an asset in its digital form
 - Art, pictures, properties, ideas and even money

Metaverse

W6C9A6L26

Even virtual reality is being monetized



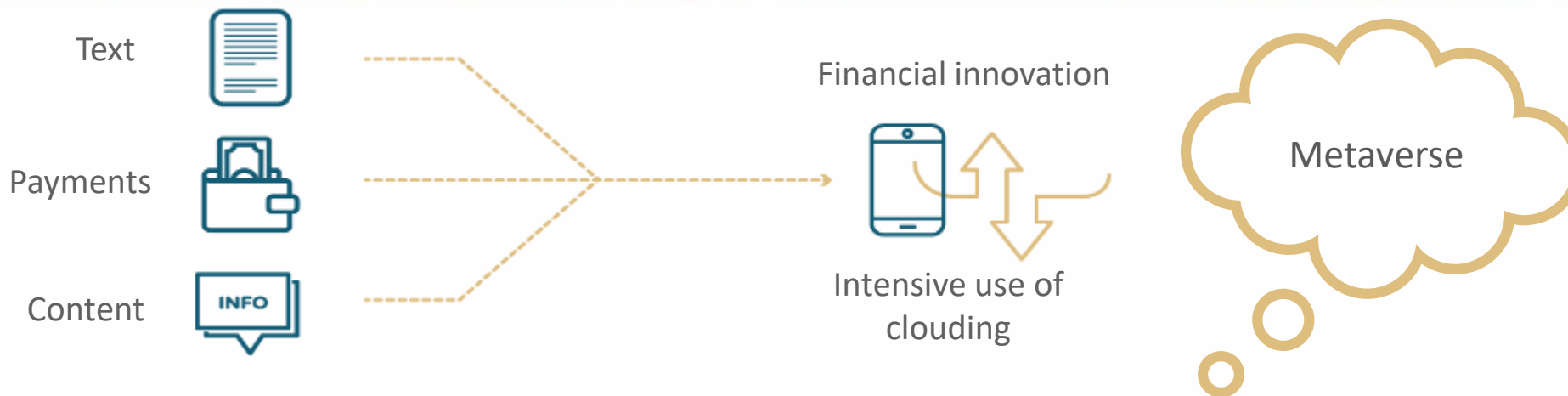
If the tokenization thesis holds true, then the 21st Century may see the creation of regulated, global, token-based, multi-asset networks*

* The Regulated Internet of Value, Citi's Digital Policy, Strategy and Advisory, Jun/21.

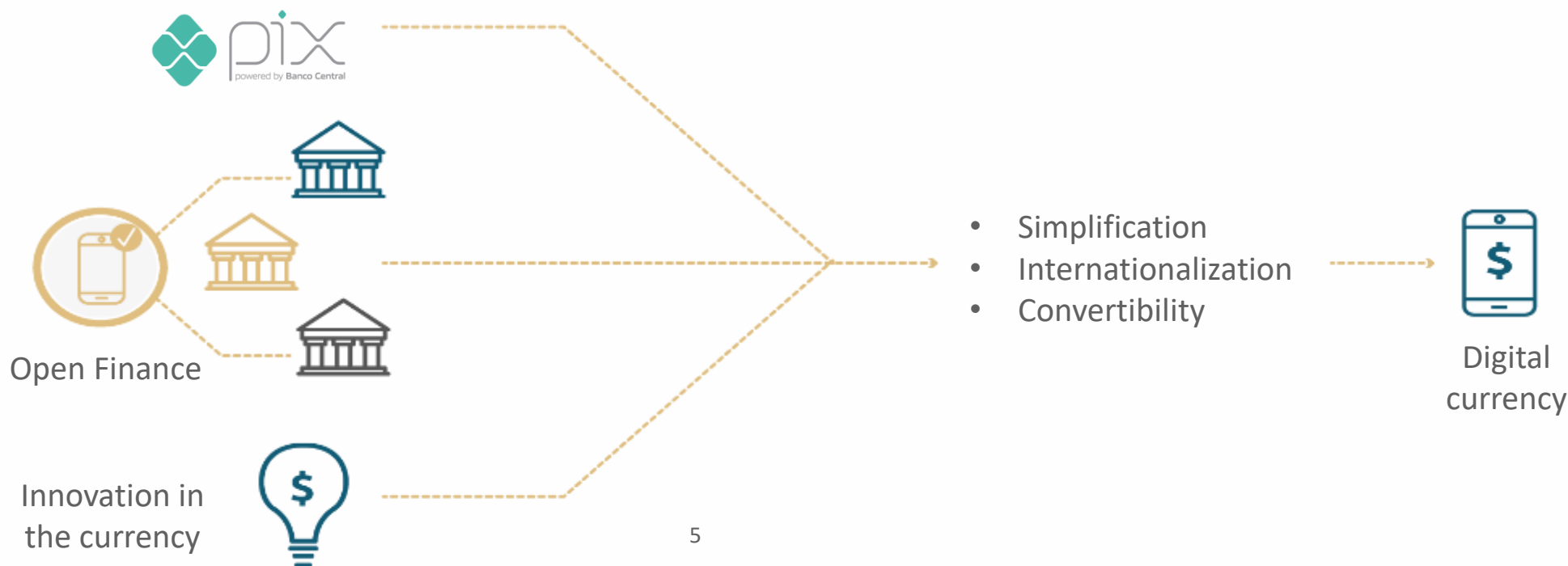
It's only the beginning!

Innovation in the financial system

Convergence

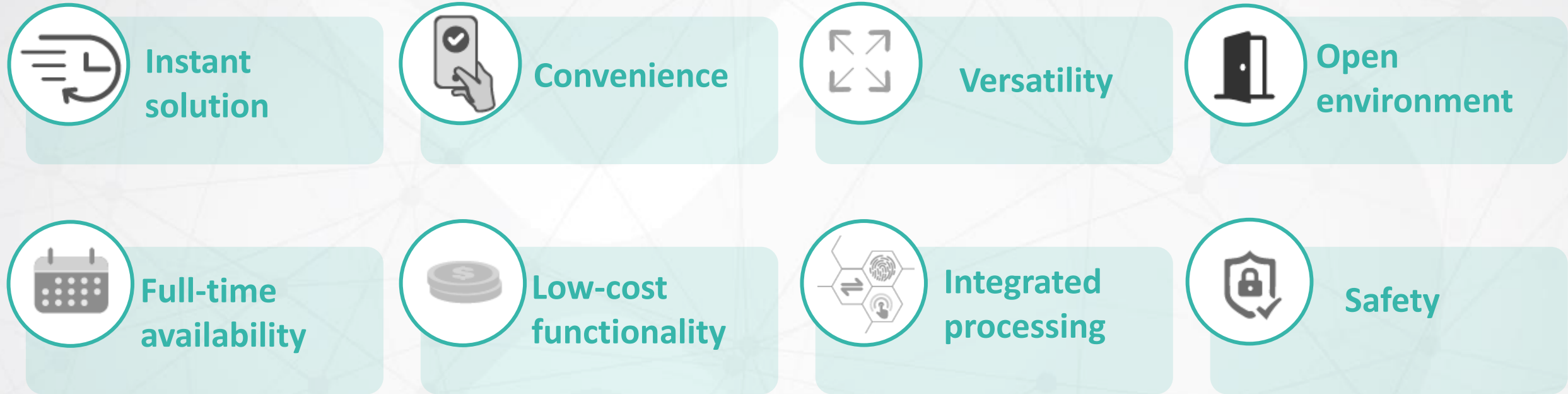


Innovation in the SFN





Technology Agenda

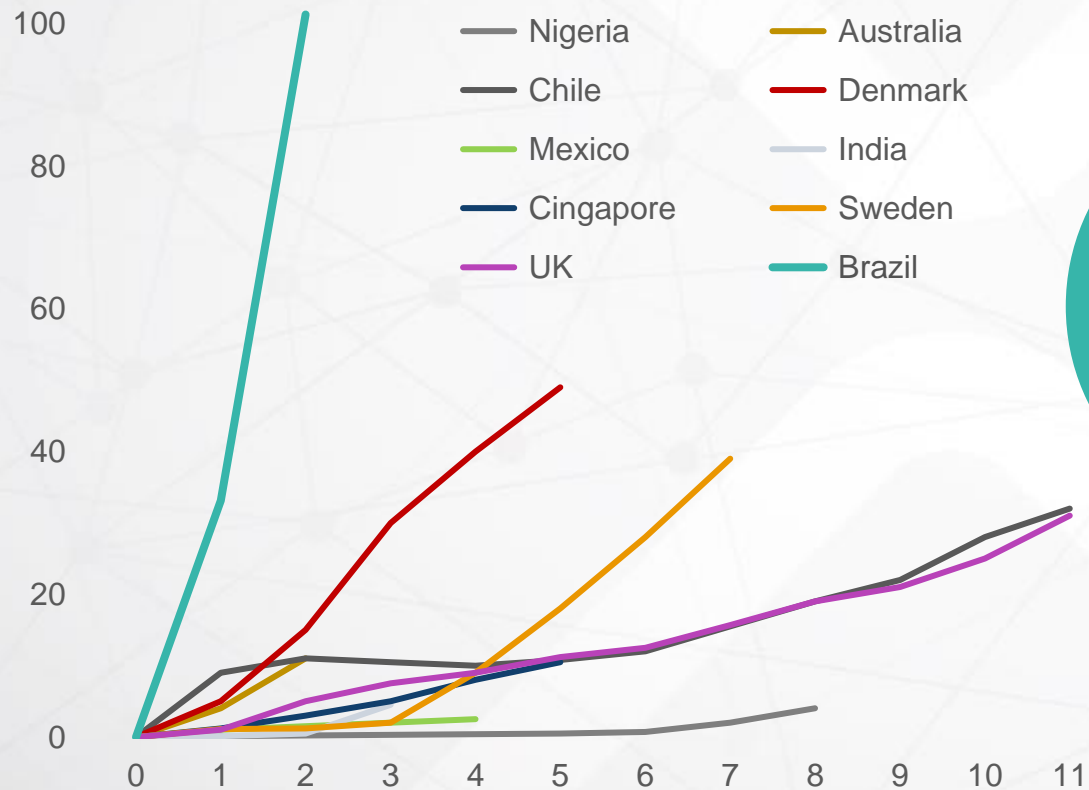


Final step towards a synthetic CBDC

- e-money
- “universal” access
- Pix

Pix popularity increases

Per capita transactions – by countries

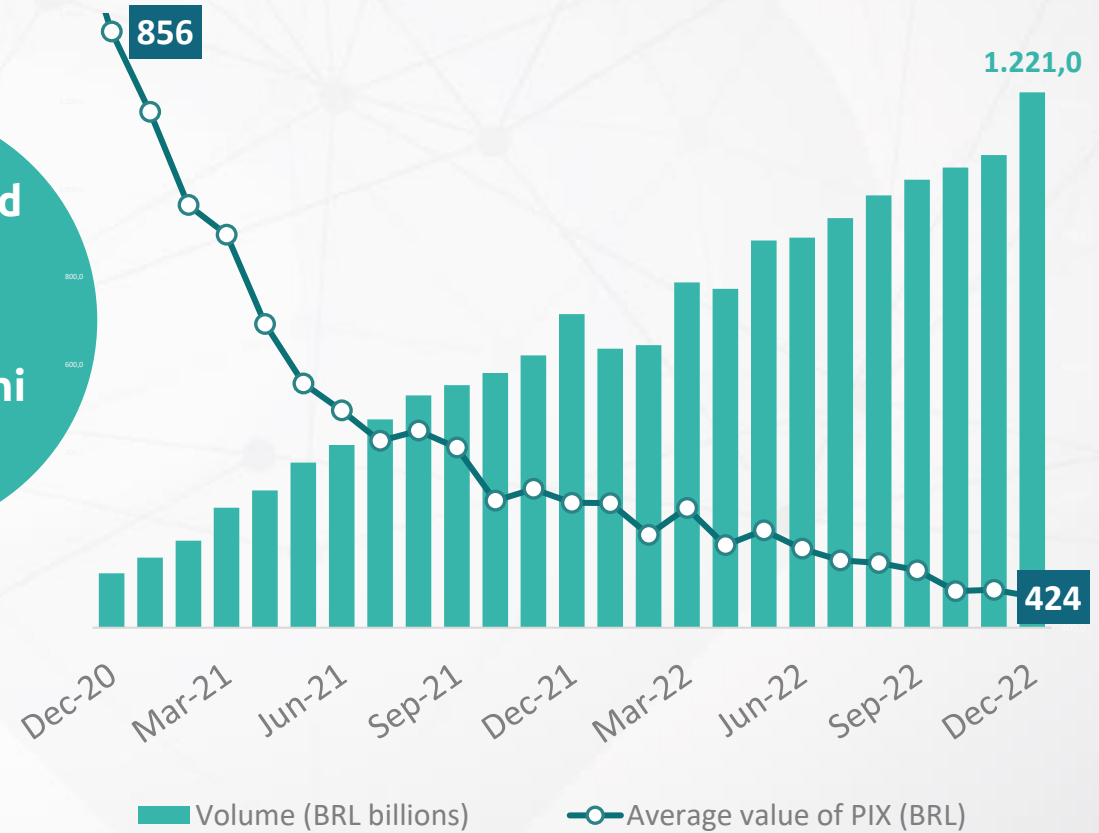


Years after implementation

Pix registered keys
(millions)

Total : 550.8 mi
Dec/2022

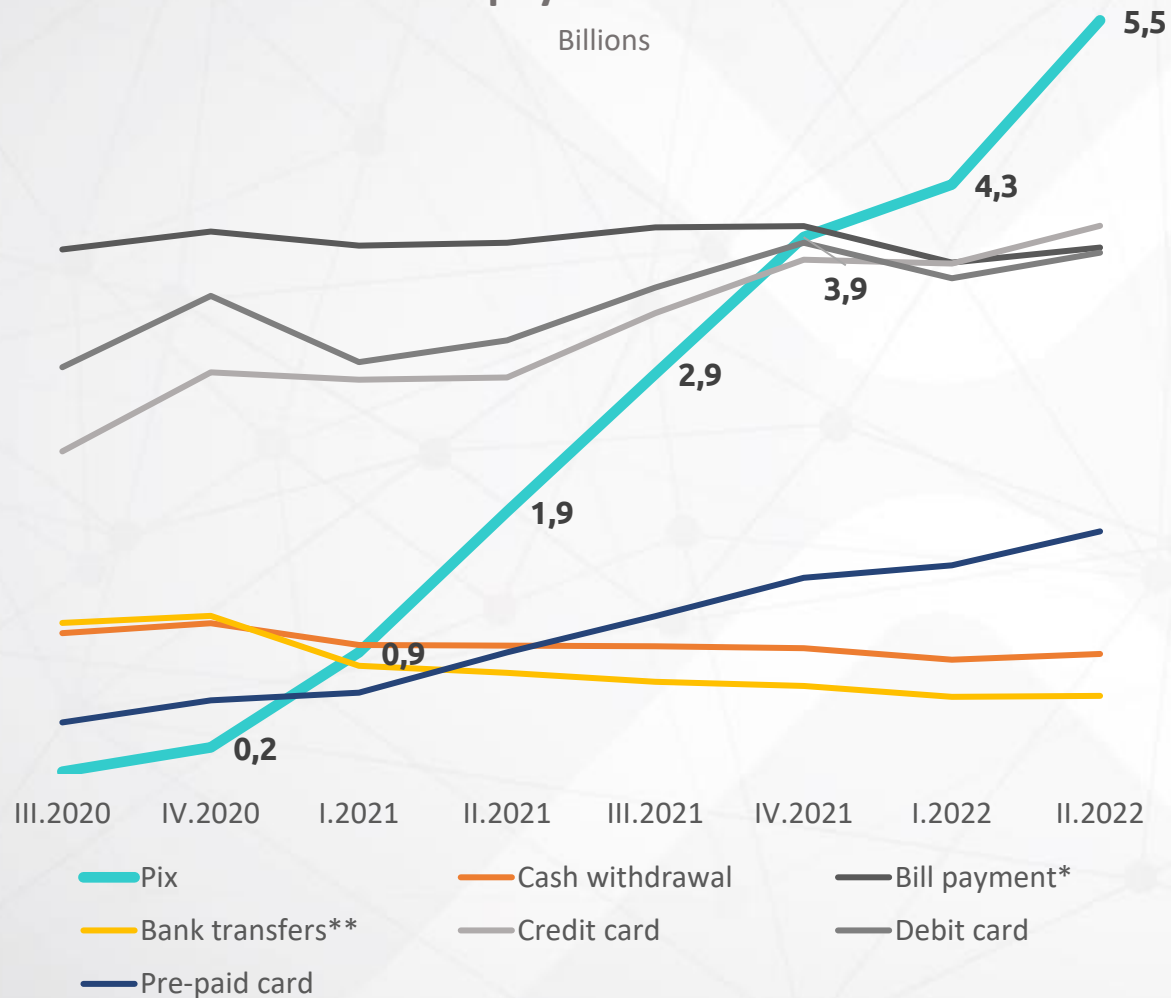
Pix transactions volume and average value



Pix popularity increases

Means of payment transactions

Billions

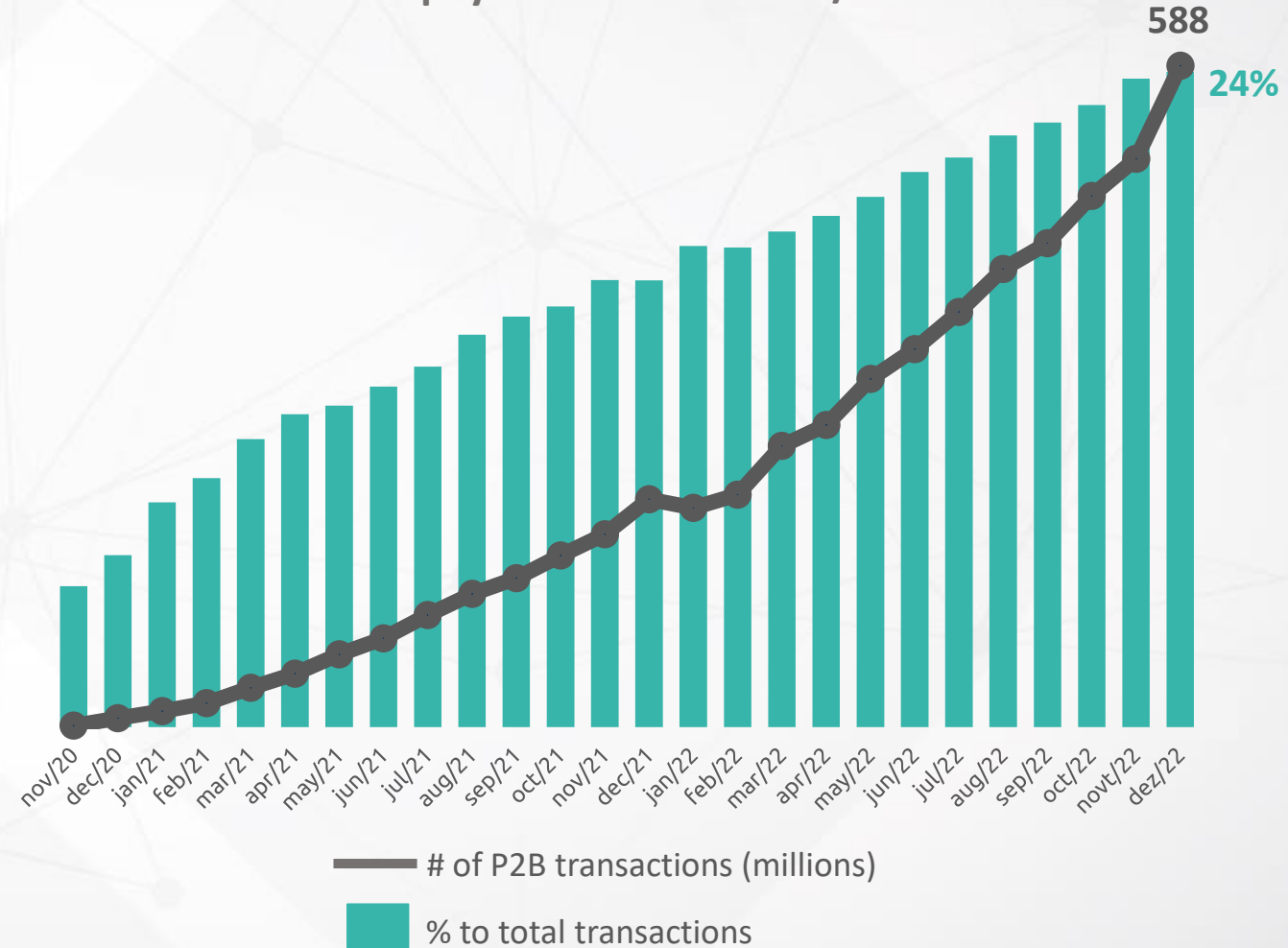


* Bank slips + Bank agreements + Direct deposits

** TED + DOC + TEC + Bank checks + Interbanking transfers

Source: BCB.

Pix: payments to business/firms



Pix – New frontiers

Priorities for 2023



Pix charge enhancements

- Integration via standardized file;
- Centralized base to facilitate the management of charges.

Pix Automatico launch

- Similar to direct debit;
- End of bilateral agreement paradigm;
- New alternative for recurring payments.

Pix by PISP in Open Finance

- Studies for a more user-friendly journey;
- Simplicity with fewer “clicks”.

Buy Now Pay Later

- Market initiatives of BNPL using Pix;
- Integration with Open Finance

Pix internationalization

Bilateral meetings: Uruguay, Colombia, Peru, Ecuador, Canada e USA

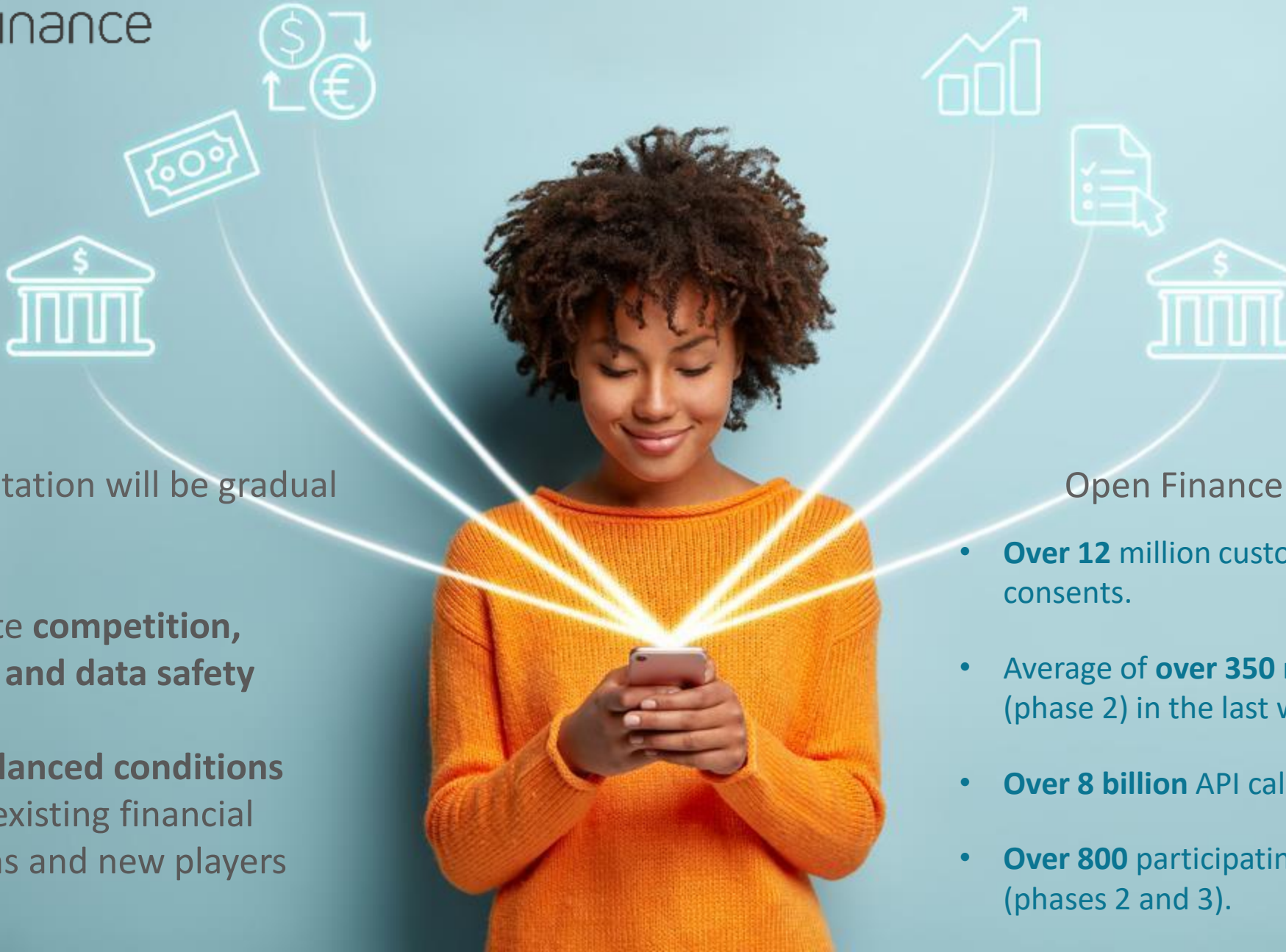
Cooperation with African countries: Bill and Melinda Gates Foundation and AfricaNenda

Technical cooperation event with more than 30 countries: Deep Dive into Pix

Steps for a future
integration of domestic
systems of instant
payments



openfinance



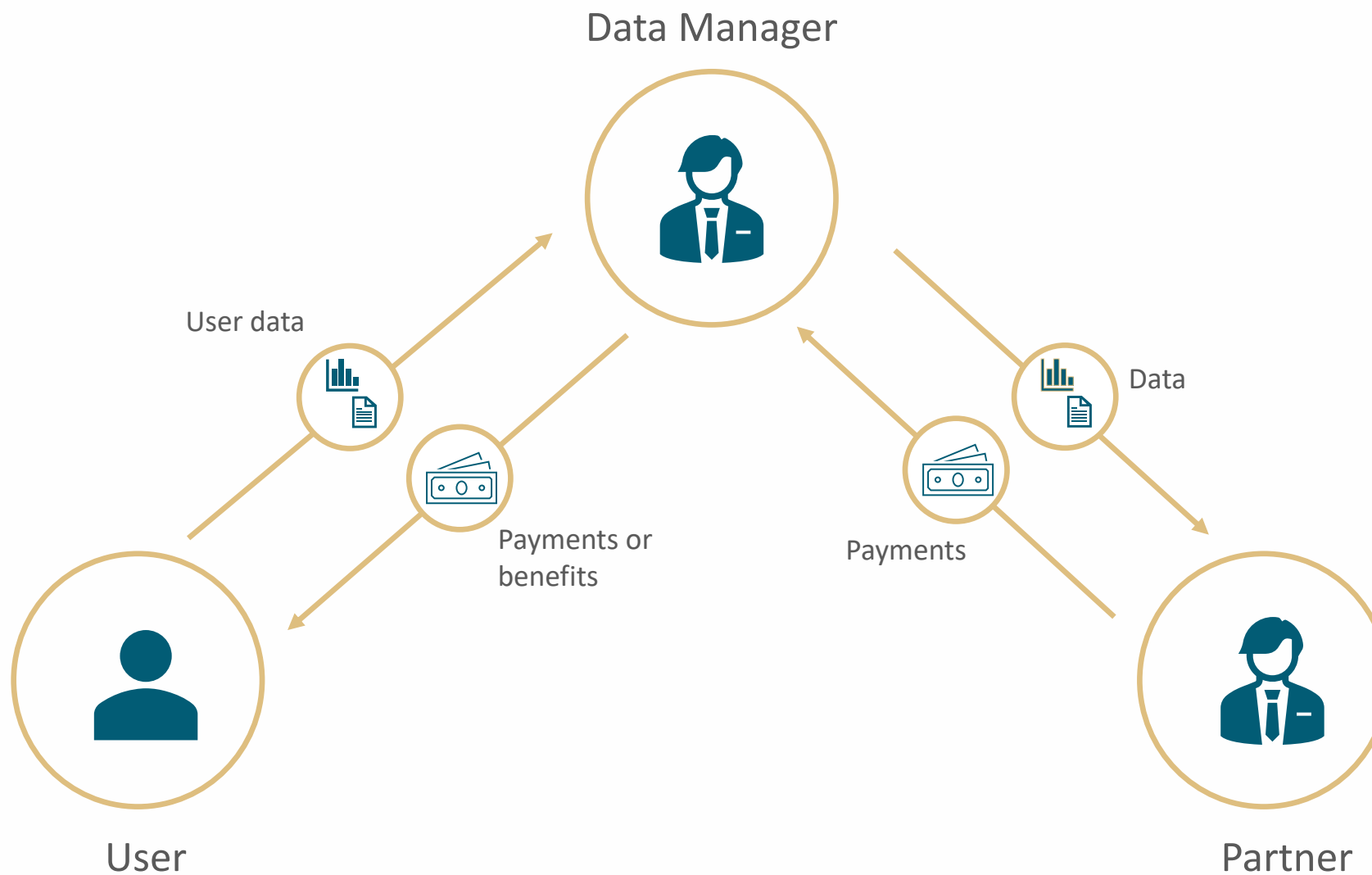
- Implementation will be gradual

Goals:

- To promote **competition, efficiency and data safety**
- Proper **balanced conditions** between existing financial institutions and new players

Open Finance in numbers:

- **Over 12** million customer data sharing consents.
- Average of **over 350 million** API calls (phase 2) in the last weeks.
- **Over 8 billion** API calls (phase 2).
- **Over 800** participating institutions (phases 2 and 3).



An aerial night view of a city skyline, likely New York City, with numerous skyscrapers illuminated. Overlaid on the left side of the image is a dark blue semi-transparent panel containing several circular icons of cryptocurrencies: Bitcoin (BTC), Ethereum (ETH), and Monero (XMR).

CBD-Cs



**BANCO CENTRAL
DO BRASIL**

Three kinds of “practical” applications, internationally observed:

1. Wholesale payments (Euro Area, Singapore, Switzerland)
2. Instant payments (Bahamas, China, Sweden)
3. Fostering new business models (Brazil, Canada, Korea)



Opportunities

- Reduced transaction costs and friction for:
 - designing, distributing, negotiating and settling financial deals
- High degree of
 - standardization and functional interoperability, reuse and composability of financial services
 - auditability, traceability and transparency
 - accountability: software-based governance
- Financial inclusion
 - automatic tools available to everyone, with transparency and non-discriminatory execution

Challenges

- Scalability and settlement fees
 - blockchain platforms are limiting
- Limited interoperability
 - blockchains \Leftrightarrow traditional financial services
- Lack of maturity
 - Governance: potential for facilitating the crime of money laundering
 - Technology: Operational risks, poor implementation choices, failed software execution and interdependencies

DeFi: Architecture

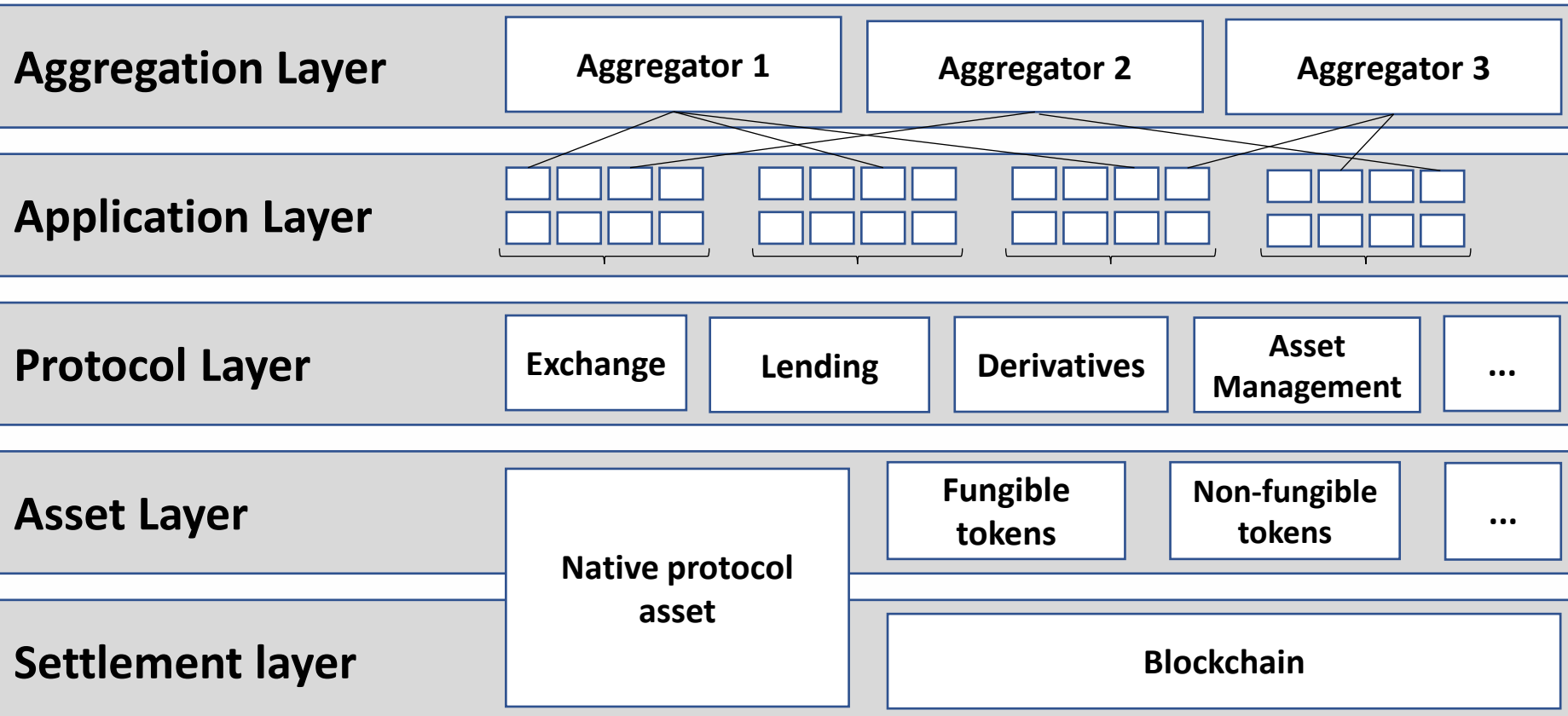
Platforms that aggregate several applications from the previous layer

Development of user-oriented applications

Standardizations for specific business models

Standards for issuing tokens representing financial instruments




Blockchain and its native token



A CBDC for Brazil: The Digital Real



Policy objectives

-  **Innovation and competition in a digital economy**
-  Improved cross-border payments
-  Reduction in the use of cash

Challenges

- Must enable uses that go beyond the payment solutions we have available today.
 - It should take advantage of the business ecosystem we expect to emerge from the Open Finance.
 - Demand already exists – Lift and Regulatory Sandbox.

- Depends upon maturation

BC# Agenda

Internal markets

International discussion

An instrument for the BCB to fulfill its mission in a digital economy

Guidelines:

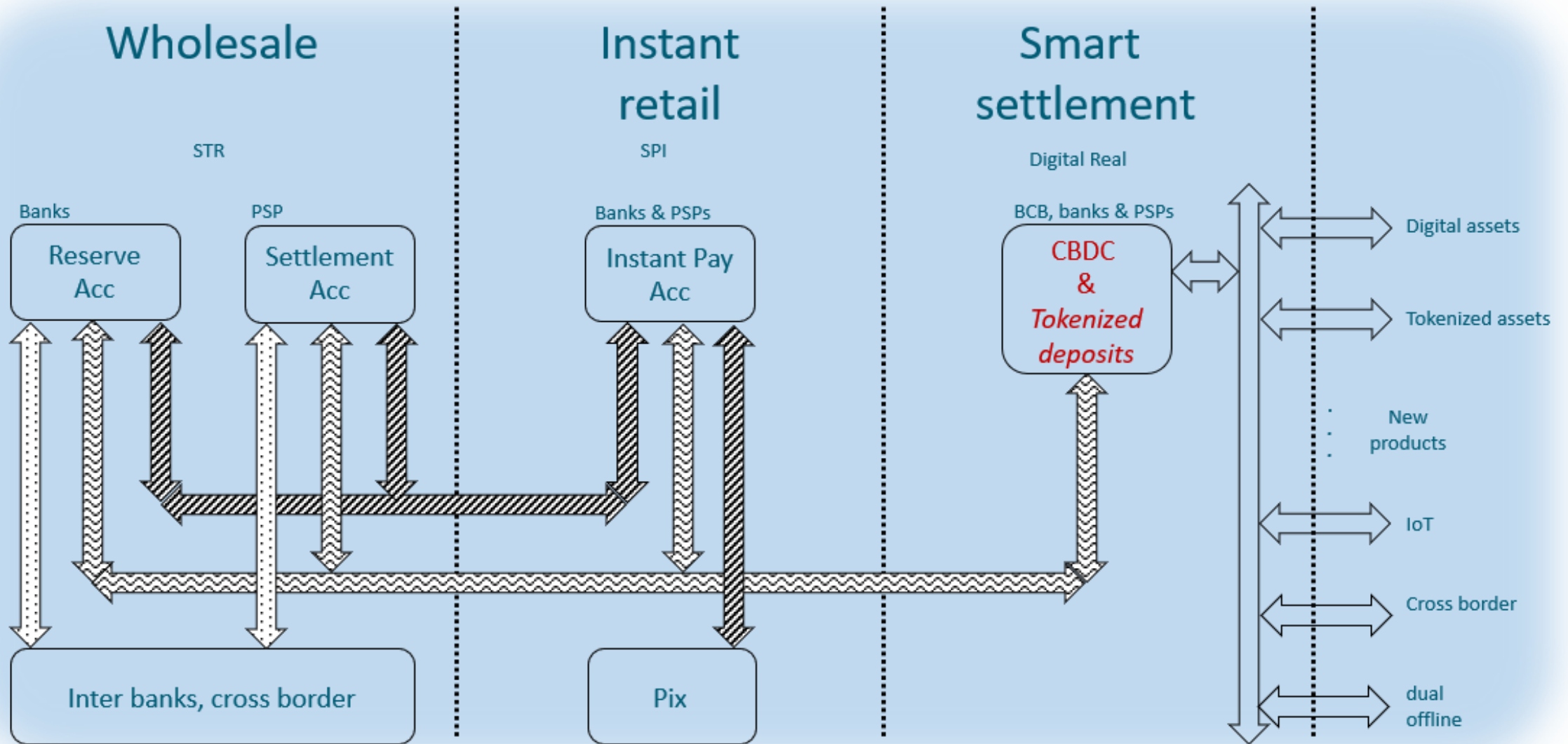
- Extension of the Brazilian real
 - Emission by BCB
 - Custody and distribution by the payment system
- Retail payments
 - On-line and, eventually, off-line
- ***Innovative models development***
 - *programmable money, smart contracts, IoT*
- Non-interest-bearing
- Guarantee of legal certainty
- Data privacy and security
 - Bank secrecy and Brazilian General Data Protection Act
- Preventing and combating money laundering
 - Compliance with court orders to track illicit transactions
- Interoperability and integration
 - Cross-border payments
- High cyber resilience

- Brazil seems to follow a different path
- Central banks debate:
 - New business models/permissioned DLT/centralized settlement
 - Who should centralize protocols standardization
 - Who is responsible for data protection
 - How to avoid the corrosion of banks balance sheets

- It transforms banks and IPs deposits (M0, M1) in tokens – stablecoins
- It will have an equivalent value to the Brazilian Digital Real (CBDC)
- Inherits deposits characteristics – equivalent regulation
- Avoids problems of corrosion in banks balance sheets
- Banks are stimulated to tokenize its deposits, which generates positive outcomes:
 - Securitization of other assets
 - Same form of deposits insurance applies
 - Technology use for controls
 - Asset/liability relation optimization
 - Improved processes of multiple contracts settlement atomization

CBDC: public and private partnerships

Public and private partnerships in liquidity provision





Digital Real

Focus

Use cases

- DeFi protocols
- DvP, PvP
- IoT

Infrastructure

- Interoperability, Scalability
- Programmability, Privacy
- Accessibility, usability

Next step

Pilot projects



Selected proponents

Aave

Banco Santander Brasil

Febraban

Giesecke + Devrient

Itaú Unibanco, B3 and R3

Mercado Bitcoin, Bitrust and CPqD

Tecban and Capital

VERT, Digital Assets and Oliver Wyman

Visa do Brasil, ConsenSys and Microsoft

Use cases

DeFi – Liquidity pool

DvP – Real assets

DvP – Tokenized securities

Dual offline

PvP – Brazil and Colombia

DvP – Digital assets (crypto)

IoT – Smart lockers/e-commerce logistics

Programmable money – funding for rural activity

DeFi – funding for SMEs

Next steps



LIFT Challenge

Pilots

Issuance

Complete digitalization of financial intermediation

- Greater inclusion
- Lower cost of intermediation
- More competition, with reduced entry barriers
- Risk control efficiency
- Data monetization
- Complete tokenization of financial assets and contracts

An integrated agenda

The four key blocks

Open
Finance

Digital Real
(CBDC)

Currency
international-
ization

Pix

Four key blocks

1. Currency internationalization and the opening of capital markets

2. Universal payment system (Pix)

- Wide usage by the population
- Cheap, fast, secure, transparent and inclusive
- Programmable

3. Open Finance

- Data standardization
- Inclusion of all products
- Safety -> Standardization
- Reduced cost of sharing

4. Digital Real (CBDC)

- Bridge to De-Fi environment
- Introduction of the concept of tokenization (broad base)
- Reduction of physical currency
- Increase in banking efficiency
 - Risk control
 - Settlement
 - Data analysis
 - Financing
 - Products
- Data monetization
 - Interaction of tokens with digital wallets
- Competition by channel, not only by product

Phases of the integration process

1. Pix and Open Finance
 - Payment initiator
2. Pix and other products
 - Ex.: Credit, etc.
3. Pix and currency internationalization
4. Pix and Digital Real (CBDC)
 - Digital wallet and non-digital wallet
5. Digital Real (CBDC) and Open Finance
6. Financial aggregator
 - Competition for channel
7. Build of a digital wallet

Financial services aggregator: an example

Offline

Online



Data wallet



Virtual assets (crypto assets)

Countries advance on the regulation of virtual assets.

Why regulate:

- AML/CFT, conduct problems, vulnerabilities to cyberattacks, tax evasion, financial system stability.

International organizations with recommendations:

- FSB, BCBS, FATF, IMF, CPMI/IOSCO.

Regulatory advances in selected countries:

- **U.S.:** Joint Statement on Crypto-Asset Policy Sprint Initiative and Next Steps (OCC, Fed, FDIC)
- **European Union:** *Markets in Crypto-Assets (MiCA)*: general legislation for the market of virtual assets
- **Asia:**
 - Japan and Singapore have followed the European Union model
 - China adopted a banishment policy

Virtual assets (crypto assets) – Vision of the future

We should combine safety and efficiency while promoting innovation.

Regulation should consider the following:

- Adoption of a proactive stance relating crypto assets.
- Understand how crypto assets can change financial intermediation.
 - How crypto assets will interact with traditional financial market and other markets.
 - Interconnection of crypto assets industry with CBDC, Pix, Open Finance, etc.
 - Financial services transformation and links to the real world and metaverse.
- Regulation should ensure that innovations are safe and bring more efficiency to the financial system.
- Congress recently approved a law that regulates virtual assets in Brazil.

Thank You!

