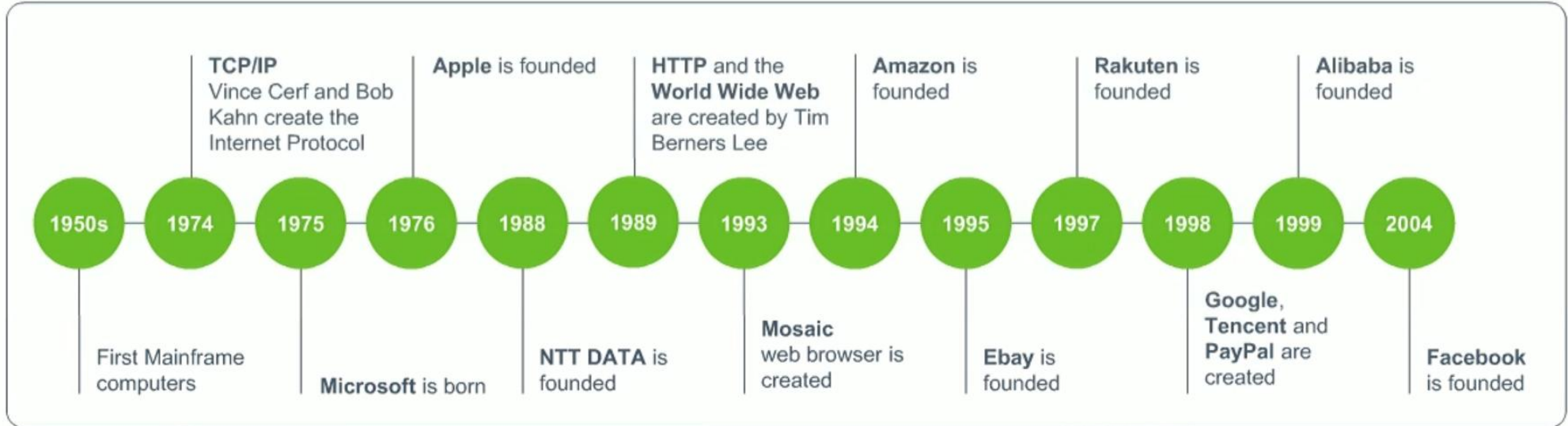


# From the Internet of Information...

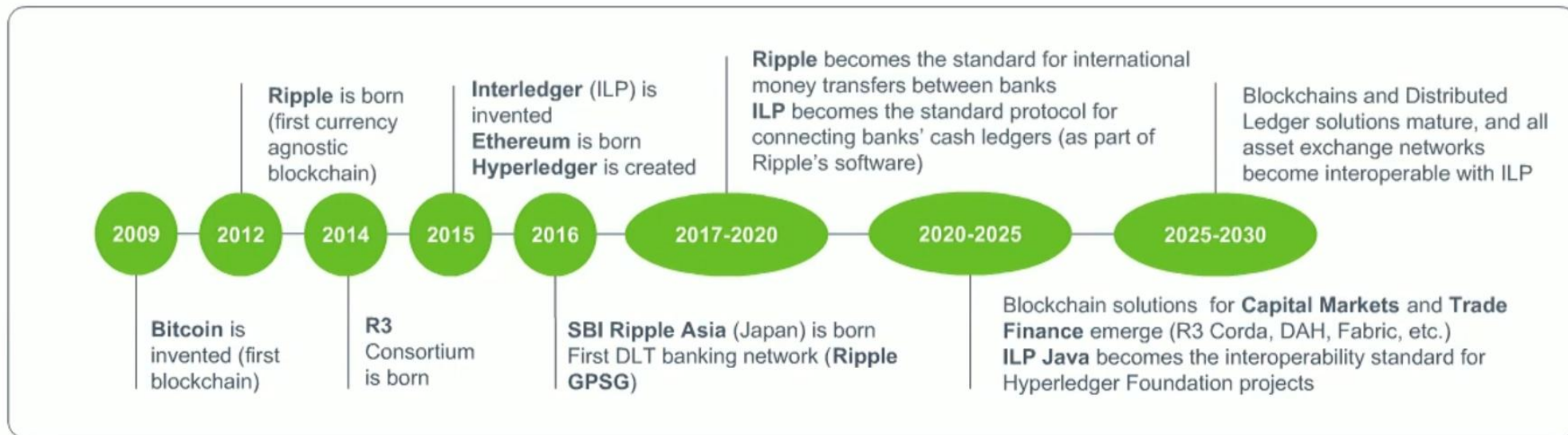
## Timeline



- The emergence of the Internet of Information in the 90s was possible thanks to the creation of the Internet Protocols (TCP/IP, HTTP, SMTP...).
- Internet Protocols enabled open innovation to flourish. Companies like Amazon, Ebay, Rakuten, Google and Alibaba were born once Internet Protocols gained adoption.
- Today information moves seamlessly over the Internet, and due to its open and neutral nature, the Internet has given raise to all types of products and services that were previously unimaginable.

## ...to the Internet of Value

### Timeline



- The Internet of Value will deliver for money and other forms of value what the Internet did for information.
- Analogous to the Internet of Information, the Internet of Value needs open **protocols** and **standards** to enable the many value networks in the world to connect with one another and become interoperable.
- As banks and other financial institutions adopt open standards like Interledger (ILP) to connect between each other and with Blockchain networks, we'll see the Internet of Value emerge.
- Blockchain technology and smart contracts will enable programmable money and frictionless transfers of digital assets, lowering the cost to transact and giving rise to seamless transactions between people, institutions and the IoT.

# Blockchain & DLT

## *Adoption and Maturity*

### Technology Breakthrough

Experimental platforms



#### Blockchain Technology

Testing the use of crypto currencies and smart contracts

 **bitcoin**  ETHEREUM

### Maturity and Adoption

Enterprise-level platforms for specific use cases



#### Cross-Border Payments

Meeting the rising demand for faster, more cost-efficient international payments

 **ripple**



#### Capital Markets

Automating reconciliation to speed up post-trade services

 **c.r.d.a.**  HYPERLEDGER FABRIC  
 **Chain**  **Digital Asset**



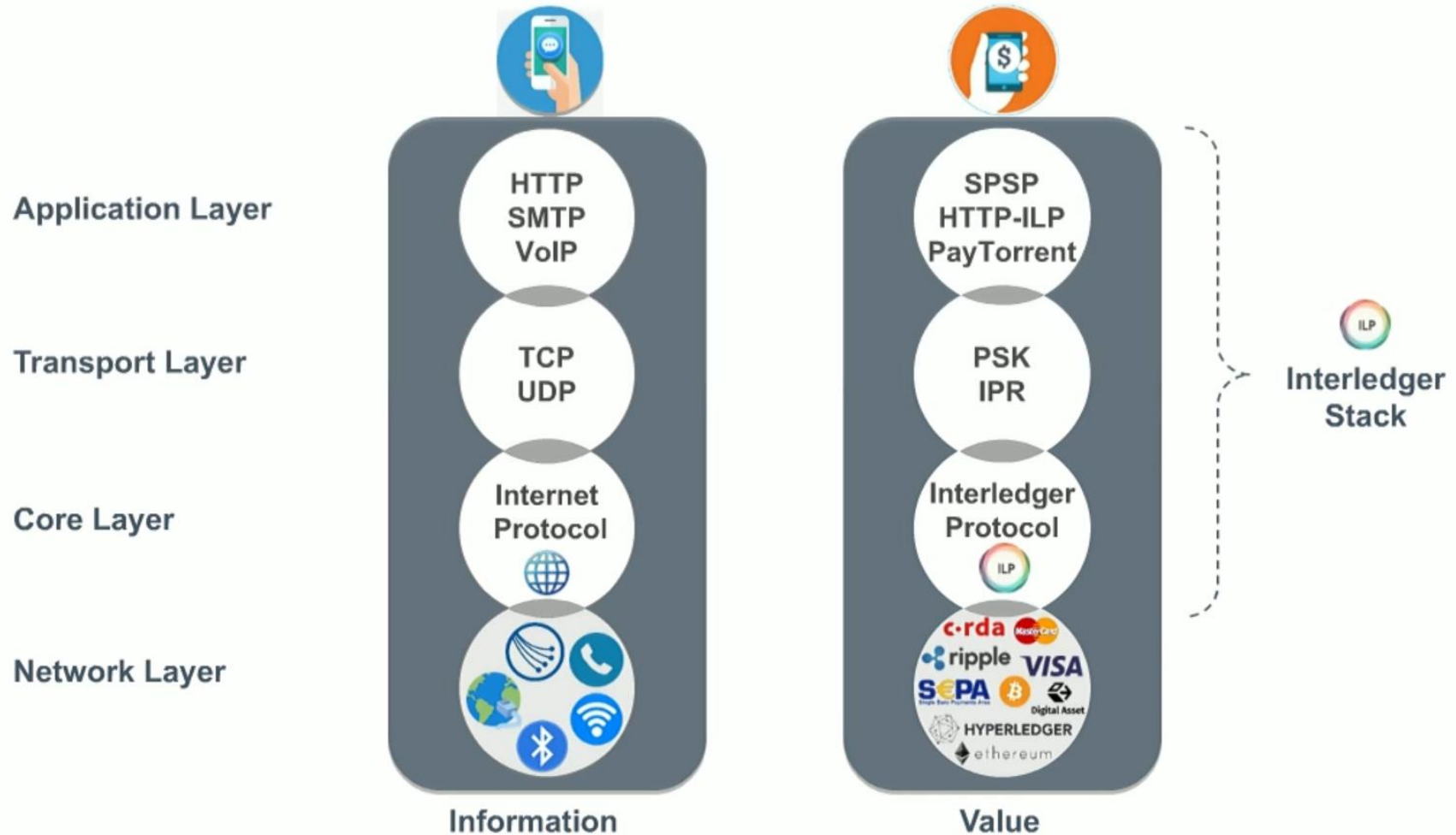
#### Trade Finance

Pushing the digitalisation of trade to reduce risk and fraud

 **c.r.d.a.**  HYPERLEDGER FABRIC  
 **Chain**  **Digital Asset**

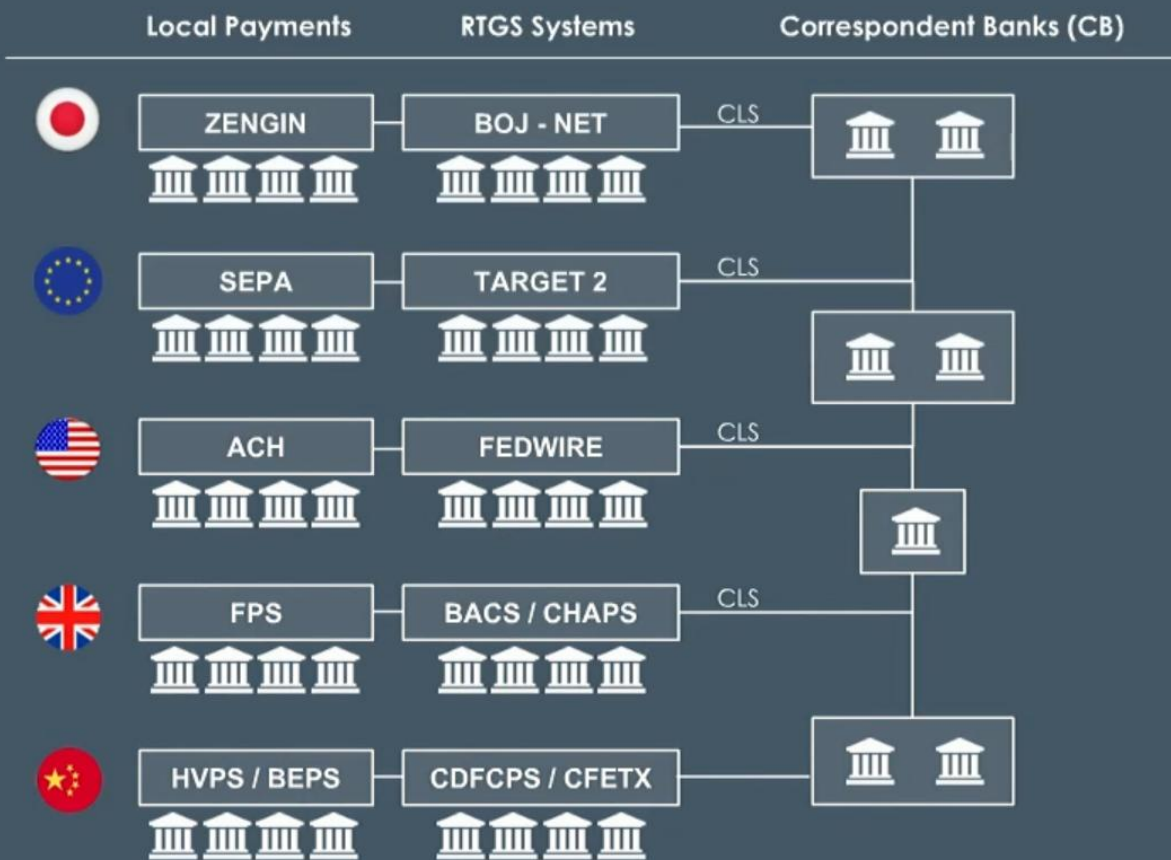
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# Interledger Protocol



# Cross-Border Real-Time Gross Settlement

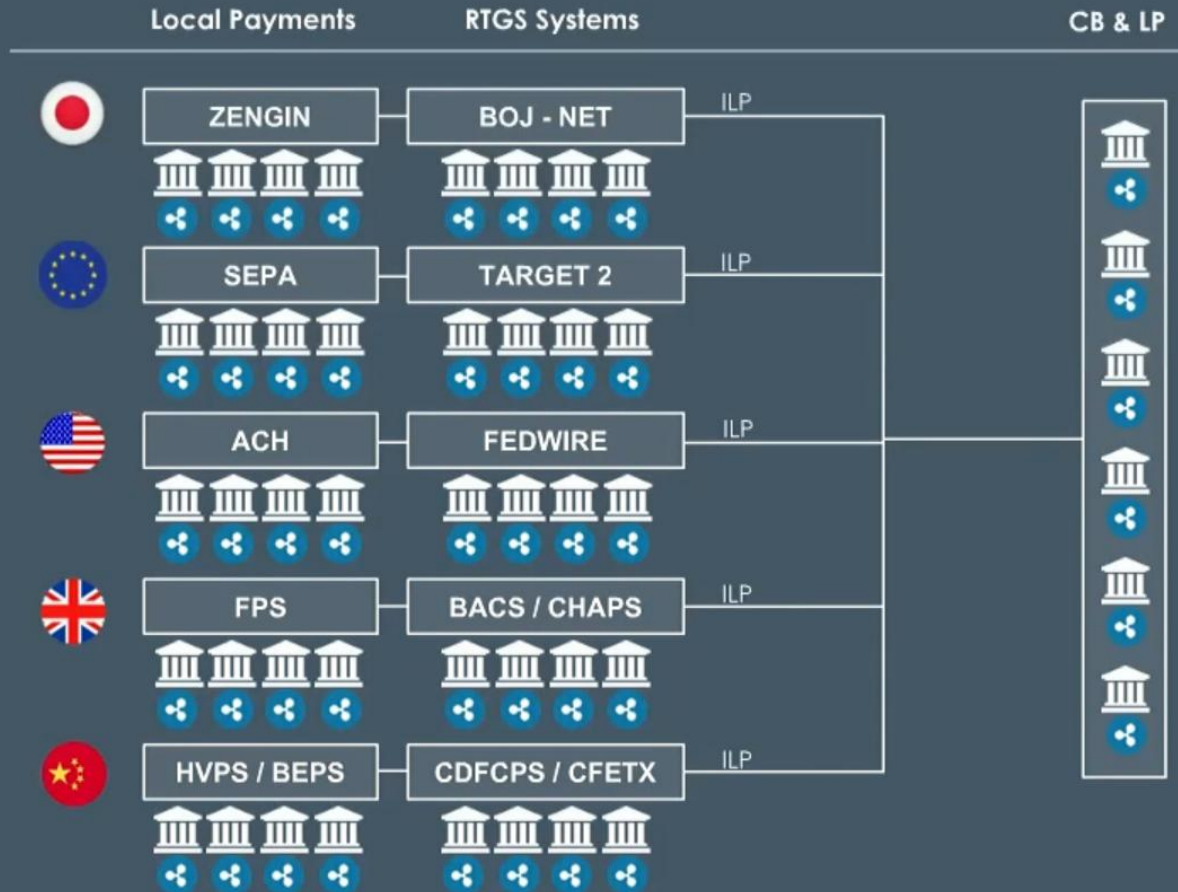
## 1980-2017



- RTGS systems reduce systemic risks by removing the settlement risk from interbank payment flows
- RTGS Systems today operate in daily batch process cycles
- RTGS systems don't provide real-time settlement capability
- RTGS systems' access is restricted to local banks in each country
- Consequently, correspondent banks are needed to access foreign currency corridors and liquidity pools
- Correspondent banks work in oligopolistic markets and use antiquated technology to settle transactions across countries. For these reasons, international transactions are expensive, slow and error prone

# Banks' Adoption of Real-Time Settlement DLT

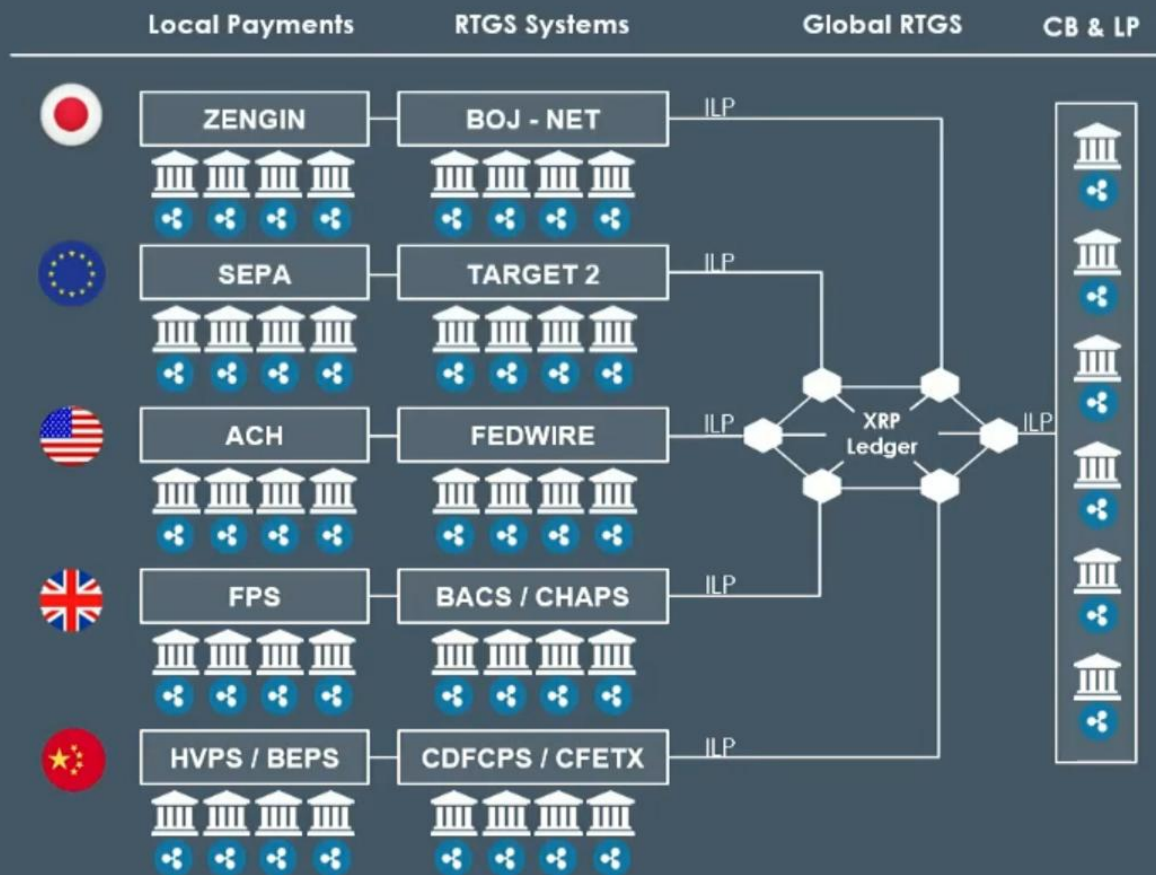
2017



- 50 Japanese Banks are currently integrating with RippleNet through xCurrent to make real-time payments (including Mizuho, Bank of Tokyo Mitsubishi and Resona)
- xCurrent uses the Interledger Protocol (ILP) for making transactions across banks' ledgers
- All over the world many other financial institutions are also joining RippleNet to make interbank local and international payments
- As banks accelerate the RippleNet adoption worldwide, financial institutions will start using the XRP Ledger for liquidity provisioning and cross-currency Global RTGS
- Aware of the fast changing financial landscape, Everis and NTT DATA are working on Interledger Java, an implementation of the Interledger Protocol, to facilitate real-time settlement of transactions across banks, payment systems and Capital Market platforms

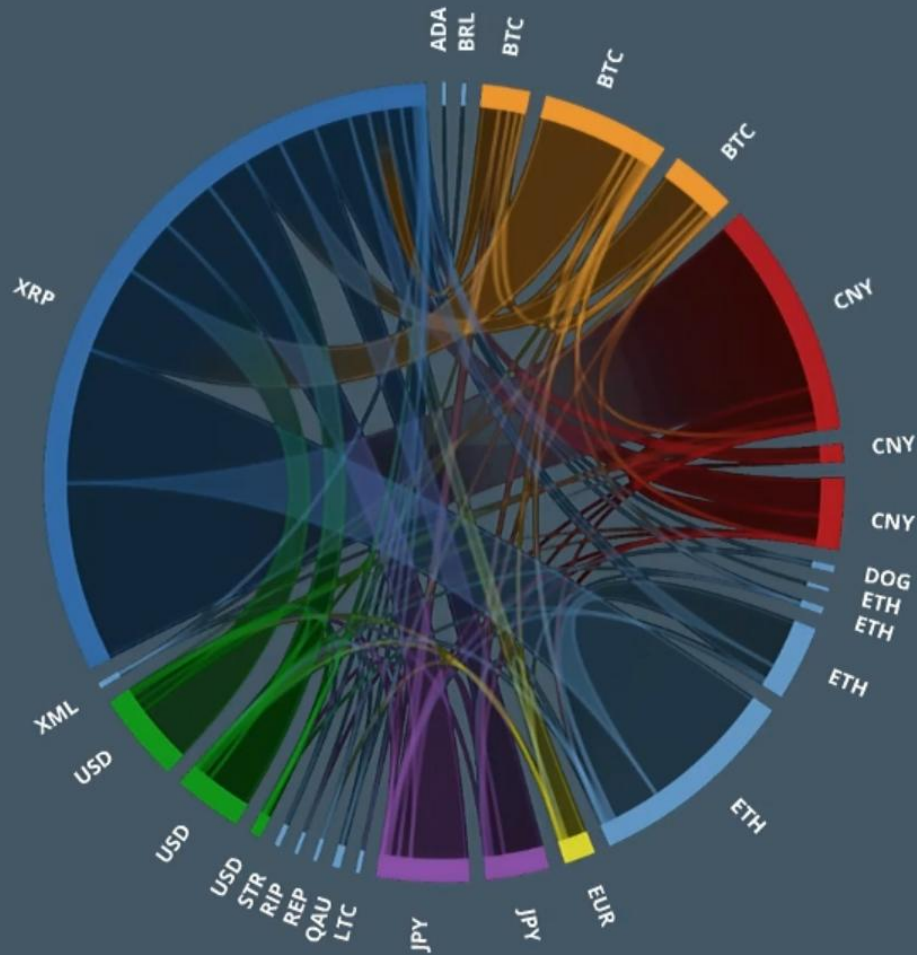
# Cross-Border Real-Time Gross Settlement

## 2020-2025



- The Global RTGS will remove friction, costs and risks from cross-currency transactions
- Distributed ledger technology, and in particular the XRP Ledger, will enable banks to settle cross-currency transactions in real-time (something impossible today)
- The XRP Ledger can be accessed by all banks and liquidity providers, enabling healthy competition between banks and a better service for customers
- Correspondent banks and liquidity providers will be able to reach more currency corridors and new customers, improving their service offering for other banks and their clients
- The Interledger Protocol (ILP) will enable financial institutions and central banks to make their existing infrastructure and processes interoperable with other currencies, asset classes and the XRP Ledger, the global liquidity marketplace and the Global decentralised RTGS system

## XRP Ledger: *the World's Open and Neutral Liquidity Marketplace*



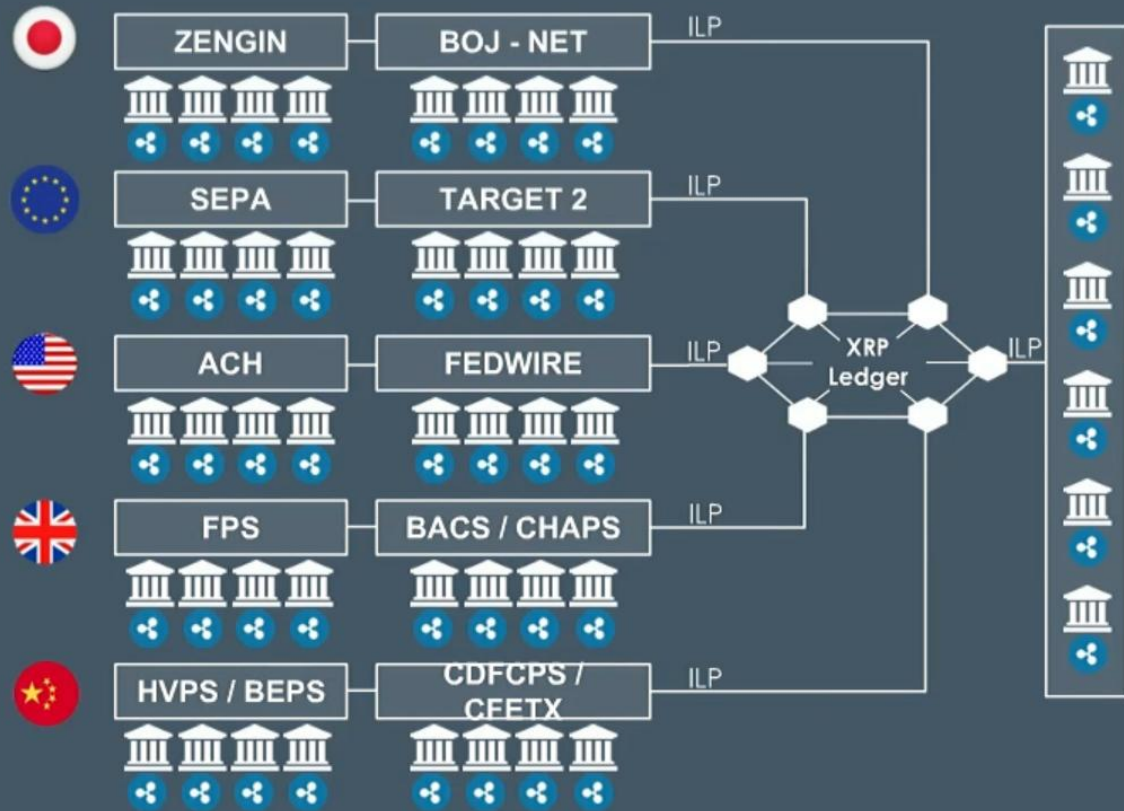
- XRP is the native asset of the XRP Ledger and as such it has advantages that make it unique for bridging cross currency payments
- Over time, as banks adopt Ripple's distributed ledger solution for international payments and payment service providers take advantage of the cross currency RTGS capability and neutral liquidity market place provided by the XRP Ledger, the transaction volumes of the network will grow massively
- XRP is poised to become the best liquidity vehicle for international funds transfers, a market with an annual volume of \$180 trillion in payments



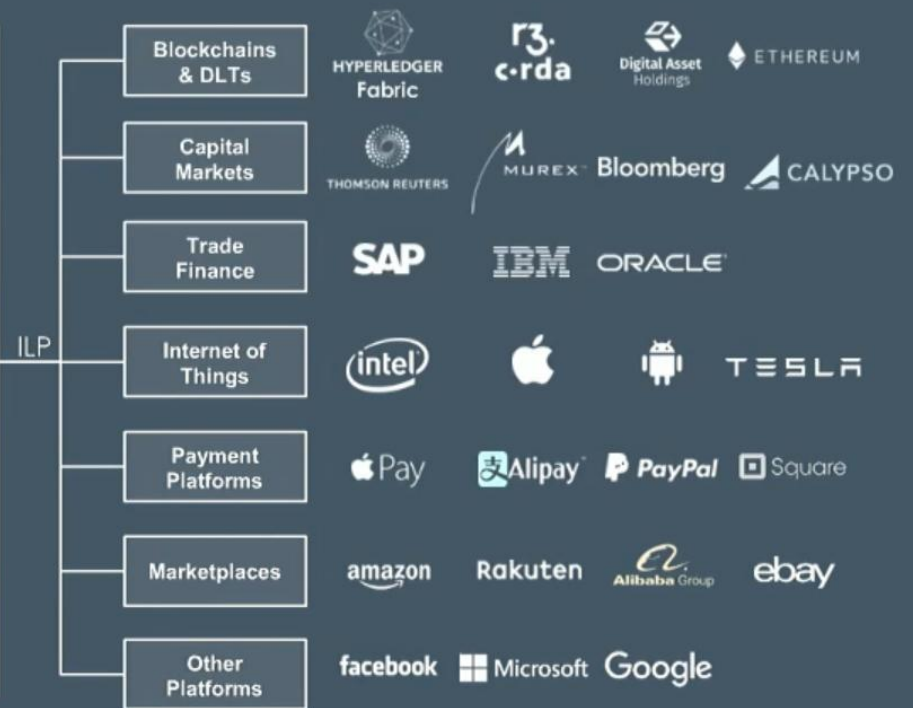
# Interledger: Enabling Interoperability Across Platforms

2020-2025

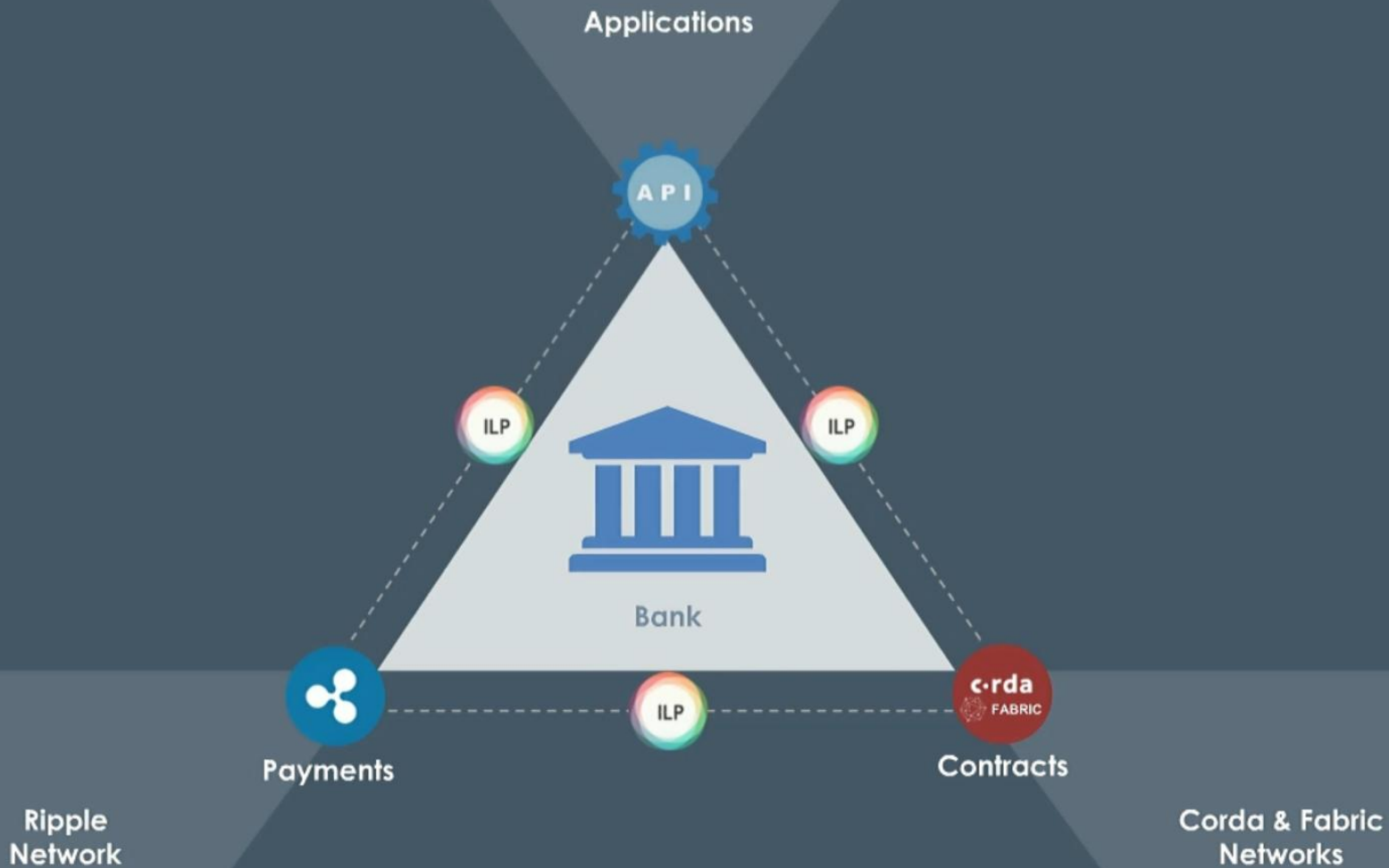
## Money Networks



## Platforms



# Bank Settlement systems with DLT



## Key partnerships

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Ripple Software Solutions enable banks to conduct real-time and bilateral settlement of funds. With Ripple banks can access the XRP Ledger, a blockchain that functions as a global cross-currency RTGS system and liquidity marketplace. Ripple's technology is the most advanced settlement system in the industry.



The Interledger Protocol (ILP) is the open Internet standard for connecting ledgers. It is a neutral and open protocol stack for bridging banks, blockchains, digital wallets and other types of ledgers. Everis, Ripple and NTT DATA are collaboratively working on the Java implementation of the Interledger Protocol.



Corda and Hyperledger Fabric have been engineered to enable shared and authoritative systems of record for financial agreements. They are the most advanced platforms for recording, storing and maintaining financial industry level smart contracts to represent and reconcile financial contracts between parties.

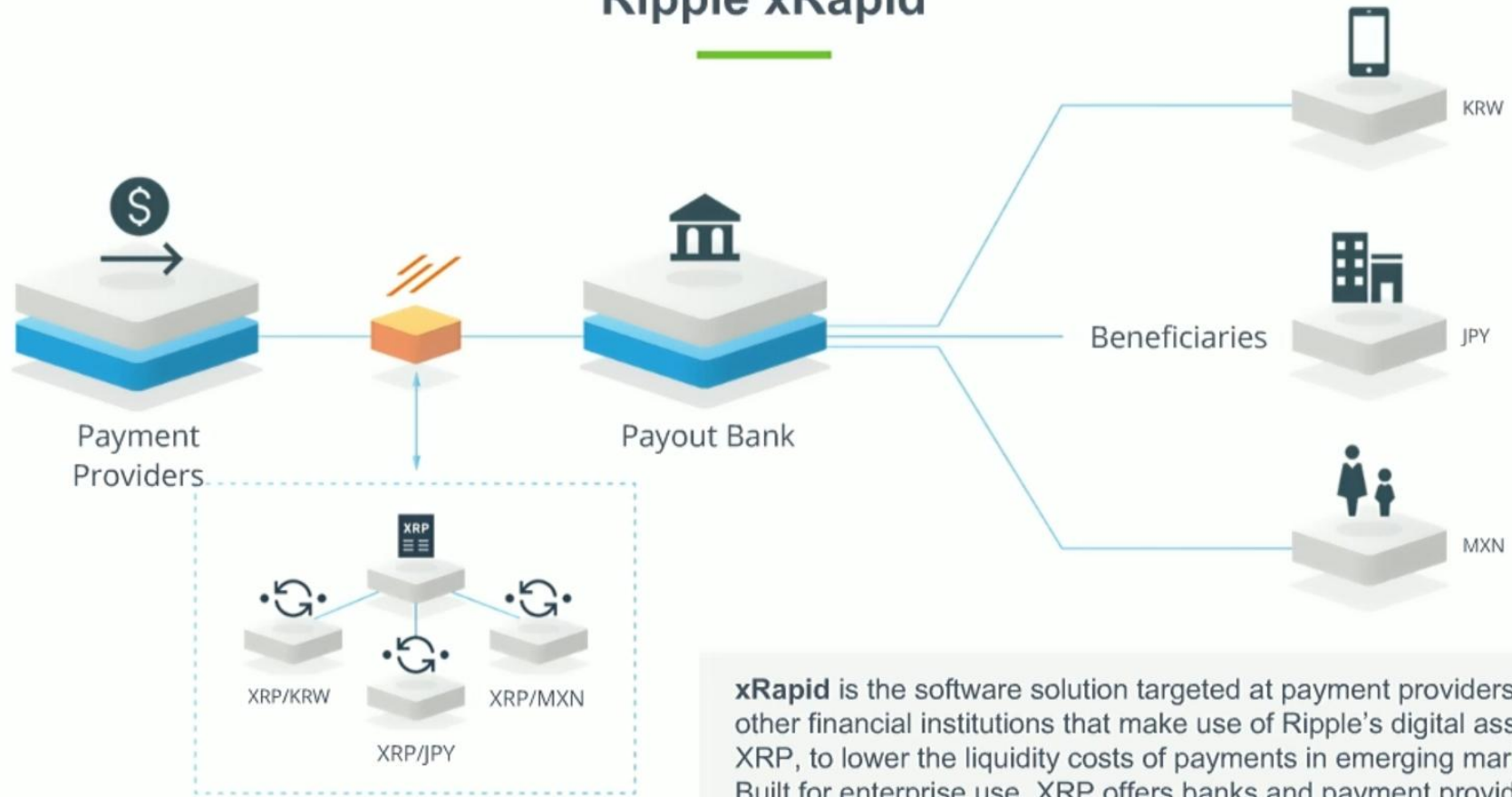
## Ripple xCurrent

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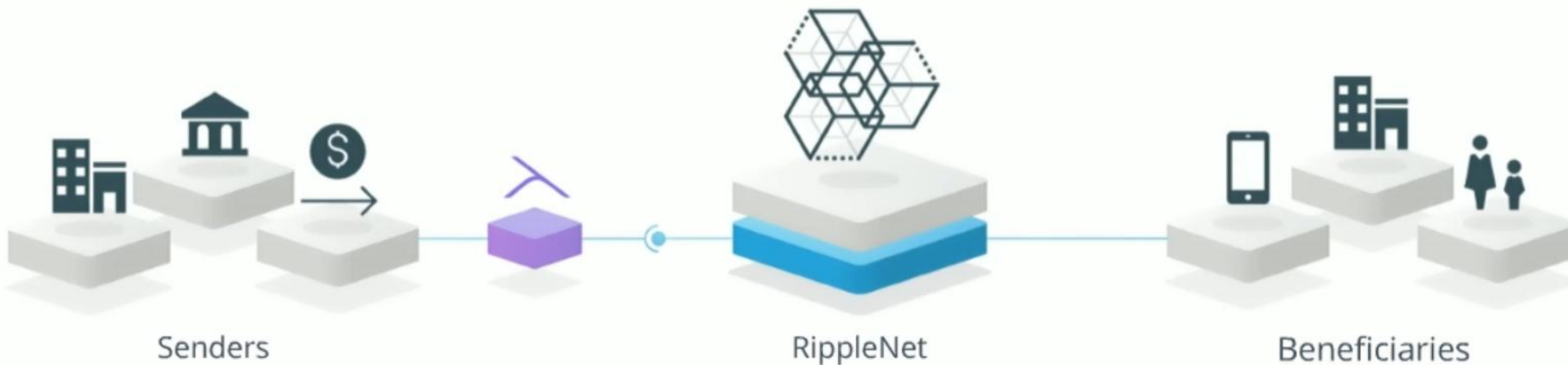
**xCurrent** is the enterprise software solution, that banks and other financial institutions are using to instantly send and receive cross-border payments with end-to-end tracking and bidirectional messaging across RippleNet. The backbone of the solution is the Interledger Protocol, that makes it possible for instant payments to be sent across a variety of different networks.

# Ripple xRapid



**xRapid** is the software solution targeted at payment providers and other financial institutions that make use of Ripple's digital asset, XRP, to lower the liquidity costs of payments in emerging markets. Built for enterprise use, XRP offers banks and payment providers a highly efficient, scalable, reliable liquidity option to service cross-border payments.

## Ripple xVIA



**xVia** is for corporates, payment providers and banks who want to send payments across various networks using a standard interface. xVia's simple API requires no software installation and enables users to seamlessly send payments globally with transparency into the payment status and with rich information, like invoices, attached.

# Benefits of adopting Ripple Settlement Solutions

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## Access

Ripple enables access to a global network of financial institutions and liquidity providers. Banks no longer need direct reach (nostro accounts) across all corridors to efficiently process payments.



## Speed

Ripple's solution provides real-time settlement between banks.



## Certainty

Banks exchange payment and fee information on Ripple before payments execute, minimizing the risk of failure. Funds settle between Ripple-connected banks in seconds with end-to-end visibility into every transaction.



## Cost

Ripple reduces the total cost of settlement for every transaction, freeing up funds to allocate elsewhere.