Agenda

01 Company Overview
02 Ripple Technology
03 Solution Overview
04 Q&A
A connected world is creating new demands the current infrastructure can not support.
The New Corporate

Global by nature
On-demand fulfillment
Distributed suppliers and customers
Digitally native

Uber
Consumers’ Transaction Needs Are Changing Too

Internet of Things
50 Billion Connected Devices by 2020

Source: DHL and Cisco Internet of Things Trend Report, 2015; Cisco Internet of Things White Paper 2011
Demands on Financial Infrastructure

- High volume, low value, high velocity
- On demand and real time
- Complete visibility
- Value-added controls
Why Payments?

Payments are the foundation to connecting a financial ecosystem.
Ripple’s Mission

Enable next generation cross-border payments for banks and their customers.
Today: International Payments Require a Relay Process

Key Problems

**Limited Access:** Intermediaries, single liquidity provider

**Lack of Certainty:** Unidirectional messaging

**Duration (2-4 Days):** Limited by settlement windows

**High Cost:** Processing, operations, FX, liquidity cost
Direct Global Reach Is Costly

Costs associated with nostro accounts: liquidity, regulations, compliance, risk
This Is A Structural Inefficiency

Settlement requires a trusted counterparty

Creating network silos

Sending Bank

Record Keeper

Receiving Bank

Ledger

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...Which Distributed Financial Technology Addresses

Decentralized architecture eliminates need for intermediaries

Creating interoperable networks
Ripple Modernizes the Payments Infrastructure
High-Level Architecture

Sending Bank

Ripple Connect

Ripple Connect

Beneficiary Bank

Messaging

Settlement
## Key Enabling Capabilities with Ripple

<table>
<thead>
<tr>
<th>Capabilities</th>
<th>Enabling Features</th>
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</thead>
<tbody>
<tr>
<td><strong>1 Bi-directional messaging</strong></td>
<td>• Pre-transaction communication</td>
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<tr>
<td></td>
<td>• Flexible structured message data</td>
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<tr>
<td></td>
<td>• Context driven messaging</td>
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<td></td>
<td>• Real-time liquidity monitoring</td>
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<tr>
<td><strong>2 Real-time settlement</strong></td>
<td>• Settlement integrated with messaging and FX</td>
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<tr>
<td></td>
<td>• Atomic processing of complex transactions</td>
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<tr>
<td></td>
<td>• 24/7 real-time inter-bank settlement</td>
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<tr>
<td><strong>3 Liquidity Management</strong></td>
<td>• Option for competitive third-party FX marketplace</td>
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<td></td>
<td>• Flexibility to use multiple liquidity models</td>
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<td></td>
<td>• Pathfinding capability to optimize transaction costs</td>
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</tbody>
</table>
More Efficient Bank-to-Bank Settlement

Bidirectional Messaging Can Increase Operational Efficiency and Lower Costs

**Key Benefits**

- **Higher STP**: Data validation prior to transaction
- **Transparency**: Capability to pre-disclose end-to-end delivery fees (Basel III and Dodd-Frank)
- **Intraday liquidity monitoring and automated reconciliation**: Real-time payment confirmation
Real-time, Atomic Multi-Hop Transactions

Ability to Link Transactions Together Without Impacting Service Levels

Key Benefits

**Reduced Delays**: Payment processing across all intermediaries happens in parallel

**No Settlement Risk**: Either the entire payment goes through or it fails (atomic payment)

**Higher Balance Sheet Efficiency**: Ability to consolidate nostro relationships while maintaining service levels
Flexible Liquidity Provisioning
Multiple Models for Liquidity Provisioning for Banks

Key Benefits

**Balance Sheet Efficiency**: Ability to leverage third party liquidity for non-core corridors

**Agility**: Expansion into new corridors without incurring capital risk or cost
Pathfinding for Cost Optimization

Ripple’s Pathfinding Engine Can Dynamically Find the Lowest Cost Liquidity Path for a Payment

Key Benefits

Lower cost of payments: Dynamic pathfinding for lowest liquidity cost for every transaction

Automated relationship mapping: No need to map correspondent relationships to route payments
Ripple: Upgrading Payments Infrastructure
Platform for Innovation for Institutional, Corporate and Retail Banking

Cross-Currency Settlement

- Retail
- Corporate
- Wholesale

Correspondent Banking Interface

Clearing, Settlement and Reconciliation Infrastructure (Currently SWIFT, CLS, etc.)

Deposit Base (Nostro Account Network / Third Party Liquidity Provider Network)

Opportunity for Innovation

Opportunity for Optimization
Financial Technology Company
With Expertise in Global Financial Settlement

Team
- 150 Employees
  - 65% Engineering Talent
- 4 Offices Worldwide
  - San Francisco
  - London
  - New York
  - Sydney
  - HQ
    - Europe
    - North America
    - APAC

Experience

Financial Services
- J.P. Morgan
- Citigroup
- HSBC
- DTCC
- Visa
- PayPal
- Fiserv
- ACI
- Monitise

Technology
- Google
- Apple
- Amazon
- Bitcoin
- NSA
- MongoDB
- Oracle
- NASA
- Qualcomm

Regulations
- Federal Reserve - NY & Board of Governors
- SEC
- Promontory
Market traction
First production implementations of blockchain at a bank

- 90+ Active deal discussions
- 30+ Pilots in progress
- 10 Production implementation
Sample of our Customers and Partners

Banking Customers
- Santander
- Standard Chartered
- CIBC
- UBS
- Westpac
- UniCredit
- ATB Financial
- ReiseBank
- Mizuho
- NBAD
- CBW BANK

Consulting Partnerships
- accenture
- CGI
- Deloitte

Technology Partnerships
- CGI
- earthport
- D+H
- Expertus
- Volante
Ripple’s Vision: Internet of Value

*Internet of Value*: the world moves value the way it moves information today.
Q&A
Appendix
## 24/7 Real-time Funds Settlement

End-to-end transaction visibility for reconciliation-ready data

<table>
<thead>
<tr>
<th></th>
<th>Messaging</th>
<th>Settlement</th>
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<tbody>
<tr>
<td>1</td>
<td>Pre-transaction communication (customer info, trx fees, rates, delivery times)</td>
<td></td>
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<tr>
<td>2</td>
<td>Payment instructions</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Transaction reference (payment ID)</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Funds settlement using payment ID</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Payment tracking</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Payment delivery confirmation</td>
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- Tightly integrated messaging process with the settlement process
- Pre-transaction communication and delivery confirmation reduce error rates
- Complete visibility into the transaction process for exception handling
Banks and Market Makers Integrate Ripple APIs

All parties are known and authorized; Ripple doesn’t touch the customer
Market Makers Manage Liquidity

Market makers provision funds and submit orders.
Banks, Market Makers Settle Payments via Ripple

Path-finding algorithm matches payment with liquidity in the orderbook
Simultaneous Book Transfers at Each Bank

Payment versus payment capability, eliminating settlement risk