Distributed Financial Technology in Payments

Jessie Cheng, Deputy General Counsel, Ripple

Weil, Gotshal & Manges Roundtable
Increasing Payment Efficiency
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What is distributed ledger technology?
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- **Blockchain** — Technology that collects transactions into blocks and chains them in chronological order, with copies distributed across a number of different servers.

- **Digital signatures** — A cryptographic scheme used by parties to authorize transactions and by the protocol to authenticate transactions.

- **Consensus mechanism** — A process by which multiple nodes agree to update the blockchain with new transactions.
Distributed ledgers aren’t limited to virtual currencies

Different ledgers can record different things:

● Virtual currency balances (e.g., bitcoin, XRP, ether)

● Fiat currency balances (e.g., U.S. dollars, euro, yen)
Suppose that Alpha Corp. based in the United Kingdom wishes to make a payment to Beta Corp. based in Japan.
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Hypo #1: Common correspondent bank

**Sigma Bank**
- Debits Alpha Bank’s account (-£)
- Credits Beta Bank’s account (+¥)
Suppose that Alpha Corp. based in the United Kingdom wishes to make a payment to Beta Corp. based in Japan.

Hypo #1: Common correspondent bank

Alpha Corp. → Alpha Bank → Sigma Bank → Tao Bank → Upsilon Bank → Beta Bank → Beta Corp.
Hypo #2: Distributed Financial Technology

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Hypo #2a: Distributed Ledgers

Suppose that Alpha Corp. based in the United Kingdom wishes to make a payment to Beta Corp. based in Japan.
Do you actually need distributed ledgers?
Hypo #2b: Interledger Protocol (ILP)

Suppose that Alpha Corp. based in the United Kingdom wishes to make a payment to Beta Corp. based in Japan.
Hypo #2b: Interledger Protocol (ILP)

Suppose that Alpha Corp. based in the United Kingdom wishes to make a payment to Beta Corp. based in Japan.
Suppose that Alpha Corp., based in the United Kingdom, wishes to make a payment to Beta Corp., based in Japan.
Hypo #2b: Interledger Protocol (ILP)

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Hypo #2b: Interledger Protocol (ILP)

Suppose that Alpha Corp. based in the United Kingdom wishes to make a payment to Beta Corp. based in Japan.

Alpha Bank
Connector’s balance ↑ (+£)

Beta Bank
Connector’s balance ↓ (-¥)
## What are some key differences?

<table>
<thead>
<tr>
<th>Common correspondent</th>
<th>Distributed Financial Tech.</th>
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<tbody>
<tr>
<td>Centralization of trust in one counterparty, Sigma Bank</td>
<td>Distribution of trust through a protocol, the process itself</td>
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<td>Sigma Bank records transfers of money between banks</td>
<td>Settlement occurs on the banks’ own books, coordinated by technology</td>
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<td>Banks reconcile their own records with Sigma Bank’s books</td>
<td>Changes are updated in real time</td>
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One last variation...
Hypo #3: XRP

Suppose that Alpha Corp. based in Brazil wishes to make a payment to Beta Corp. based in Thailand.
Hypo #3: XRP

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Questions?
jcheng@ripple.com