Postcoin
The future of postal payments?

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## Blockchain – A new kind of institution

<table>
<thead>
<tr>
<th>Institutions keep and maintain centralized databases</th>
<th>Blockchains are decentralized databases</th>
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<tbody>
<tr>
<td>Consensus by authority</td>
<td>Distributed consensus secured by cryptography</td>
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<tr>
<td>Intermediation</td>
<td>Potentially open to users without intermediaries</td>
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<tr>
<td>Need for trust</td>
<td>No need for trust</td>
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<tr>
<td>Single points of failure (fraud, censorship)</td>
<td>No single point of failure</td>
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<tr>
<td>Delayed settlement</td>
<td>Prompt settlement</td>
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Blockchain – Application levels

Level 3: Smart Contracts
Decentralized execution of applications and contracts

Level 2: Smart Property / Tokenization
Documentation and transfer of tokens that represent other assets (electronic vouchers)

Level 1: Cryptocurrencies (e.g. Bitcoin)
Documentation and transfer of tokens
Advantages and challenges of cryptocurrencies

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Challenges</th>
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<tbody>
<tr>
<td>No intermediaries</td>
<td>Volatile exchange rate</td>
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<tr>
<td>Permissionless</td>
<td>Limited acceptance</td>
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<tr>
<td>Possibly limited supply</td>
<td>Compliance</td>
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<tr>
<td>Fast settlement</td>
<td>Irreversibility (for customers)</td>
</tr>
<tr>
<td>Irreversibility (for merchants)</td>
<td></td>
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</tbody>
</table>

Opportunities for postal services

Advantages for electronic commerce by financial inclusion, simplified cross-border transactions and shift of payment risks

Services in existing cryptocurrencies
- Cryptocurrency accounts and conversion to local currency
- Unified platform for payment and shipping information
- Use the blockchain as a decentralized database for timestamping, track and trace, registered mail

Issuance of a postal currency «Postcoin»
- Backed by other assets
- Possibly restricted access to the ledger
Postcoin

Existing Blockchain (e.g. Bitcoin, Ethereum)
- Peer to peer transactions
- Distributed ledger
- Consensus through proof of work
- Resilience through large size of the network

Specific Postcoin-Blockchain
- Consortium of postal operators
- Consensus through trusted institutions

Layer 1: Protocol
(two implementation options)

Layer 2: Currency

Postcoin
- Issued by network of postal operators
- Variable supply, backed by «something else» (SDR, Gold,...) → Fixed exchange rate
- Option for reversible transactions
- Conversion to local currency through posts
Postcoin transactions
Peer to peer Postcoin transaction

Transaction in Postcoin
No postal operator involved
«Fixed» value of the transaction
Currency exchange

Exchange Postcoin for local currency at «fixed» rate
Keep Postcoin on account or withdraw to own wallet
③ Post to post transaction

Transaction in Postcoin between postal operators on customers’ behalf
Transaction on the underlying blockchain
Transaction off the blockchain, directly between posts
Conclusion

• Blockchains do not need institutions. However, there is a role for trusted parties.

• Posts could fill this role as an interface between virtual currencies and the physical world by leveraging their local presence and their global network:
  → exchange cryptocurrencies for local currency over their counters or online
  → safely storing cryptocurrencies

• Posts could also issue a Postcoin by leveraging their reputation and using their existing regulatory status
  → enable international payments at low price by connecting with each other
  → enhance worldwide financial inclusion
Worldwide access to financial institutions

Adults with an account at a formal financial institution (%)
- 0–15
- 16–30
- 31–50
- 51–80
- 81+
- No data
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