Digital Fiat Currency for Everyone and Now

David Wen
Chief Scientist @ eCurrency
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History Is Repeating Itself

Gold → Bifurcate → Private Bank Notes → Unify → Central Bank Currency → Bifurcate → Unregulated Private E-money → Unify → Digital Fiat Currency

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### Digital Fiat Currency Is A Legal Doctrine

<table>
<thead>
<tr>
<th>Physical Representations of Money</th>
<th>Fiat Currency (Paper and Coins)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Created as a medium of exchange within a circle of acceptance</td>
<td>• Central Bank issued</td>
</tr>
<tr>
<td>• Privately issued</td>
<td>• Legal tender</td>
</tr>
<tr>
<td>• Non-reliable source to store value</td>
<td>• Sovereign denomination</td>
</tr>
<tr>
<td>• Accepted within a circle of users</td>
<td>• Unit of account, medium of exchange, store of value</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Electronic Representations of Money (E-Money)</th>
<th>Digital Fiat Currency</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Issued (electronically) in exchange for currency</td>
<td>• Central Bank issued</td>
</tr>
<tr>
<td>• Privately-sanctioned</td>
<td>• Legal tender (in electronic form)</td>
</tr>
<tr>
<td>• Non-reliable electronic store of value</td>
<td>• Sovereign denomination</td>
</tr>
<tr>
<td>• Operates in closed systems</td>
<td>• Unit of account, medium of exchange, store of value</td>
</tr>
</tbody>
</table>
The Case for Digital Fiat Currency
What Is Needed: A Zero To One Solution

FinTech investment
Payment volume
World GDP growth
Requirement for a Digital Fiat Currency

Digital Fiat Currency
- Issued by Central Bank
- Issued by Private Entity

Centralized

Distributed

Distributed DFC
- Backward and Forward compatible
- Secure Interoperable Instrument
- Usable by all

Other Digital Currency

DFC
Containerization is an zero to one innovation without creating a new means of transportation.

- Governance Technology
- Standardization
- Enhance Security
- Interoperability
- Reduce theft
- Efficiency
- Shorten time
Benefit of Containerization in 5 years
• 17 times productivity increase
• 6 times of cost reduction
• Better security and shorter transit
Containerization: transport agnostic interoperable instrument

eCurrency: system agnostic secure interoperable instrument

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We took the idea to Central Banks around the world
The Case for Digital Fiat Currency for Financial Inclusion

Banking Regulation

Banked
"Account"

Non Banked
"Currency"

Legal Tender

Issued by CB

MØ

20%

80%

Currency Regulation

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Problem Use Case: Mobile Money Challenge

Much effort in FinTech were devoted to reaching customers with new eMoney systems (wallet, pre-paid, mobile money)

Initial success created more fragmentation of eMoney eco-system, and lack of interoperability forced consumer to perform interoperability by themselves: cashing out

Banks and the Central Bank didn’t benefit much from proliferation of eMoney but has to bear the cost of handling more cash, and the regulatory risk

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Solution: eCurrency (secure interoperable instrument)

Exchange money unit in eMoney system with eCurrency secure instrument and simple API for securitization

eCurrency allows the designated issuer (can be the Central Bank or designated bank(s) that is managing the reserve for the eMoney providers), to manage the supply, provide liquidity and observe eCurrency flow

Benefit for banks: Ability to manage liquidity, perform instant reconciliation, compliance, less cash use due to interoperability

Benefit for eMoney providers: less cash outlets, compliance better user experience and security against insider attack

FinTech companies: any new innovation FinTech eMoney solution can be added to the eco-system

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eCurrency: Governance Technology

Issued by Central Bank and can be distributed by all Financial Institutions abide by existing rules and regulations

Legal

Governance Technology

FinTech

Past ← Wire – ACH – Debit Card – Mobile – BC/Blockchain → Future

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### Comparison Between Roles and Responsibilities

<table>
<thead>
<tr>
<th>Central Bank</th>
<th>Dept of Transport</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Regulation, legal tender status</td>
<td>- Regulation</td>
</tr>
<tr>
<td>X9/ISO</td>
<td>- Crash test etc</td>
</tr>
<tr>
<td>- Standard on protocol, API and security</td>
<td>ISO</td>
</tr>
<tr>
<td>- Standard on size, lock, strength etc</td>
<td>- Standard on size, lock, strength etc</td>
</tr>
<tr>
<td>Commercial Bank</td>
<td>Container port</td>
</tr>
<tr>
<td>- Distribution</td>
<td>- Transshipment</td>
</tr>
<tr>
<td>- Liquidity/risk</td>
<td>- Inventory management</td>
</tr>
<tr>
<td>Payment Network</td>
<td>Freight company</td>
</tr>
<tr>
<td>- Lookup, routing</td>
<td>- Scheduling</td>
</tr>
<tr>
<td>- Messaging</td>
<td>- Routing</td>
</tr>
<tr>
<td>Mobile/Card/Web payment</td>
<td>Truck/Train/Ship route</td>
</tr>
<tr>
<td>- Customer acquisition</td>
<td>- Bill of lading</td>
</tr>
<tr>
<td>- KYC/AML</td>
<td>- Security of goods</td>
</tr>
<tr>
<td>Consumer</td>
<td>Consumer/Business</td>
</tr>
<tr>
<td>- Conduct transaction</td>
<td>- Conduct transaction</td>
</tr>
</tbody>
</table>
eCurrency Distribution Framework

Central Bank

Governance & Monitoring Dashboard

Secure Instrument Root Plate

Issuance

Commercial Bank

Digital Fiat Currency Distributors

eCurrency Plates

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Product deployed in the field in multiple countries

| **Mature** | Refined through careful design, continuous testing and successful deployments  
|            | 3 years in the making  
|            | Version 3.3 operating flawlessly since deployment |
| **Secure** | Security built-in at the core of the system  
|            | Clearly defined boundary between currency and IT  
|            | Clearly defined boundary between online and offline systems  
|            | Best in class, audited processes for key creation and distribution |
| **Scalable** | Tested to support multiple large operators at hundreds of transactions per second each  
|              | Scalable further on multiple axes |
| **Reliable** | Highly redundant with hot failover  
|              | Extensively soak and load tested  
|              | De-centralized with high degree of autonomy per operator  
|              | Supports Disaster Recovery per customer policies |
| **Supportable** | Engineered with operations and support in mind  
|                 | Instrumented and IT monitored 24x7 |
Govern, Supervise and Monitor

Issuer

Governance, Supervision and Control

Real-time Data

Securely Monitored Transactions

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Compliance and regulatory technology at work
eCurrency Property and Value Proposition

- Central issuance authority
- Platform agnostic / Integrate with any systems
- Interoperable value
- Highly secured / anti-counterfeit
- Transparent / real-time visibility
- Scalable and reliable platform
- Complete turnkey capability
Clarification of Some Important Terms

- Digital Currency
- Shopping Site
- Product "What"

- Distributed Ledger
- Cloud Service
- Architecture "How"

- Blockchain
- Mysql
- Oracle
- Technology Components "How"
eCurrency: A Inclusive Governance Technology

- instant settlement
- wholesale and retail distribution
- interoperability

Centralized Ledger

Distributed Ledger (DL)

eCurrency enables:
- Interledger settlement
- interoperability with non-DL
Digital Fiat Currency for all: Example for Permissioned Blockchain Interface

Fresh transaction submitted to consensus engine

| Hash of this transaction | hash of previous transaction | Payer init cryptoplx | signature, amount, payee address |

Submitted via API to eCurrency plate

Returned to consensus engine

| Hash of this transaction | hash of previous transaction | Payer final cryptoplx | signature, amount, payee address, payee cryptoplx |

Consensus engine to include into next block
Thorough Open API for Banks and eMoney provider, Open GP API for Apps, we are building an open Digital Fiat Currency ecosystem for everyone and now.
https://www.ecurrency.net

david.w@ecurrency.net

https://amazon.com/Box-Shipping-Container-Smaller-Economy/dp/0691136408

https://x9.org

https://www.ecurrency.net/whitepaper.ps