

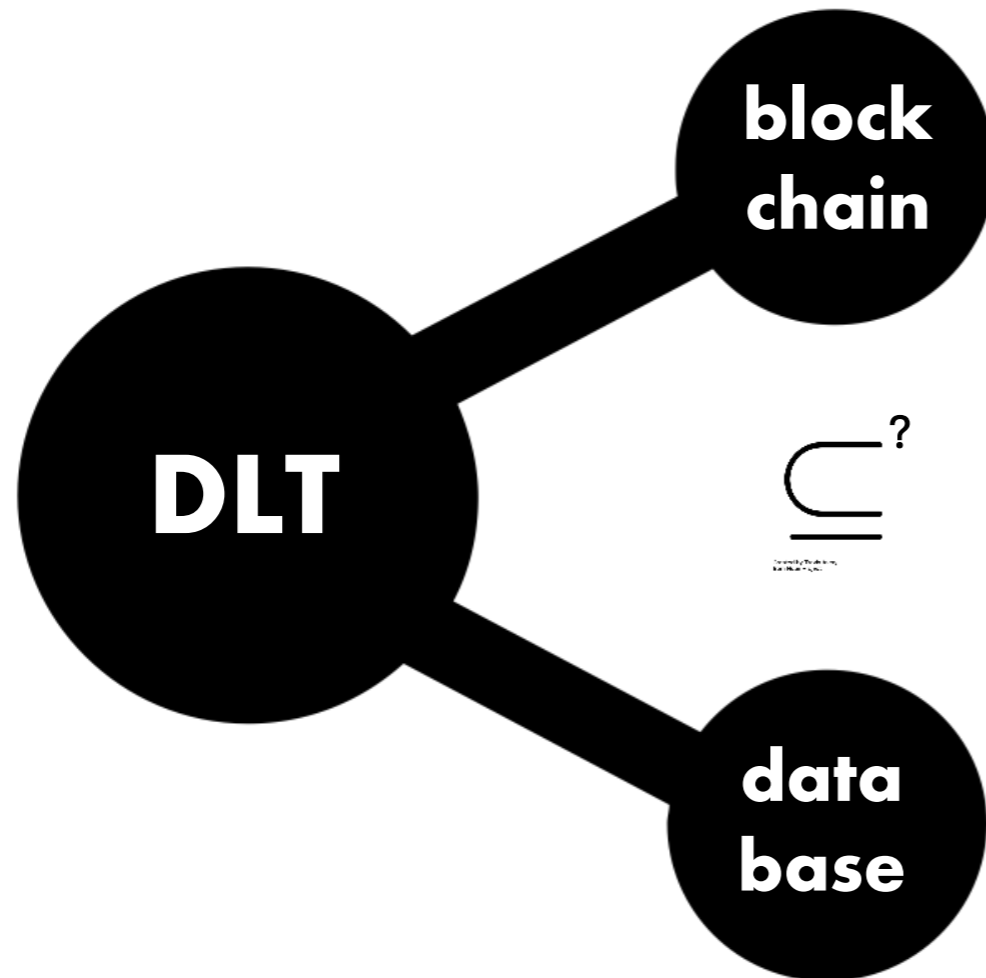


REMITTANCES – APPLICATIONS OF BLOCKCHAIN / DLT AND KEY CONSIDERATIONS

IMF-JFSA-BOJ CONFERENCE ON FINTECH
SESSION 1 : KEY FINTECH APPLICATIONS

16 APRIL 2018
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For the purposes of this presentation



Created by Vectors Market
from Noun Project

PUBLIC BLOCKCHAIN

Sequential data structure. Time ordered.
Native Token. No Double Spend.
Mining. Proof. Consensus.
Competition Between Nodes.
Immutable. Non-Repudiable.
Peer-to-Peer.

DLT

*"...computers in different locations to propose and validate transactions and update records in a synchronised way across a network..." **

*https://www.bis.org/publ/qtrpdf/r_qt1709y.htm

There can be many different potential blockchain/DLT applications. **Value transfer applications** can be differentiated by “UTXO” or “Balance” features.



Examples

VALUE TRANSFER APPLICATIONS

CRYPTOCURRENCIES
(OR DIGITAL CASH)



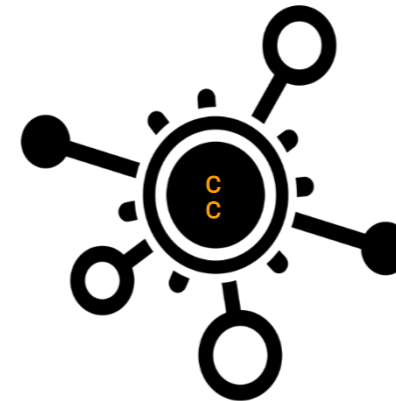
Infrastructure with
some build-in
money supply functions.

**PAYMENTS &
REMITTANCES**



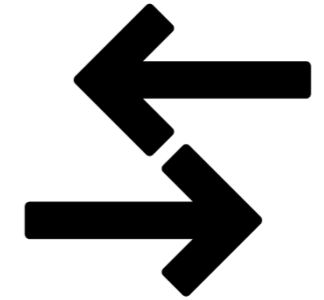
Transaction
Banking.

**CAPITAL RAISING &
TRADING**



Capital
Market.

**PAYMENT
METHOD OR
SECURITIES?**



Created by H Alberto Gongora
from Noun Project



Artwork credit: Noun Project; “Bitcoin” by IYIKON, “Exchange” by Chanut is Industries and “ICO” by Sahua d. Modified slightly to include “VC”



VALUE-CENTRIC.

**FINANCE IN NATURE,
NETWORK & CRYPTOGRAPHY IN STRUCTURE.**

**A BORDERLESS SHARED “COMPUTER”,
THAT BRINGS THE “END-TO-END” CLOSER.**

COMPLEX.

Blockchain technology used as payment methods are developing rapidly. Their applications are expanding and each Type has different potentials & challenges.



Examples

BEFORE CRYPTO

- DigiCash, 1989.

AFTER CRYPTO. 1st TYPE

- Bitcoin (BTC).
- Ether Classic (ETC).

2nd TYPE

- Bitcoin Cash (BCH). Lightning.
- Ether (ETH). Raiden.
- Alt Coins (forks).
- ERC20 Coins.

As a
"crypto securities"?

3rd TYPE

- Asset-backed coins.

4th TYPE

- Monero (XMR).
- Zcash (ZEC).

5th TYPE

- Cryptokitties.

6th TYPE

- Private coins

(7th TYPE

- IOTA)

Stable value. As a crypto
"money market fund"?

As a digital representation
of fiat currency?

As a
tradable store of value?

Payment application's success criteria depends on market needs and alternatives.

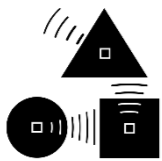


PAYMENTS & REMITTANCES



Created by Wilson Joseph from Noun Project

POTENTIAL NEW SEGMENT CREATED



Created by Michael Wilmshurst from Noun Project

B2B
HIGH VALUE CROSS BORDER

↑
Different market needs

↑
Different success criteria

C2C
LOW VALUE DOMESTIC

↑
M2M (IoT) /
SUPERMICRO PAYMENT

X-BORDER
B2B

X-BORDER
C2C, B2C

DOMESTIC
C2C, B2C
B2B

1. SWIFT GPI
2. Fintech 3rd Party Payment
3. Crypto-based inter-bank settlement
4. Crypto-based inter-branch transfer
5. Crypto-based remittance
6. Fintech 3rd Party Payment
7. Instant Payment
8. QR Code
9. Mobile phone wallets
10. As a cryptocurrency payment method



APPLICATIONS

EXAMPLES

Example #1. Public blockchain payment can provide transparency in grant disbursements...



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...and can be applied in areas like government procurement.

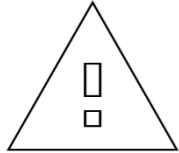


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Example #2: Potential inter-bank cross-border settlement – USC.



TO SOLVE



Created by Montu Yadav from Noun Project

More efficient inter-bank transfers

Liquidity Costs

The “P” in DVP
(Delivery versus Payment)

WHY SOLVE



Created by Montu Yadav from Noun Project

Liquidity cost savings

Ops risks Management

Capital market post-trade settlement

WHAT



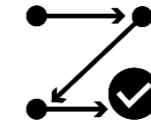
Created by Marco Rocco from Noun Project

Utility Settlement Coin (USC)
MVP 2019

Formed in 2015
Clearmatics, UBS

11 members including Deutsche Bank and MUFG

HOW IT IS SOLVED?



Created by Pujeei Fang from Noun Project

A “digital cash”
1:1 fiat currency backed

End-To-End Value Transfer

Settlement Finality on ledger

Source: <https://www.clearmatics.com/utility-settlement-coin-pioneering-form-digital-cash/>

Example #3 : Central bank's explorations of "digital cash", Liquidity Savings Mechanisms and RTGS enhancements, contributing valuable insights to industry understanding and knowledge.



Examples

STELLAR
(ECB, BOJ
joint research)

September, 2017

**MONETARY
AUTHORITY OF
SINGAPORE**

January 17, 2018

**BANK OF
THAILAND**

March 19, 2018

**PEOPLE'S
BANK OF
CHINA**

March 22, 2018

**BANK OF
ENGLAND**

March 27, 2018

**RESERVE
BANK OF
INDIA**

April 05, 2018

**What are the potential
private sector
possibilities from digital
cash" on DLT?**

**Market Structure, Business
Models, Related Data Business
?**

**What are the potential
risks to be aware?***

Source: <https://www.bankofengland.co.uk/-/media/boe/files/payments/rtgs-renewal-proof-of-concept.pdf?la=en&hash=2367D4475E64266B1C1F0399851C19DA05749543>,
<http://www.pbc.gov.cn/english/130721/3504272/index.html>
<https://rbidocs.rbi.org.in/rdocs/PressRelease/PDFs/PR264270719E5CB28249D7BCE07C5B3196C904.PDF>
<http://www.mas.gov.sg/Singapore-Financial-Centre/Smart-Financial-Centre/Project-Ubin.aspx>
https://www.ecb.europa.eu/pub/pdf/other/ecb.stella_project_report_september_2017.pdf
<https://www.bangkokpost.com/tech/local-news/1431378/bot-plans-overhaul-with-blockchain>
*<https://www.bis.org/cpmi/publ/d174.htm>



A KEY TECHNOLOGICAL CONSIDERATION

TO FACILITATE ADOPTION OF FUTURE APPLICATION OF REMITTANCES

A current key technology consideration is driven by regulatory and governance requirements – for example



1. **SANCTION SCREENING REQUIREMENTS.**

OFAC FAQ #559: “Digital currency includes sovereign cryptocurrency, virtual currency (non-fiat) and a digital representation of fiat currency”.

- a. #560: OFAC compliance obligations are the same regardless of whether a transaction is denominated in digital currency or traditional fiat currency.
- b. #561, 562: OFAC may include as identifiers on the SDN List specific digital currency addresses associated with blocked persons...OFAC’s digital currency address listings are not likely to be exhaustive...

2. **AML TRANSACTION MONITORING REQUIREMENTS.**

Source: https://www.treasury.gov/resource-center/faqs/Sanctions/Pages/faq_compliance.aspx#other_fi

How to address vulnerability to money laundering risks from the technology layer ?



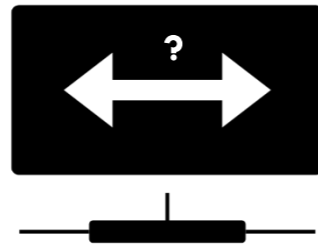
Illustration

FAKE ID



Hiding identities

VPN



Created by DAVIVONGSA PATHRPOL from Noun Project

Hiding digital jump points

TOR



Created by Fabio Nucatolo from Noun Project

Hiding digital footprints

CRYPTOGRAPHY



Created by Yair Cohen from Noun Project

Hiding digital addresses, etc

* May not necessarily be for criminal reasons. For example, to preserve banking secrecy, commercial reasons, avoid discrimination, etc.



1. **NEW COLLABORATIONS**

- a. Are banks' collaboration with regulated cryptoexchanges a new partnership model for effective KYC/AML/CFT transaction tracking?

2. **NEW TOOLS**

- a. Are multi-blockchain rail browsers a current answer that can facilitate reviews of the lineages / sources / addresses of cryptocurrencies? What other tools are required?
- b. What is the new framework (building blocks) of new blockchain tools for KYC/AML/CFT and consumer risks protection in the blockchain/DLT space?

3. **NEW STANDARDS**

- a. What can be new acceptable / proportionate compliance standards?

We overestimate the short-term effects...underestimate the long-term effects...(Amara Law)



TECHNOLOGY

RISKS & CONCERNS

LAWS & REGULATIONS

NORMS & ACCEPTANCE

NEW BUSINESS MODELS & PIVOTS

INDUSTRY EXPAND, STREAMLINE STANDARDS, CONSOLIDATE

REPEAT

1969 to 2009 b.c.

NETWORK TECHNOLOGY

- Packet switching
- ARPANET
- First 3 computers linked
- TCP/IP, IP address, LAN
- HTML, HTTP, IPv4
- Deregulation on encryption → online payment

RISKS & CONCERNS

- Cyberspace, borderless nature of information flow
- Spam, inappropriate content, copyrights
- Analogue to Digital law enforcement tools

LAWS & REGULATIONS

OTHER "RELATED" DISRUPTIONS

- 1G → 2G digital cellular. WAP.
- 3G for messaging to 4G cellular for greater network effects; interoperability

BUSINESS MODELS, ADOPTION & NORMS

- Email, browsers; BBS, Friendster, YourSpace, YouTube
- E-commerce, payment aggregators, online brokerage → Platform



THE INDUSTRY IS AT THE **REPEAT** STAGE

“There’s more homework to do”

– Ms Yuko Kawai

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