





## **Stellar: Blockchain for Payments**

August 14, 2018



• Trends in the financial market place

**Blockchain for Payments** 

**Payment Use Cases** 

Regulatory position on Blockchain

Central Bank Digital Currency





# Payment Trends: Increased customer expectations, competition and regulatory pressures

Heightened customer expectation for real time, customized payment services

Increased **competition** due to the emergence of fintechs, new paymentsenabling technologies

**Regulatory support** for open and collaborative payments ecosystem

New ecosystem spurring **collaboration** among stakeholders, forcing traditional players to **reassess their roles** 



## Payment Trends: Industry players are adapting to the changing landscape

## Collaborative Payments

- Open APIs enable stakeholder collaboration
- Banks & FinTechs collaborating on DLT/Blockchain to transform crossborder payments

ource: Stellar Research; Capgemini Research

stellar

#### Payments Player Rationalization

- Payment vendors and banks consolidating operations to form larger groups
- Major banks like BBVA, Goldman Sachs, JP Morgan etc have been very active acquiring fintechs
- Less efficient players being weeded out

#### Regulators focusing on data privacy law compliance to stem cyberattacks (GDPR)

**Cybersecurity** 

## Next Generation Payments

- Financial institutions rolling out robotic process automation, machine learning solutions for fraud detection
- Firms investing in advanced authentication technologies to improve customer service





• Trends in the financial market place

**Blockchain for Payments** 

**Payment Use Cases** 

Regulatory position on Blockchain

Central Bank Digital Currency





## **Blockchain Defined**

A public, permanent, append-only, distributed ledger. - *MIT Technology Review* 

A growing list of records, called blocks, which are linked using cryptography - *Wikipedia* 

A data structure that enables digital tracking of ownership and transfer of assets, which is shared across a distributed network of computers - *Webopedia* 

A public register in which transactions amongst parties are stored in a secure, verifiable and permanent way - *Harvard Business Review* 





## **Blockchain Use Case Features**

- Multiple Stakeholders
- Stakeholders can add records
- Value shared and/or transferred
- History of records/change required
- No central administrator required





## **US Patents Ownership - Dominated by the Financial Industry**

## **Top 10 US Blockchain Patent Ownership**





Source: Patentvue Research

stellar

#### BLOCKTECH in FINANCIAL SERVICES VIRTUALscape

#### by William Mougayar



## Why Blockchain is gaining traction in the Financial Sector?

### **Cost and efficiency**

- Removal of intermediaries
- Lower risk of corruption/compromise points
- Reduced transaction costs

### **Real time processing**

- Transparent and real time data
- Real time processing
- Cross-border processing

#### **Regulation and governance**

- Tamper proof / immutable records
- Complete transaction history for ease of traceability

#### Security and controls

- Data security and encryption
- Ease of reconciliation and avoidance of duplications





## **Stellar Blockchain - Optimized for Payments**



## Speed

## Comfort

## Passenger Space

## **Stellar Blockchain - Optimized for Payments**



**Tokenization**: Any financial asset can be tokenized and represented on the platform.



Multi-currency: Built-in exchange platform enables the exchange of any currency, asset or token.



**Speed:** Transactions are confirmed in 3-5 seconds.



**Cost:** The cost of a transaction is negligible. One cent will pay for **100,000** transactions



Scalability: Stellar can process thousands of transactions per second.



**Safety:** Stellar gives FIs the ability to choose which other members on the network they trust.



**Compliance:** Protocol allows FIs to perform KYC/AML checks prior to confirming the transaction



• Trends in the financial market place

**Blockchain for Payments** 

**Payment Use Cases** 

Regulatory position on Blockchain

Central Bank Digital Currency





## Blockchain Use Cases in Financial Services around the World-I

Use Case	Description	Who is implementing them?	Current status	Likely impact
Cross-border Payments	Blockchain speeds up and simplify cross-border payments by cutting out many of the traditional middlemen.	Mastercard, IBM, Standard Chartered, Barclays South Africa (for in-country payments), several MTOs	Live	<ul> <li>Reduce remittance cost by over 60%</li> <li>Faster processing time</li> <li>Increased transparency and security</li> </ul>
Loyalty and rewards	Blockchain enable financial institutions to create simple and effective loyalty and rewards programs	Loyyal, Bitrewards, Blockpoint	Live	<ul> <li>Real time rewards program</li> <li>Secure and transparent implementation</li> <li>Reduced cost of program implementation</li> </ul>





## Blockchain Use Cases in Financial Services around the World- II

Use Case	Description	Who is implementing them?	Current status	Likely impact
Identity Management (KYC Process)	Blockchain enables independent identity verification accessible by all organizations on the platform, eliminating duplicate KYC processes.	Microsoft/Accenture , IBM/Canadian Banks (Bank of Montreal, Canadian Imperial Bank of Commerce, Desjardins Group, Royal Bank of Canada and Scotiabank)	Proof of Concept	<ul> <li>Reduction in administrative costs for compliance departments</li> <li>Single 'source of truth'.</li> <li>Eliminates risk of identity theft</li> <li>Improved customer experience</li> </ul>
Smart contracts	Smart contracts execute commercial transactions and agreements automatically.	Barclays Corporate Bank, State Bank of India	Proof of Concept	<ul> <li>Smart contracts are more secure than traditional contract</li> <li>Reduced risk of error or manipulation</li> <li>Reduce / eliminate reliance on third-party intermediaries</li> </ul>

## **Blockchain Use Cases in Financial Services around the World-III**

Use Case	Description	Who is implementing them?	Current status	Likely impact
Share trading	Creating a decentralized and secure ledger that enables every party validate transaction	US stock exchange Nasdaq, Swedish Bank SEB	Testing	<ul> <li>Greater trade accuracy</li> <li>Shorter settlement and clearing process</li> <li>Cutting out intermediaries</li> </ul>
Loan issuance	Shared decentralized, secure ledger that enables every party to update transactions	BBVA	Pilot	<ul> <li>Reduction in loan issuance time (~50% time savings)</li> <li>Reduction in cost (verification and transaction costs)</li> </ul>





## **Securities & Exchange Commission - Sample Use Cases**

- Peer-to-peer asset trading (equities & bond)
- Blockchain for real time recording of transactions
  - Used for clearing and settlement
- Smart contracts for corporate action processing
  - Dividend distribution, stocks splits, consolidations, mergers and acquisitions, rights issues and spin offs







• Trends in the financial market place

**Blockchain for Payments** 

**Payment Use Cases** 

Regulatory position on Blockchain

Central Bank Digital Currency





# By 2019, One in five Central Banks expect to deploy blockchain solutions to address a variety of use cases



When central banks think they'll deploy blockchain tech



**Stellar** Source: Cambridge Centre for Alternative Finance (25 Central Banks Respondents)

# Central Banks typically group blockchain use cases into three buckets

	Recycle Box	Sand Box	Dark Box
	<ul> <li>Blockchain solutions that make existing use cases "better, faster, cheaper".</li> </ul>	<ul> <li>Blockchain solutions that pursue permissible objectives but in ways that</li> </ul>	<ul> <li>Blockchains solutions or to accomplish illegal objectives</li> </ul>
	<ul> <li>Require only minor adaptations to existing national and regulatory.</li> </ul>	<ul> <li>entail regulatory risks</li> <li>Due to technical properties of blockchains</li> <li>Existing regulatory regimes are inadequate</li> </ul>	<ul> <li>Requires the development of clear policies on crossborder data collection, analysis</li> </ul>
stellar	• Existing legal frameworks can be "recycled" to accommodate these blockchain use cases.	<ul> <li>Regulators &amp; Blockchain innovators to create "sandboxes" to address the regulatory lacuna.</li> </ul>	and sharing that are robust enough to create and sustain public trust

## **18 Regulatory Sandboxes around the World**

#### MAP OF EMERGING AND ESTABLISHED REGULATORY SANDBOXES



## **Regulators position around the World - I**

#### **United States**:

- Federal Reserve not regulating blockchain or cryptocurrencies
- Individual states determine how citizens can participate
- New York, Arizona, Maine, Nevada, Vermont have introduced bills to State Senates
- Bills mostly dealing with blockchain ledgers and smart contracts for record keeping and other financial industry tasks

#### Canada:

- Does not consider digital currencies legal tenders
- Digital currencies considered 'barter goods' and legal to trade
- Open to other uses of blockchain

#### France:

- Established dedicated Fintech regulatory division to address blockchain and other Fintech solutions
- Fintech labs set up to to provide regulatory advice to Fintechs

## **Regulators position around the World - II**

#### **United Kingdom:**

- Developed Regulatory Sandbox to allow businesses to test innovative products, services, business models and delivery mechanisms in a live regulatory environment.
- The Regulatory Sandbox gives businesses temporary FCA authorization to try out their products in a "safe place" testing environment.

#### Australia:

- Blockchain technology encouraged
- Digital currency legal tender
- Effective regulations exist

#### Japan:

- Blockchain technology encouraged by Japan Financial Services Agency (JFSA)
- Digital currency legal tender
- Effective regulations exist under JFSA category

## **Regulators position around the World - III**

#### Kenya:

- Set up blockchain taskforce
- Supports Kenyan blockchain association
- IBM working with large consumer goods companies to provide microcredit loans to vendors (using blockchain tech for credit scoring)

#### South Africa:

- Cryptocurrencies unregulated in South Africa
- Formulating policies with regards to digital currencies and blockchain
- Published whitepaper that recognize cryptocurrencies as stores of value
- Cryptocurrencies can be converted to legal tenders.

#### **Mauritius:**

- Created Regulatory Sandbox license that allows investors come in to the country to develop blockchain-based solutions
- State Bank of Mauritius <u>currently accepting blockchain assets as collateral</u> for loans.

## **Regulation: What Should It Look Like?**

### • Certainty:

stellar

- Regulation should offer predictability
- The mere act of rolling out crypto-specific regulations will be encouraging in an environment rife with uncertainty

### • Understandability/Simplicity:

• Overlapping layers of regulation and complex application of multiple regulatory regimes (e.g.: commodities, securities, tax) creates uncertainty

### • Regulatory communicativeness/willingness to adopt:

- Governmental efforts to understand blockchain projects and use cases.
- Responsive and communicative regulators

### • Wider business Impact:

- Manageable tax consequences
- Ease of corporate registration and domiciliation, etc.



## **Regulation in Malta**

- Malta has introduced three blockchain related bills.
  - Creation of a supervisory authority to oversee certification of digital assets.
  - Certification of blockchain technology service providers.
  - Regulatory regime for blockchain exchanges.
- Authorities are writing rules that will cover how brokerages, exchanges, asset managers and traders operate, making them among the broadest set of regulations for the industry.
- A national tax policy that permits international companies on the island to pay a rate of as little as 5 percent.
- The bills also empower the Malta Financial Services Authority to regulate and investigate abuses.
- These developments have attracted some of the largest blockchain companies in the world to move their operations and domiciliations to Malta.







- Trends in the financial market place
- **Blockchain for Payments**
- **Payment Use Cases**
- Regulatory position on Blockchain

Central Bank Digital Currency





## **Central Bank Digital Currencies (CBDCs)**

- Central banks have only issued physical money (can be used peer to peer) or digital money in the form of debit and credit accounts at depository institutions (cannot be used peer to peer).
- Central banks have not issued money that is digital AND usable peer to peer.



International Bank of Settlement

## **Central Bank Digital Currencies (CBDCs) - How do they work?**

- CBDCs would function much like cash: the central bank would issue a CBDC.
- Once issued it would circulate between banks, non-financial firms and consumers without further central bank involvement.
- Such a CBDC might be exchanged between private sector participants bilaterally using distributed ledgers without requiring the central bank to keep track and adjust balances.
- It would be based on a permissioned distributed ledger, with the central bank determining who acts as a trusted node (likely banks and other major financial institutions).
- Wholesale CBDC PoCs: Bank of Canada (Project Jasper), the ECB, the Bank of Japan (Project Stella) and the Monetary Authority of Singapore (Project Ubin), have already run experiments operating DLT-based CBDC wholesale RTGS systems.















## **Central Bank Digital Currencies (CBDCs) - Do or do not?**

- Existing crypto currencies are too volatile as commercial settlement instruments
- CBDCs are the ultimate digital asset alternative to pure-play cryptos (BTC, ETH, etc.)
- A retail central bank issued digital currency would operate as a public extension to existing Real-Time Gross Settlements (RTGSs)
- Publicly accessible central bank digital currencies could fundamentally disrupt the payment industry, esp. debit cards
- Central bank issued digital currencies increase traceability, regulatory control and taxability of cash transactions
- Central banks around the world are actively pursuing digital currency initiatives today
- Retail CBDCs may be less than 12 months away; the "tipping point" only requires one













And in case of the last street. DETENT DANK OF THE U.A.F.

## stellar

## For more information, reach out to: www.stellar.org

