Intergovernmental Working Group of Experts on International Standards of Accounting and Reporting (ISAR)

35th SESSION
UNCTAD-ISAR Workshop
Room XXVI, Palais des Nations, Geneva

Monday, 22 October 2018

Digital currencies and blockchain: implications for accounting

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Digital Disruptors

What does digital disruptor mean for your company’s development?

The current development is exponential - the next step has never been larger, while the gap between leading and low performing functions has never been larger.
While defining blockchain and the benefits...
A blockchain is a digital, chronologically updated, distributed and cryptographically sealed record of all data transfer activity.

- **Distributed**
  A copy of all transactions is saved on all participating devices.

- **Transparent**
  Everyone within the system has access to the same copy of all transactions.

- **Immutable**
  The record of transactions with corresponding timestamps of entry is unchangeable.

- **Secure**
  Authentication and identification via cryptography public/private key mechanism.

- **Programmable – efficient automation**
  Can be automated through smart contracts/smart oracles in accordance to a predefined protocol.

Near Real Time
Less third party
Distributed ledger
Irreversibility
Censorship resistant
CONTENTS
Blockchain impact on Accounting and Audit – the Journey
Accounting and Audit impact – From short – to long term journey
The impact along the journey – a possible scenario

New Assurance Services
- Audit of Smart Contracts and “Oracles”
- Administration Function
- Arbitration Function
- Fact finding reports
- Cryptographic/ Algorithm Assurance
- SOC/ISAE reports and IT Infrastructure reports
- ...

Today
- Using available tools
- Set bespoken audit approach
- Use Interpretation of actual accounting policies

Short Term Impact
- Having a node to the Blockchain and use own database
- Blockchain is linked back to Accounting systems
- Use an audit tool (Blockchain – Node – Big data environment – analytics scripting)

Mid Term Impact

Long Term Impact
- Automation granted also through other emerging technologies (AI, Analytics, RPA, Machine Learning)?
- Standardization?
- Triple accounting entries, automation of transaction, accounting and audit?
- New accounting policies and audit standards?
CONTENTS

New processes and business models – risks and opportunities
Syndicated Loans tomorrow; blockchain as strategic enabler

Disintermediation
Removes need for Agent Bank to act as arranger or provide ongoing operational support

Efficiencies
Transaction data is maintained on the blockchain and the 'smart contract' concept could be used for ongoing loan repayment

Audit Trail
Original terms of the loan and syndicate member information can be maintained throughout the life of the loan

**Illustrative scenario** | **Blockchain strategic enablers**
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Loan Origination | • Direct interaction with interested counterparties that would traditionally comprise the loan syndicate  
• Reduction in cost associated with the loan origination for a syndicated loan  
• Opportunity for increased investor pool not traditionally part of a syndicated loan

Ongoing Operational Management | • Reduction in cost associated with the ongoing operational management of the loan usually performed by the agent bank  
• Leverage the 'smart contract' concept of blockchain by holding all of the loan terms and payment details on the blockchain

Loan Repayment | • Payments can be automatically generated and sent to the members of the syndicate  
• Further reduction in operational costs and reduction of risk due to manual processing or ongoing data errors
Financial Data Management; blockchain as strategic enabler

**Disintermediation**
Removes the reliance on banks and other counterparties to provide timely credit information and documentation.

**Efficiencies**
Distributed ledger enables transparent real-time data transfer and reduces the need for reconciliations and disputes.

**Audit Trail**
Immutable permissioned/memorialization on permissionless ledger enhances ability to trace credit information and reduces data errors.

**Ongoing Collateral Requirement Management:**

<table>
<thead>
<tr>
<th>Current State</th>
<th>Future State</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bank A sends collateral posting request to Corporate</td>
<td>Corporate Treasury can access the complete financial data and records on transaction/counterparty level</td>
</tr>
<tr>
<td>Corporate Treasury wants to validate the request</td>
<td>Permissioned ledger for derivatives and credit facilities</td>
</tr>
<tr>
<td>Obtain latest mark-to-market info from the ledger system</td>
<td>Updates made by Operations and Finance/Accounting are reflected near-real time</td>
</tr>
<tr>
<td>Retrieve executed CSA documentation</td>
<td></td>
</tr>
<tr>
<td>Pending Bank A to provide a correct copy</td>
<td></td>
</tr>
<tr>
<td>Corporate Treasury may not be able to validate as collateral delivery is due</td>
<td></td>
</tr>
<tr>
<td>Unable to align the retrieved CSA to the corresponding swap</td>
<td></td>
</tr>
</tbody>
</table>

**Illustrative scenario**

**Blockchain strategic enablers**

**New Transactions**
- Shared ledger allows Corporate to track all the issued term sheet details from the financial institutions’ lenders and links back to the finalized closing terms
- Corporate and comparable corporations can potentially share historical pricing offers in order to improve pricing visibility and benchmark the marketplace more accurately

**Outstanding Credit Facilities**
- All the financial data, terms and related documentation are linked on the permissioned ledger (private or a consortium chain) on a transaction or counterparty level
- The immutable linkage provides an audit trail for both internal and external reviewer
- Enhancement on financial data transparency and quality allows Corporate to manage its liquidity risk across its global operations more effectively

**Derivatives**
- Smart contract template allows Corporate to store and maintain both draft and negotiated versions of ISDA and CSA, and the collateral posting requirement and various default triggers can be monitored more efficiently
- Potential disputes on trade terms between counterparties are mitigated
Cross-Currency Payment Management tomorrow; blockchain as strategic enabler

**Disintermediation**
The Cross-currency payments on blockchain technology allow for the disintermediation of correspondent banks.

**Efficiencies**
FX Rate Pathfinding allows the organization to find the optimal FX rate available on network.

**Audit Trail**
Clear audit traceability on distributed ledger allows for traceability of payment from originator to recipient.

**Current State**
- Corporate asks it’s bank (Bank A) to make payment to international client
- Bank A facilitates transfer with Bank B from local to foreign currency
- International entity confirms receipt
- International entity confirms receipt

**Future State**
- Corporate wants to make a payment to an international entity
- Blockchain Payment Rail successfully converts funds and transfers them to entity account
- International entity confirms receipt

**Illustrative scenario**

**Blockchain strategic enablers**

**Payment Initiation**
- Corporate identifies recipient information based on recipient’s unique address on the blockchain network
- KYC information is stored in a digital identity on the blockchain
- The blockchain payment rail finds the most optimal FX rate available on the network from pre-selected providers
- You can assign different values to the keys, to build approvals, checks, balances into the system

**Transaction Execution**
- The payment rail shares data (e.g., invoice number, terms) and sender / receiver information between transacting banks to pre-authorize transactions
- Blockchain exchanges payer currency for bitcoin and then exchanges bitcoin for recipient currency
- The payment rail secures the transaction using public-private key cryptography
- Transactions can be executed in real time

**Notification & Receipt**
- Recipients are notified of the incoming transaction and see as payment is posted to their account
- Transaction and details are recorded immutably to the shared ledger
GL and Transaction Reconciliation tomorrow; blockchain as strategic enabler

**Disintermediation**
- Reduced complexity of IT infrastructure
- Improved visibility and access to information

**Efficiencies**
- Distributed ledger enables transparent real-time data
- Reduces need for reconciliations and may help reduce disputes

**Audit Trail**
- Enhanced traceability of GL entry participants
- Path can be traced from origination of GL entry from sub-ledgers

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**Current State – Enterprise Systems**
- North America
- Europe
- APAC
- LATAM

- Cash TMS Platform
- Debt & Derivatives
- Short-Term Funding
- Investment Management

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**Future State – Enterprise Systems**
- North America
- Europe
- APAC
- LATAM

- Blockchain
- Cash TMS Platform
- Debt & Derivatives
- Short-Term Funding
- Investment Management

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**Illustrative scenario**
- GL Reconciliation
  - Source of truth for GL entries submitted by subsidiary
  - Immediate acknowledgement of transactions across the treasury and enterprise platforms
  - Reduced number of independent and (and potentially) inaccurate sub-ledger systems.

- Transaction Management
  - Centralized reporting and transaction monitoring
  - Leverage the ‘smart contract’ concept by holding transaction terms and details within block chain ledger.
  - Reduced number of failure points for transaction management.

- Interface Simplification
  - Establishing a common ledger and shared database across platform simplifies interface structure.
  - Reduction in the need for multiple ack/nack file messages, time stamps, etc.
  - Reduction in the number of middleware applications supporting different transactions.
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Who is Who
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