Unlocking private company value with its capture and distribution in a Permissioned/less distributed environment

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Agenda

• Business Need
• Scope of the PoC
• High Level Approach
• High level Functional/Technical architecture
• Demo
• Learnings and Challenges
• Future Roadmap
What’s the Need?

• Initial investors in startups/SMEs hope to receive significant returns on their investments when the company reaches an exit, But
  • No exit
  • Lock-up periods
  • Longer time to stay Private (>11-12 years)
• Buyers of shares in pre-IPO companies in the secondary market find themselves with relatively illiquid assets.
• Secondary shares traded volume in 2017 > $58B¹
• The crypto market can take the pre-IPO secondary market to a new stage, using digital tokens, and simplify the process of selling shares
• Tokenization of previously illiquid assets may increase the market value by 10%-40% as illiquidity costs vanish²
• May open the investment space for the Blockchain-community in addition to all Accredited/Qualified Investors

¹Source: Greenhill Cognet
²(http://people.stern.nyu.edu/adamodar/pdf-files/country/illiquidity.pdf)
Scope of the PoC

The solution uses blockchain technology platforms (along with off-chain processes) to:

• Bring symmetry and transparency in capturing value of the startup/SMEs

• Help existing investors have their equity value in digital tokens, and provide continuous view to the company's changing value

• Provide potential investors a transparent view of the company performance and shorten investment process with seamless token transfer, enhancing liquidity of the equity for both companies and investors

Hyperledger Fabric brings transparency and trust in maintaining the cash flows of the Companies and the tokenization of profits using Ethereum provides liquidity to the initial investors and encourages entry of new investors.
High Level Approach

The Private Blockchain (Hyperledger Fabric)

- The SME and it’s Investors’ profiles will be maintained on Hyperledger Fabric.

- As a onetime setup, the Fabric platform will be used to access transaction data of the individual SMEs to arrive at a baseline index, which can be used for the initial pegging (in terms of value) of the tokens.

- Subsequently, at a regular frequency (on a quarterly basis), the Fabric platform will keep accessing data from the accounting system of the individual company, import and record those and make updates to the index, based on the changes in the cashflow.

- The corresponding changes to the overall and investor specific token numbers will be pushed to the Ethereum platform.
High Level Approach

The Public Blockchain (Ethereum)

- The Ethereum platform will be responsible for propagating the changes in the numbers of the tokens to individual token owners and maintain investor wallets

- The existing investors would be able to execute transactions (i.e. redemption, transfer etc of tokens) using the Ethereum platform

- The SME specific tokens can be exchanged against an exchange-traded platform-specific security token (To be developed) and hence traded, leading to liquidity for the token owners
**High Level Functional Diagram**

- **SME**
  - Investor Registered and Enrolled
  - Completes Registration

- **Fabric-CA**
  - Node-based User Registration Module
    - saving/updating the user details

- **Fabric Network**
  - Ethereum-based Wallet creation module
    - wallet address
    - wallet creation

- **Ethereum Network**
  - Ethereum-based Token creation and distribution
    - Document hash and benchmark details stored
    - token creation and transfer

- **Investor**
  - Completes Registration

- **Cashflow document uploaded**
  - SME
  - Node-based module for benchmark calculation
    - smart contract triggered
Current Implementation of the PoC

- First use case of the PoC has been done with a private (IT services) company, which is registered on an Indian online private placement platform.

- Tokens worth USD 400K have been issued to wallets of the existing investors.

- Working on similar services for a private company based in another emerging economy.
Learnings

• The Burrow EVM does not serve the purpose of this use case, as we needed to create and maintain the Security Tokens on a public blockchain, in order to make the tokens available for exchange and liquidity.

• We have used REST APIs to communicate between the Fabric and Ethereum networks as this is not a case of ledger interoperability. We are storing the references of transaction on Ethereum (e.g. wallet addresses, contract addresses) on Fabric, and these are used for sending transactions to Ethereum.

• We have currently implemented the ERC20 token standard, and we plan to extend it to use the ERC777 standard (advanced standard for fungible tokens) and eventually to extend it to work with the ERC1400 Security Token Standard.
Challenges

- Changes to the Fabric network: Once a channel capabilities are enabled, further manual re-configuration using configtxlator is tedious and prone to errors.

- Simultaneous execution of benchmark updates and token creation in two different platforms is prone to errors, unless both of them get executed one after the other.
Future Roadmap

- Set up and Issuance of a Platform token, which can be exchanged with any of the SME’s digital token and will be listed as a Security Token in one of the exchanges.

- SMEs will be able to add metrics other than Quarterly Cashflows (e.g. No. of customers/users added per quarter, No. of stores opened per quarter etc) to back the tokens in the Fabric platform.

- Individual SMEs would be able to set up/configure the algorithm based on which the token distribution and redistribution will take place.

- With the addition of new Investors, the equity distribution and the token redistribution should change to reflect the new equity % of the investors.
Intain Technologies – In Brief

**Intain (Intelligent + Chain)** is a research based technology venture that combines the powers of Blockchain and AI. Founded by Financial Services (Business, Operations and Technology) industry veterans, we understand the impact – benefits and risks – of technology. Our employees are explorers who work in an environment that blends a research lab and start-up.

**Intelligent Blockchain**

- Emulya is the world’s foremost Blockchain based Asset Securitisation platforms based on Hyperledger Fabric that combines AI with Blockchain bringing together issuer, investor and rating agency. The platform can be customised to cover other related asset classes like Warehouse Lending, Private Placements etc.

- **Intelligent Blockchain Projects**
  - Intain’s Blockchain Competence Center and AI Lab combine to help our clients build their own Intelligent Blockchains across blockchain platforms or launch security tokens. Projects are best on enterprise software development best practices using Agile DevOps.

**Automation**

- **IN-D** is an Op-bot from the AI Lab of Intain to reduce cost, eliminate error and improve efficiency through across Use Cases through:
  - Document to Data - (Digitisation)
  - AI based prediction of outcomes (Decisioning)
What else can we discuss?

• We have also worked on and can discuss about:
  • Securitization on blockchain
  • Dealer Financing on blockchain
  • Interplay of AI and blockchain in solving business problems

• We are looking to talk to people:
  • Who have deployed HL Indy in PoC and/or production environments
  • Who have worked with Fabric CA for Identity in a multi-org, production environment

• We can be reached:
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