Changing the Know your Client (KYC) Cycle utilizing Blockchain

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***Abstract*: The Know Your Customer (KYC) process is an essential part of the financial ecosystem. KYC. This process requires banks to verify and authenticate primary documents. However, today's market is flooded KYC tools that facilitate this process and share these documents with multiple entities, whatever they provide very little added value. Block chain technology with the concept of time-stamped immutable ledgers and distributed systems, can effectively facilitate banks to improve their KYC methods by enabling near real-time data exchange between different entities for faster and efficient validation ensuring data integrity significantly reduce time and costs. The proposed KYC system is a Block chain-based decentralized system that can be used to establish proof of identity for an individual person. It is also a cost-effective method, and the data stored on the decentralized application provides an additional layer of security.**

***Keywords*: Banking, Block chain, KYC, Distributed Ledger Technology.**

INTRODUCTION

Know Your Customer (KYC) is the process by which financial institutions verify the identity of customers or businesses they do business with. KYC the procedure is done to prevent institutions from being used/exploited for unethical and illegal activities such as money laundering, whether intentional or unintentional. In India all financial institutions except regional rural banks are required to follow RBI KYC guidelines 2016 and update KYC data from once every two years to once every ten years according to the risk associated with customers.

Apart from being a legal requirement, KYC is essential a tool to prevent financial and illegal fraud activities. According to a recent survey by the company, major financial institutions are spending to $500 million per year on KYC and payable to customer's diligence. In addition to processing and background expenses, financial institutions around the world have to pay significant fines for non-compliance due to uncertainty, ambiguity and complexity of the process. It requires urgent need to revamp KYC and due-diligence processes and record keeping system. It affects it overall transaction experience for institutions as well as customers. KYC and due diligence processes are typical laborious, repetitive and slow, resulting in higher overheads and irregularities.

1. PURPOSE

The purpose of a block chain-based solution that reduces the cost of the conventional KYC verification process. The main difference consists in the fact that the entire verification procedure is carried out only once for each user, in any case for the number of institutions that register, increasing transparency by securely sharing results. In this approach, Proof of Concept (POC) is used. This practice reduces costs, improves customer experience and increases transparency

EXISTING SYSTEM

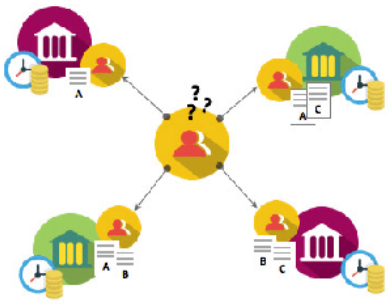

Fig 1: Existing KYC Process

KYC verification leads to huge expenses unnecessary costs, human effort and time in terms of finance institutions.

The KYC process is usually very redundant and recurring as every financial institution must fulfill it your own KYC process.

Clients must submit the same documents for KYC repeatedly at different financial institutions separately, which leads to an unpleasant experience.

Sometimes old systems that store sensitive KYC data does not provide sufficient security.

Therefore, calling for a solution is an urgent priority which solves the problem of repeating the process, duplicating records that are stored and disturbing long scope of the process. It's important to stand your ground they believe that topics such as this require dealing with the sensitive data. The regulations regarding the protection of personal data must not be ignored.

DRAWBACKS OF EXISTING SYSTEM

The current KYC process consists of an exchange of documents between the customer and the financial institution that intend to work together. The process includes the collection of basic identity information from all beneficiaries to check for illicit activity and ‘‘politically exposed persons. The process also includes risk management with regard to onboarding new customers, the monitoring of transactions, and specific customer policies for banks. The process is costly for financial institutions and may expose them to large fines if it is not conducted in accordance with the existing regulations.

LITERATURE SURVEY:

“KYC Verification Using Blockchain”, Sunitha N V; P Ashwini; Sandhya; Shriraksha Bhat; Tushara Sasi; is a author of this paper. In this paper, we introduce a novel blockchain-based e-KYC scheme called e-KYC TrustBlock based on the ciphertext policy attributebased encryption (CP-ABE) method binding with the client consent enforcement to deliver trust, security and privacy compliance. In addition, we introduce attribute-based encryption to enable the privacy preserving and fine-grained access of sensitive transactions stored in the block chain. Finally, we conduct experiments to show that our system is efficient and scalable in practice.

"KYC Optimization Using Distributed Ledger Technology” Jose´ Parra Moyano; Omri RossIoan Buciu; in this paper described The know-your-customer (KYC) due diligence process is outdated and generates costs of up to USD 500 million per year per bank. The authors propose a new system, based on distributed ledger technology (DLT), that reduces the costs of the core KYC verification process for financial institutions and improves the customer experience. In the proposed system, the core KYC verification process is only conducted once for each customer, regardless of the number of financial institutions with which that customer intends to work. Thanks to DLT, the result of the core KYC verification can be securely shared by customers with all the financial institutions that they intend to work with. This system allows for efficiency gains, cost reduction, improved customer experience, and increased transparency throughout the process of onboarding a customer.

"Enabling Trust and Privacy-Preserving e-KYC System Using Block chain" Somchart Fugkeaw; The electronic know your customer is a system for the banking or identity provider to establish a customer identity data verification process between relying parties. Due to the efficient resource consumption and the high degree of accessibility and availability of cloud computing, most banks implement their e-KYC system on the cloud. Essentially, the security and privacy of e-KYC related documents stored in the cloud becomes the crucial issue. Existing e-KYC platforms generally rely on strong authentication and apply traditional encryption to support their security and privacy requirement. In this model, the KYC system owner encrypts the file with their host’s key and uploads it to the cloud. This method induces encryption dependency and communication and key management overheads.

“Know Your Customer (KYC) Implementation with Smart Contracts on a Privacy-Oriented Decentralized Architecture” Nikolaos Kapsoulis; This system state that, Enterprise blockchain solutions attempt to solve the crucial matter of user privacy, albeit that blockchain was initially directed towards full transparency. In the context of Know Your Customer (KYC) standardization, a decentralized schema that enables user privacy protection on enterprise blockchains is proposed with two types of developed smart contracts. Through the public KYC smart contract, a user registers and uploads their KYC information to the exploited IPFS storage, actions interpreted in blockchain transactions on the permissioned blockchain of Alastria Network. Furthermore, through the public KYC smart contract, an admin user approves or rejects the validity and expiration date of the initial user’s KYC documents.

PROPOSED SYSTEM

Fig 2: KYC using block chain

The user uses the web app and registers by providing your name, email, phone and password. The phone number is verified via OTP. If the user had previously logged in, can log in by providing registered e-mail and password at the time of registration. This data is stored in the database. This is a critical step in how authentication is done to make the user legit and prevent random people/bots sending their data. Security could be further strengthened using a login/login screen.

Once the user has logged in, s/he will be asked to fill out the KYC form. This form requires the user to fill his/her name, phone both of which are already filled in by the user and will be retrieved from the database, in addition to the 10/12-digit pan & Aadhar

number. Once the user fills the KYC form, this data is temporarily added into a database on the AWS server and is verified automatically using PAN and Aadhar APIs.
After the details provided by the user are authenticated, all the data provided by the user in the KYC form is then added into the Blockchain. The user will be presented a list of banks wherein which he/she simply has to tap on the list item of that bank. Once the user clicks on submit, the details are stored in a database along with some user details like name and phone. The data once verified by the automated Aadhar and PAN APIs is added to the blockchain.

SYSTEM ARCHITECTURE

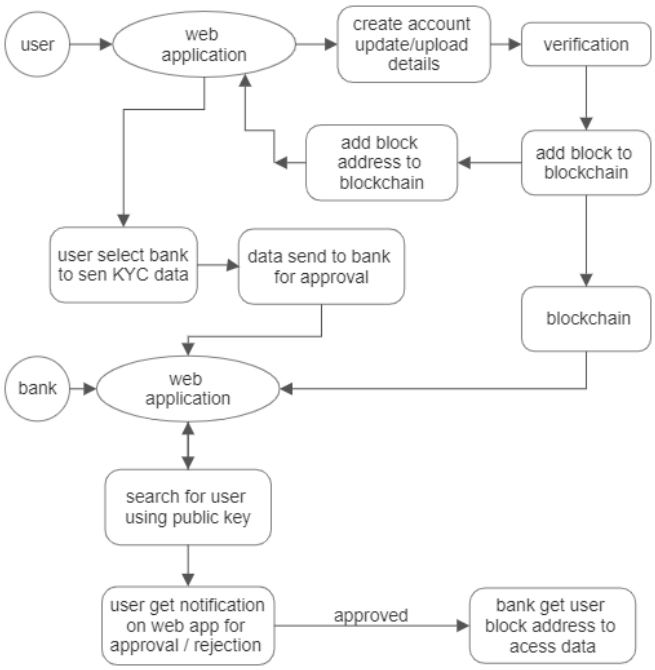

Fig 3: System Architecture Diagram

METHDOLOGY

We designed a block chain-based KYC verification system that would generate a block for each bank. Once a block is created for each bank, the customer must enter the KYC information, which is then stored on the block chain network by creating an account on the block chain through the customer account. They can then request a bank to open an account for them and the information will be stored on the block chain. The details stored in the block chain can only be modified or changed by the customer, especially with the customer's permission. By sending a viewing request to the customer's profile, only the requested bank can view the customer's KYC document. When a request is sent to a customer profile, the customer has the option to allow or deny it. If the customer agrees to the display request, the block chain will provide the bank with a transparent view. So that the government can cross-check the customer's KYC document issued by the government. This customer information, which is stored in the block chain, is mainly used for additional security.

SYSTEM REQUIREMENTS

- **Software Used:**

1. Android studio
2. Anaconda 2
3. Windows 8 or above
4. Pycharm
5. Notepad++
6. Xamp

- **Hardware Used:**

1. CPU: i3 or above
2. RAM : 4GB or above
3. Hard Disk : 80 GB or above

ADVANTAGES

1. The entire process is highly cost effective for Banks.
2. The process is much smoother for customers as they need to upload their details only once. Once these details are verified by the concerned authorities for the first time, the use of public and private key of the banks can be used by those financial institutions for verification of that customer and retrieval of the data of that customer from the blockchain.

3. The scope of popular KYC methods like eKYC is limited to India, as these methods base their verification process on the Indian Govt. authorized Aadhar Card. Our solution, however, can be applied globally without any restrictions.
4. If a customer wants to apply to any other banks, all s/he needs to do is select it from the list of banks provided in the mobile application. Thus, the entire KYC process can be limited to just one tap, giving the ultimate convenience to customers.

APPLICATION:

1. Banks.
2. finance.
3. Organizations**.**

ALGORITHM

- **AES-256 for Encryption**

AES-256, which has a key length of 256 bits, supports the largest bit size and is practically unbreakable by brute force based on current computing power, making it the strongest encryption standard. The following table shows that possible key combinations exponentially increase with the key size.

- **SHA-1 for hash value**

SHA-1 works by feeding a message as a bit string of length less than 2 64 2^ {64} 264 bits, and producing a 160-bit hash value known as a message digest. Note that the message below is represented in hexadecimal notation for compactness. There are two methods to encrypt messages using SHA-1.

CONCLUSION

We have successfully completed project documentation and also learned through existing system and literature review, our system KYC implemented in block-chain as centralized KYC has lot of problems. Block-chained KYC has become a blessing. Not just this much but it assures fast processing, security, no third party need and transparency making it more easy and useful to user. The combination of Block-chain and KYC is going to numerous benefits to humans and information system.

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