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# Blockchain-Based Decentralized Know Your Customer (DKYC)

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**ABSTRACT:** Know your customer (KYC) is used in government organizations and by all financial service providers. We are currently dealing with a time-consuming and costly KYC process, and each organization has its own KYC. So, in order to eliminate the traditional process and ensure the KYC process is secure and efficient, we adopt Blockchain Technology to replace the present manual process. The proposed decentralized KYC system based on the blockchain can be applied at multiple locations to validate the customer's identity, which is a prerequisite in today's world. To establish trust between stakeholders, the current system ensures that the data stored is tamper-proof with no indulgence of the third party. In terms of gas used to deploy smart contracts on the blockchain, the decentralized KYC system is less expensive than the manual process. Even if the decentralized database is compromised, tampering with the data is harmless because it is encrypted with an additional layer of security.

**KEYWORDS:** Decentralized KYC, smart contract, blockchain

## I. INTRODUCTION

KYC is the procedural term that is used to verify a customer's identity by financial institutions or banks. It uses government-authorized documents such as Aadhar cards, PAN cards, etc. This process varies from bank to bank. It is a manual process. This traditional procedure of KYC requires a lot of paperwork and is time-consuming.

Decentralized Know Your Customer (DKYC) is the process that overcomes the problem of traditional KYC. In DKYC, the information is stored in blocks in the blockchain. This information is tamperproof and reduces paperwork. It also eliminates the involvement of the third party. After opening an account, the bank requests KYC from the customer. If the request is accepted by the customer, the bank can verify the documents and does the further process. DKYC helps us to maintain & keep a track of records.

### 1.1.1 Existing System

Every firm, especially financial institutions, must authenticate your identification in some way. The emergence of 'know your customer,' or KYC regulations, aided corporations in ensuring they know whom they're doing business with. Typically, this entails a lengthy, drawn-out procedure in which specific documents are shown and various types of background checks or verification are performed. In the conventional KYC system, each bank conducts its own identification check, which means that each user is vetted individually by a separate company or government body. As a result, time is wasted checking each identity from scratch.

### 1.1.2 Proposed System

The blockchain architecture and DLT enable us to aggregate information from many service providers into a single cryptographically secure and immutable database that does not require a third party to validate the knowledge's authenticity. It enables the creation of a system in which the user only needs to go through the KYC procedure once to verify his or her identity.

### 1.1.3 Blockchain

A blockchain is a decentralized, distributed, and open digital ledger that is utilized to log transactions across numerous computers in a way that prevents the record from being changed retrospectively without changing all succeeding blocks and obtaining network consensus.

#### 1.1.4 Smart Contract

The best aspect of the Ethereum Blockchain is Smart Contracts. Smart contracts are contracts with "external" functions. The behavior of accounts in the Ethereum state is tracked by smart contracts, which are software programs. When an Ethereum contract is assembled, it is done so in bytecode. The bytecode is kept on the blockchain of the Ethereum network. As a result of the blockchain's immutability, additional changes can be made to it after it has been added. The smart contract gets a new address after it is created and recompiled, giving it an updated address.

### II. LITERATURE SURVEY

[1] SOMCHART FUGKEAW, "Enabling Trust and Privacy-Preserving e-KYC System Using Blockchain  
This paper describes decentralized know your customer (e-KYC) which is a system for the banking or identity provider to establish a customer identity data verification process between relying parties.

[2] SHIVAM CHAUBEY, "AutoKYC: Automation of Identity establishment and authentication in KYC process using Text extraction and face recognition".

AutoKYC is a system designed for the organization who wants to verify the identity of the users while doing their KYC for example, a bank.

[3] ANDREA GIACOBINO, "Cosmos Cash: Public Permissionless approach towards SSI and Use Cases"

In the digital world, digital identity is essential as it represents users in the same way that physical identity represents people in the physical world.

[4] YUJI SUGA, "ICH 3-party model for claims distribution on the blockchain and their application to the e-KYC-e model".

Various services based on blockchain technology are reported daily. There are many unfortunate proposals to use blockchain as a distributed database merely, and a flowchart that allows you to self-confirm whether blockchain is necessary there has been announced.

### III. METHODOLOGY

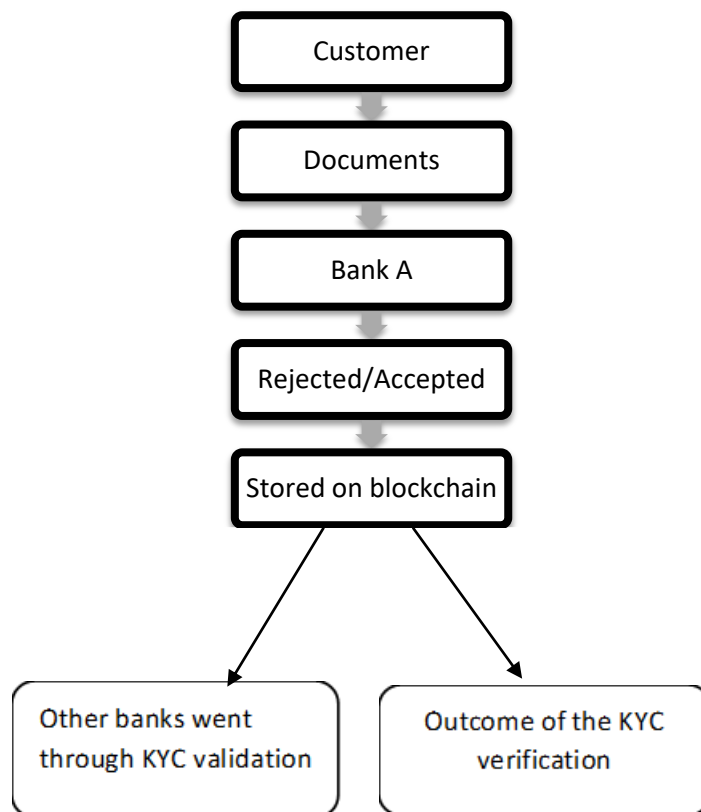


Figure 1:KYC on blockchain

#### IV. SYSTEM ARCHITECTURE

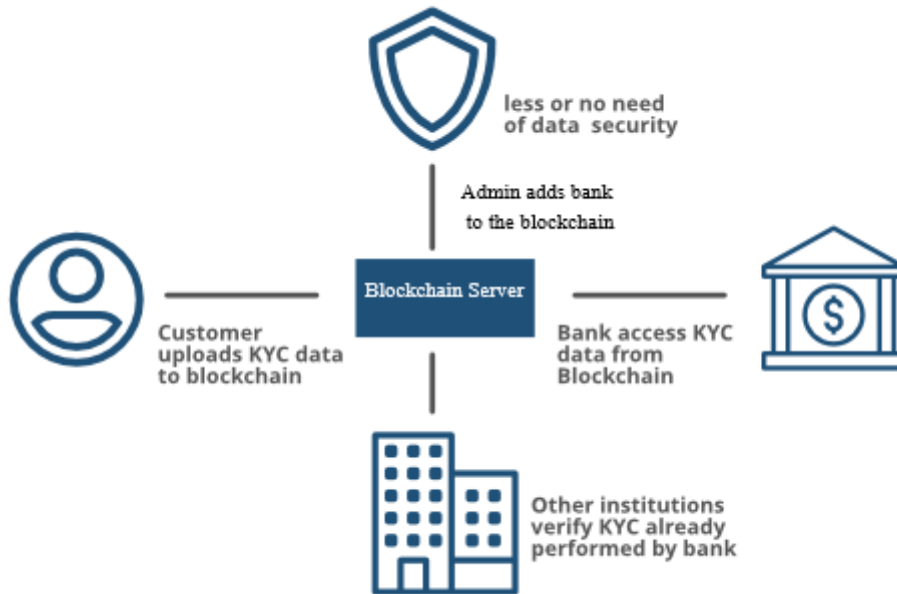


Figure 2: DKYC System Architecture

#### 1.2 Process

The customer registers himself on the DKYC dashboard using his credentials and ID proof. The ID proofs can be any document authorized by the government authorities such as PAN Card, Aadhar Card, etc. This information is stored as a block in the private blockchain. Similarly, Financial institutions and banks register themselves on the DKYC dashboard.

Financial institutions or banks request KYC from the customer. Customers can approve or deny the request sent by the banks. If the customer is denied access, then a notification is sent to the bank informing the same.

Upon accepting the KYC request by the customer, the bank can access the required information to complete the KYC process. If the KYC is rejected, the customer can add or update the KYC documents as per the bank's requirements after receiving the notification. Similarly, if the KYC is accepted, the customer receives a notification for the successful completion of KYC.



### 1.3 Result

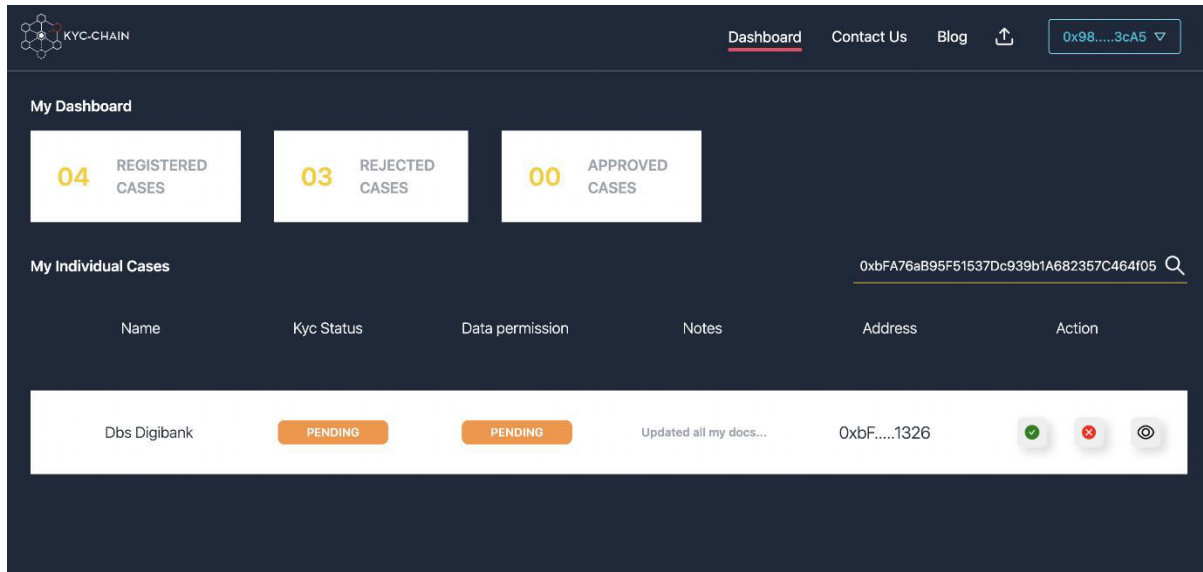


Figure 3: DKYC System Result (Financial Institution’s or Bank’s Dashboard)

Decentralized KYC on the blockchain can provide increased security, privacy, efficiency, transparency, and accountability in the KYC process, benefiting both individuals and organizations. Since the data is stored on a public blockchain, all parties involved in the KYC process can view and verify the information. This can help prevent fraud and ensure compliance with regulatory requirements. Data is stored on a distributed ledger; it is nearly impossible for hackers to manipulate or steal the information. Additionally, users no longer must submit their personal information to multiple organizations, reducing the risk of identity theft.

### V. CONCLUSION

By using very few resources to monitor and analyze user behavior for anomalies, KYC chains shorten the time it takes to process and gather information. The time and money saved can then be put toward solving more difficult KYC problems.

When combined with other technologies like AI, the KYC chain has the potential to significantly reduce the time and cost associated with the KYC process for institutions.

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