

Cheque Truncation Mechanism Using Blockchain

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EXECUTIVE SUMMARY

Cheque truncation system (CTS) is an image-based cheque-clearing framework. The semi-manual process has certain limitations and takes up to three working days to clear an inter-bank national cheque. Faced with the limitations of this system, cheque users and commercial banks need an efficient and secure system which can clear a cheque within less than 24 hours along with providing integrity and confidentiality to the system. All banks intending towards participating in this framework must connect towards the proposed blockchain-based system. A comprehensive framework among four primary phases—(1) paper check clearing process, (2) digital check issuing and clearing process, (3) check fraud detection process, and (4) check transaction security procedure—was presented as a solution.

LITERATURE SURVEY

The 2008 global financial crisis imposed rigorous and rigid banking norms and regulations worldwide in an effort to stop and deflect a crisis of this nature from occurring ever again. Nguyen makes an effort to highlight the part played by blockchain technology in the creation of a financial system that is much more focused on the needs of the client and transparent. As an industry, Barclays is the first to use blockchain technology in its operations. Moreover, Santander began utilising blockchain technology for in-the-moment trade operations. The first blockchain application for the insurance industry is called InsurChain. Starbase also started utilising crypto-tokens (Singh et al., 2018) for various types of crowd fundraising. In their study, Guo and Lang explain how blockchain technology combines various other current computer technologies, including distributed data storage and peer-to-peer networking.

INTRODUCTION

Technology development has significantly changed every sector, including the financial, industrial, educational, and administrative ones. The banking industry has developed rapidly and kept up with these technological changes. The banking industry underwent a significant transition in the late 1980s or early 1990s. Electronic clearing system (ECS) and card-based payment systems were launched during this decade, allowing for the electronic movement of funds between bank accounts. Real Time Gross Clearance (RTGS) and NEFT (National Electronic Funds Transfer) were also incorporated into the banking sector in later decades. Due to the high volume of transactions for these products, the financial institutions have implemented the cheque truncation system (CTS).

Cheques (PaissaBazaar, 2023) are electronically transferred to the drawer's bank (scanned images of the cheques). The time it takes to clear checks is shortened by this method. In their discussion of numerous methods of forgery in digital cheques, mention replacing a duplicate signature of any individual and altering the precision of the cheque amount using digital image processing techniques (Ghandali and Moghaddam, 2009). To detect any check fraud, Rajender and Pal (2014) suggest a digital watermarking-based technique. The e-cheque framework's architecture is suggested by Anderson (1998). An electronic cheque system based on mutual drawer and payee authentication is proposed by Chang et al. Researchers are becoming more interested in blockchain-based major e-governance applications like the blockchain-based property transaction system.

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