Chapter 10
Securing Online Bank's Big Data Through Block Chain Technology: Cross-Border Transactions Security and Tracking

Kommu Narendra
National Institute of Technology Puducherry, India

G. Aghila
National Institute of Technology Puducherry, India

ABSTRACT

Many sectors and fields are being computerized to make the work paperless, more transparent, and efficient. Banking is one such sector that has undergone enormous changes. Any amount from any part to any corner of the world is now possible around the clock. The dependency on technology for providing the services necessitates security, and the additional risks involved in cross-border nature of transactions of banks poses new challenges for banking regulators and supervisors. Many types of research are going in this area of banks big data processing, data analytics, and providing security for cross-border payments to mitigate the risks. Block chain is one such advancement for addressing the challenges in financial services. This chapter provides a brief overview of block chain usage, addressing the traditional issues and challenges for cross-border transactions.

INTRODUCTION

A small historic word called Usury meaning "lending at interest or excessive interest" the ancient historical records show the proof, that it has been practiced in various parts of the world. Subsequently changed its form substantially due to change in various traditions, institutions and social reforms on moral, ethical, religious and legal grounds. The Vedic texts of Ancient India (2000-1400BC), has the earliest of such

DOI: 10.4018/978-1-5225-9742-1.ch010

record. The Indian religious manuscript of Jain (1929) period records the oldest known references to usury and gives an outstanding summary on Indigenous Banking in India(Visser & Mcintosh, 1998). Since then there were many constitutional changes, amalgamations and various recommendations of Committees(RBI, 1998) and Commissions(Reserve Bank of India, 2017) drawn by the Reserve Bank of India (RBI) right from its establishment("Reserve Bank of India - History," 2019) on March 6, 1934. The transformation of banking from a primitive stage to the latest modern trends in India has no parallel in world history. India got its long history of having both public and private banking("Chapter - 5 Recent Developments in Banking Sector in India," 2007). The tremendous increase in the tempo of economic activities paved the path in the growth of the volume and complexity of banking activity. The Banks in India have established themselves by taking new tasks in expanding their geographical presence, functional heterogeneity, and personal portfolio services thus making them transformed from 'Class banks to Mass banks'. This has been realized by Computerization which is as an indispensable tool for improving the efficiency of the work environment in a better way and in ensuring the faster customer service, with better control systems. Innovations such as telephone lines, credit card systems, the internet, and mobile technologies have promoted the convenience, speed, and efficiency of transactions while shortening or even eliminating the distance between the customers and banks. Over 80% of the funds flowing through banks which are the most dominant segment of the financial sector, requires the following primary functions: (i) Operation of a payment and settlement system, (ii) Mobilization of savings and (iii) Allocation of savings to investment projects. The growth of the economy as a whole depends on the smooth functioning of financial markets, individual remittances, financial inclusion which is an integral part of Payment and settlement systems(Chaum, 1983). The oversight of payment and settlement systems over the years has often been as a critical function of the central bank contributing to the overall financial stability, along with prudential supervision (which indeed a function of an independent bank or its supervisory authority). Worldwide, the trend has been to recognize and strengthen the role of the central banks in ensuring financial stability. Reserve Bank of India (RBI), as a regulator and under its powers vested by the Payment and Settlement Systems Act, 2007 (PSS Act) sets the necessary framework through an advisory committee in order to regulate, and to ensure the safe, secure and efficient operations of different types of payment system operators to meet the varied social needs(RBI, 2018). All these wide networks of operators under payment systems in the country are strengthened by technological infrastructure such as electronic funds transfer, centralized funds management system, structured financial messaging solution, and negotiated dealing system with a move towards Real Time Gross Settlement (RTGS). Payment Systems in India have grown in a manner which is characterized by a few operators like National Payments Corporation of India (NPCI) – National Financial Switch (NFS), Cheque Truncation System (CTS(Delhi, 2014)), Immediate Payment Service (IMPS), Unified Payments Interface (UPI)-including Bharat Interface for Money (BHIM), National Unified USSD (Unstructured Supplementary Service Data) Platform (NUUP), National Automated Clearing House (NACH), Aadhaar Enabled Payment System (AePS) doing a wide array of payments and settlements(RBI, 2018).

In spite of these advancements, many business transactions still remain costly, vulnerable and inefficient may be due to the following hurdles(Schaechter, 2002):

- Physical cash is being used in local transactions and for relatively small amounts
- The duration for transactions and its settlement may be long
- Limited transparency and inconsistent information in the transactions hindering the efficient movements of funds