

Chapter 2

Redefining Trust and Disinter–Mediation With Blockchain in E–Governance

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ABSTRACT

Blockchain technology (BCT) is becoming a common language across diverse geographical domains. BCT attempts to solve the fraud issues involved in financial transactions and government operations. E-governance is a convenient platform providing services to all connected citizens and inter-government sectors. Traditional centralization issues are addressed by decentralizing the stakes, keeping the transactions transparent on an open ledger–BCT. It works on the notion of disintermediation eliding the middle layers with the highest trust level. It can contribute to various e-government sectors, namely agriculture, property registrations, supply chain management, tax calculation, etc. BCT application for agriculture supply change management can provide assistance in crop plantation and delivery records. It can bring transparency in land registrations and tax management by maintaining immutable land records and simplified tax management preserving trust between various parties through smart contracts. This chapter focuses on BCT approaches for secured governance.

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INTRODUCTION

Blockchain technology (BCT), referred broadly as a distributed and fixed ledger system, tracking the transaction details and data interchange among the decentralized network is one of the assured technologies for the future. BCT employs the notion of disintermediation wherein, the middle layers are completely elided with the highest level of security and confidence. Therefore, it saves time, money, and provides direct benefits to the users with ease.

Blockchain is the next big attestation in the growth of Industry providing an easier platform to complete the tasks without interposing third-party applications. BCT threads multiple transaction blocks which are connected with each other. In BCT, an addition of a new block is based on the following events:

1. Triggering the transaction or multiple transactions:

The transaction activity is bundled in the block along with the transaction information.

2. Transaction verification: Confirm the transaction details such as date/time, amount, asset, ownership, and the transaction size.
3. Store the transaction on the block: Post verification, the transaction is recorded on the block.
4. Hash the block: A unique hash code is assigned to each block and is finally added to the chain of the blocks and is publicly visible.

BCT makes every person accountable for the work they do and avoids any disputes among them. BCT can contribute to various sectors namely, Healthcare, Agriculture, Property and vehicle registrations, Supply Chain Management, Digital Identity, Energy Markets, Financial services such as banking and tax calculation, content management covering the working of land and vehicle registration, and many more as shown in Figure 1. Every sector works on the tri-stage principle which comprises- managing the trust consent between stakeholders, exchanging data, and formulating the indices for further referral.

The extensive umbrella that can be enclosed in BCT is e-governance. E-Governance is a strong and convenient platform that provides government services to all connected entities like citizens, public sectors and even inter-government sectors. E-Governance includes services, as shown in Figure 2, are related to client property dealings, public surveys and census data management, financial and tax records, human resource management, etc (Moon, 2002). The major stakeholders or entities involved in the implementation and execution of these services majorly include government officials, authorities in the form of an automated system governed by local laws, citizens, other parallel ministries and third-parties like financial sectors, vendors and contractors. Currently, the e-Governance framework supports the government-intermediate-citizen model of communication for exchanging information, for doing transactions that may or may not involve financial transactions. At every level, however, this model proves expensive to citizens in terms of delay and financial overburden. Secondly, the trust involved in these transactions may be compromised in lieu of middlemen involved.

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