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### THE USE OF BLOCKCHAIN TECHNOLOGY TO REDUCE INTERNAL FRAUD WITHIN NORTH AMERICAN BANKING INSTITUTIONS

This research paper focuses on the implementation of blockchain technology within North American banking institutions to mitigate internal fraud. The research methodology was comprised of a literature review providing an overview of internal audit activities within financial institutions, coupled with an analysis of blockchain technology. Furthermore, the literature review aimed at identifying an appropriate blockchain platform for financial institutions. Subsequently, applicable security frameworks and publications were applied to generate internal auditing recommended practices. These recommended practices were subsequently compiled into a proposed set of audit guidelines for North American banking institutions. The guidelines were simulated thereafter for validity, through a pertinent open source permissioned blockchain platform called MultiChain. The MultiChain platform served to implement a private, permission-based blockchain network, with the audit guidelines assessing

areas of transaction processing, asset transfers and smart contracts. As such, the proposed research deliverable may be utilized by information system audit teams to conduct more effective fraud audits due to the immutable audit trail nature of block technology.

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