

CAN BLOCKCHAIN TECHNOLOGY PREVENT VOTER FRAUD?

Every citizen should have the right to vote and the right to legitimate, secure elections. Is blockchain the future to ensure this right?

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Introduction

The rising threats to global infrastructure and automation have created a crisis in communication. For example, when the 2016 US Presidential election was targeted by the Russian government, the strength and legitimacy of the American electoral system suffered a major setback. Therefore, it is our contention that archivists should encourage bigger investments in new technologies in order to organize, arrange, and describe electronic voting records and, at the same time, attempt to maintain the integrity of the records.

It is our contention that Distributed Ledger Technology, better known as blockchain, is a viable solution in protecting the authenticity of electronic voting records. Blockchain is "a distributed database or ledger that is shared among the nodes of a computer network. As a database, a blockchain stores information electronically in digital format." However, as with any emerging technology, there are downfalls - especially financial - but the implementation of this technology will lead to more trusted information centers.

SWOT Analysis

Strengths

Ciphertext authentication
Interference prevention
Secured communications

Opportunities

Improved digitization
Diversified innovation
Maximizing efficiency inexpensively



Weaknesses

Financial burden
Long-term investment
Deficient interoperability between
distributed systems and legacy
systems

Threats

Compatibility issues
Record retention
Hacking (low risk)

Methodology

Comparative literature review of current implementations of Blockchain technology in the healthcare industry. Analysis of the strengths, weaknesses, opportunities, and threats of blockchain implementation to electronic voting records management.

Selected References

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Findings

Based on the models of blockchain being implemented in the health care industry, we suggest the following in developing blockchain technology for electronic voting records management:

- Consortium
- Proof of Work (POW)
- Ethereum or Hyperledger

Conclusion

Our research evidences the potential benefits of the implementation of blockchain for the management of voting records:

- Establish trust in the archive
- Enhance security of information
- Promote legitimacy of records

Drawbacks:
Potential for 51%
attacks?

Further Research

- Increase support for an electronic voting calculations and preservation program by partnering with the National Archives
- Build a dedicated team of information professionals to investigate viable and sustainable solutions for electronic voting records management
- Implement a 5-year plan to develop a program that will authentically preserve the calculation of election results