Blockchain Research-Paper Summary Report

Towards a systematic understanding of blockchain governance in proposal voting: A dash case study

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Digitized voting enabled by blockchain has created a new class of governance systems with **inherent transparency** and **immutable properties.**

The **benefits** of such a system are: **security** and **transparency** (blocks are added sequentially)

One such entity is **Dash,** the first crypto currency to establish on-chain governance through the establishment of a **decentralized autonomous organization (DAO) and masternode protocol.**

The paper does a unique analysis drawing attention to:

- **Implementation, security,** and **integrity challenges** facing blockchain technologies with respect to their governance structure in proposal voting.
- Showcases analytical **techniques** that can be used to **analyze on-chain voting systems.**

Currently, blockchain technologies for electronic voting are being employed as a **means of governance for on-chain voting, recording keeping and storage.**

In 2018, **Broadridge Financial Solutions** successfully conducted the first **proof of concept** by adopting **blockchain proxy voting** to allow **investors** to **vote remotely** during their annual meeting.

The idea of **governance in crypto currency** comes from the concept of gaining **consensus** or **multi-party validation of mined blocks.** The aim is to **coordinate decision making** across multiple entities and **ensuring** all aspects of **network sustainability** are being addressed.

To do this governance-enabled crypto currencies will get **proposals from** the **public** and then leverage their decentralized **voting**

structure **to approve** the **most beneficial** to the overall mission by a **majority vote.**

Due to the lack of a fully functioning governance structure, performing **analysis** on the **vulnerability** and **integrity** of blockchain voting on a **large scale** is **not possible** for **Bitcoin or Ethereum.**

Dash (a 2014 Bitcoin fork):

- Has a modified network protocol that leverages static Internet Protocol (IP) nodes
- Nodes used to perform additional on-chain functions – proposal voting.

Analysis can now be performed on the characteristics and trustworthiness of on-chain voting. Research has been performed on **decentralized governance** enabled through **DAOs**(Decentralized Autonomous Organizations).

DAOs are:

- Member-owned communities without a central leader.
- They place their trust in blockchain technologies through **smart contracts** (governing body) they build together on the block.
- Smart contracts allow **automatic execution of code** on meeting a criteria, therefore **not needing human intervention.**

However, there has not been an analytical approach to systematically investigating the mechanisms of a DAO from a governance perspective.

Dash governance as a DAO:

- Able to solicit proposals publicly
- Dash's DAO network utilizes an API – enables user engagement through the proposal.
- **Request for proposal** process is **initiated** where potential projects are submitted to the network via API commands **sent** directly **to the blockchain** from a **wallet address containing at least 5 Dash.** This 5 Dash acts to **thwart network abuse** by those who wish to spam or perform grieving actions against the community. The following information is required to create a proposal:
  - **proposal-name:** a proposal label
  - **URL:** a link containing the proposal details
  - **payment-count:** the length of payment
  - **block-start:** the requested start of proposal payments

- **dash-address**: the wallet address to receive payments
- **monthly-payment-dash**: the requested payment amount

The **5 Dash fee is non-refundable,** meaning that if a proposal is not approved for funding, the creator does not receive their 5 Dash back. Dash's DAO **distributes voting responsibilities** across multiple entities **via its masternode protocol. Masternodes** are special nodes that **facilitate additional features** on the network.

Full-node creation:

- The remote server **downloads** the **Dash blockchain, forms** a **link** with the **other full nodes** on the network.
- A **wallet address** is then **created** on the full node, **funded** with **1000 Dash** by the potential masternode operator.
- The final authentication commands are sent to the blockchain.

The governance of Dash is different from Bitcoin since users can **only vote if they own at least 1000 Dash.** This is analogous to an organization requiring a certain number of shares before allowing voting.

Dash Central is a website for Dash masternode monitoring and budget voting.

To reiterate, only **5 Dash** are needed **to submit a proposal,** but **1000 Dash** are needed **to be able to vote.**

For proposal voting, the only **options** given are **"Yes", "No",** or **"Abstain".**

Once a proposal is **formally submitted** and its record is etched as a **governance object** on **Dash's blockchain.**

The voting procedure requires the net total of yes votes to be **greater than 10%** of the **total masternode population at the time votes are counted.**

Each **voting period** extends precisely **16616 blocks** (approximately one month).

A special block called **Superblock** is the term for a blockchain block that **distributes both mining rewards and proposal funding.** At the conclusion of voting, proposals that successfully pass have their funds dispersed according to the terms defined in the project.

Thus, **in contrast to traditional governance systems,** with the implementation of blockchain technology, the **need to vote in person is no longer necessary.**

Dash's DAO is a fullyfunctional example that successfully showcases remote decentralized governance and is fully transparent and secure by placing the votes on an immutable blockchain.

The benefits this system provides are in its honest behavior so that any conflicts of interest are addressed and can be mitigated.

REFERENCES:

[1] [Towards a systematic understanding of blockchain governance in proposal voting: A dash case study – ScienceDirect](#) Lawrence Mosley , Hieu Pham, Xiaoshi Guo, Yogesh Bansal, Eric Hare, Nadia Antony Blockchain: Research and Applications 3 (2022) 100085.