*National College of Ireland Academic Internship*

< Voting DAO & Funding Pool Web3 Decentralized Blockchain System >

Initial Business Case

*VERSION <1.0>*

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| **Project Name:** | Voting DAO & Funding Pool Web3 Decentralized Blockchain System | | |
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Note: This document is only valid on the day it was printed

**Revision History**

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| **Revision Date** | **Previous Revision Date** | **Summary of Changes** | **Changes Marked** |
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**Approvals**

This document requires the following approvals. A signed copy should be placed in the project files.

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**Overview**

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| **Purpose** | A Business Case is used to document the justification for the undertaking of a project, based on the estimated costs (of development, implementation and incremental ongoing operations and maintenance costs) against the anticipated benefits to be gained and offset by any associated [risks](https://www.stakeholdermap.com/prince2/prince2-glossary-R-records.html#risk-1).  The outline Business Case is developed in the Starting up a Project process and refined by the Initiating a Project process. The Directing a Project process covers the approval and re-affirmation of the Business Case.  The Business Case is used by the Controlling a Stage process when assessing the impacts of issues and risks. It is reviewed and updated at the end of each management stage by the Managing a Stage Boundary process, and at the end of the project by the Closing a Project process. |
| **Content** | Executive Summary 3  Reasons 3  Business Options 3  Expected Benefits 4  Expected Dis-benefits 4  Timescale 4  Costs 5  Investment Appraisal 5  Major Risks 6 |
| **Advice** | *The Business Case is derived from the: Project mandate and Project Brief – reasons; Project Plan costs and timescales; The Senior User(s) expected benefits; The Executive value for money; Risk Register and Issue Register.*  *The Business Case can take several formats, including Document, spreadsheet or presentation slides; Entry in a project management tool.*  *The following quality criteria should be observed:*   * *The reasons for the project must be consistent with the corporate or programme strategy* * *The Project Plan and Business Case must be aligned* * *The benefits should be identified and justified* * *It should be clear how the benefits will be realized* * *It should be clear what will define a successful outcome* * *It should be clear what the preferred business option is, and why* * *Where external procurement is required, it should be clear what the preferred sourcing option is, and why* * *It should be clear how any necessary funding will be obtained* * *The Business Case includes non-financial, as well as financial, criteria* * *The Business Case includes operations and maintenance costs and risks, as well as project costs and risks* * *The Business Case conforms to organizational accounting standards (e.g. break-even analysis and cash flow conventions)* * *The major risks faced by the project are explicitly stated, together with any proposed responses.* |

### Executive Summary

The goal of this project is to deploy a decentralized autonomous organization (DAO) voting system using web3 blockchain technology and financial pool for instant transactions of money to anyone anywhere in the world in speed of light with no need of bank or any third party to open the gate for a better way of secure, transparent, public, and community driven decisions making.

Leveraging non-token weighted voting system and mechanism similar to quadratic voting approaches, the reason of those choices is to enhance voter participation, prevent sybil attacks, and decentralize governance in as scalable way as possible.

The return on investment is reflected on long term cost savings from automations and money transactions, and because everything is public this will increase user trust on how we earn money.

Integrating snapshot of off chain voting with on chain execution will ensure rapid development and therefore will reflect to rapid adoption.

### Reasons

The traditional organization governance systems (web2) are centralized, ambiguous, and slow to adapt, also, sending money requires an account with the bank and the bank controls the money as they can freeze it, decline transactions, slow, expensive, and requires a lot of confirmations and hassle and there are around 1.7B people with no bank accounts and they can transact money.

This project enables the transition to decentralized governance aligned with web3 principle, which means if participant vote the participant own their vote, the same thing with their money, when participant hold money in their web3 wallet that means only the participant can control that money as they can send and receive money anywhere in the world in speed of light through smart contracts and blockchain technology, this should improve user experience, empower the users and participants, and cost efficient as transaction will be finalized in less than a cent, with this cost stronger community engagement will be created and eliminating the need for centralized intermediaries.

### Business Options

1. Do nothing:

* The voting system continues with centralized or manual decision-making processes and the transactions will continue with the centralized slow expensive banks.
* Risks of missing on innovation opportunity that will release us free from centralized monopolies and create user owned web (web3) instead of centralized web (web2).

1. Do the minimum:

* If we do the minimum, then the project will lack to verification aspects and will be depended on trust instead just like web2.
* For example, if we implement a basic governance system without smart contract automation that deployed on decentralized blockchain then we will end up with limited transparency and centralized but with moderate improvements.

1. Do something (DAO project that built already):

* Develop smart contract power DAO voting platform with integrated off chain voting (snapshot) and on chain execution.
* The project will align with decentralized governance aims and create value over time.
* This kind of structure depends on verification and not trust, hence named trust-less.

### Expected Benefits

The benefits expected are in two categories, quantitative and qualitative as it is better if we measure and express the expected benefits in numeric terms meanwhile, we can put descriptive and subjective and focusing on intangible aspects such as increase of improvements and efficiency.

I is good to mention that the numbers and qualitative I will mention are subject to changes if the future circumstances change.

Those number can be changed and are subjective and different from person opinion to another.

* Quantitative:
  + Up to 50% reduction in governance-related operational costs via automation
  + Measurable increase in stakeholder pool finance participation (target: 30% engagement increase over 6 months)
  + Transparent voting and proposal tracking, ensuring data integrity and auditability
* Qualitative:
  + Greater community trust through open-source smart contracts
  + Alignment with decentralized and user-owned platform goals
  + Improved reputation as a Web3-native, transparent organization

Tolerances:

* ±10% participation variation (This number can be lowered if of non-token weighted voting power implemented correctly)
* ±15% in gas and infrastructure costs (This number can be lowered if different blockchain that is cheaper to be used such as SUI or SOLANA)

### Expected Dis-benefits

* Complexity onboarding: some people still struggling understanding what crypto is, this will make them having difficulties to interact or use web3 wallet and decentralized interfaces, then will lead to people to give up on using the project if we don’t take the required measures.
* Productivity dip: during the transition from traditional methods to decentralized governance big data might be expensive to load and store them forever on the blockchain ledger, this might create productivity problem in future when the data gets bigger when the project gets adoption.
* Security: if the project gets adopted this will require deploying more smart contracts on the blockchain, but then the audit and security cost will increase.
* Voting mechanism risks: as the project is based on non-token voting mechanism which means the invested members get the same voting power with non-invested members, which might create investments problems, this problem is fixable but costly.
* Transactions: sending money to anyone anywhere in the world in speed of light might be eye opening technology for bad users to achieve illegal things or harm other people which might end up turn the project into a target.

### Timescale

1. Project Duration:

* On-chain executions: 1 month [here](https://github.com/EskandarAtrakchi/DAO-web3-voting-system/tree/master/backend)
* Full DAO rollout with quadratic voting + feedback cycle: 5 weeks [here](https://github.com/EskandarAtrakchi/DAO-web3-voting-system/blob/master/backend/contract.sol)
* Full functionable frontend with full solidity contract integrations: 1 month [here](https://github.com/EskandarAtrakchi/DAO-web3-voting-system/blob/master/components/web3-provider.tsx)

1. Benefits Realization:

* Begins within the first 1 months of On-chain execution usage, with measurable engagement and participation data available by month 2.
* The test blockchain was available to build the whole project, this is a great benefit because this means that future improvements can be made to test blockchain and will cost less than the main blockchain which requires gas fees for every transaction.

### Costs

The only cost I have put is my time and energy on this project, but I will create some estimations just like I have done above to estimate if this project were to be developed for an actual production how much would it cost knowing those number can be changed and are subjective and different from person opinion to another.

1. Development:

* Smart contract development: ~$4,000
* Frontend & integration: ~$2,500
* Testing, auditing, and gas fees: ~$2,000

1. Operations:

* Hosting, monitoring, and maintenance: ~$300/month
* Ongoing smart contract audit/updates (annually): ~$1,000

1. Finding:

* Initial grant and/or community treasury allocation

### Investment Appraisal

I will try to estate the ROI, payback, NPV, IRR, and funding source. It is good to know those numbers are just estimations by me speculating on (if the project were to be deployed for an actual production)

Those number can be changed and are subjective and different from person opinion to another.

1. ROI: Expected return through operational cost savings and increased user contribution outweighs setup costs within 6–8 months
2. Payback Period: ~7 months
3. NPV & IRR: Based on projected savings and adoption, the NPV is positive with an IRR >20% over a 2-year horizon
4. Funding Source: Internal development fund and potential Web3 grants

Important definitions:

1. NPV: represents net present value which means the net of future cash flow from the project and can be calculated as

NPV = Revenue – Cost

1. IRR: represents the internal rate of return which the project breaks even over time as when the project’s IRR is over 20% this means the project is highly attractive because it is better than parking the money in most traditional fund investments.

IRR ≥ 20%

1. ROI: represents the return on investment which means the % that the project can generate as result of its activities

### Major Risks

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| Risk | Impact | Mitigation |
| Smart contract vulnerabilities | High | Audits, bug bounties, and OpenZeppelin library use |
| Low user engagement | Medium | Onboarding tutorials, incentives |
| Sybil attacks | High | Integration of identity checks and non-token voting mechanism |
| Regulatory uncertainty | Medium | Legal review and off-chain voting (Snapshot) as fallback can be implemented in future versions. |
| Token centralization | Medium | Explore identity-based or soulbound tokens in future versions |

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|  |  | *Designed for:* | | | | | *Designed by:* | | *Date:* | | *Version:* |
| **Business Model for DAO** | | *Designed for Web3 DAO Voting System* | | |  | | *Designed by: Eskandar Atrakchi* |  | *Date April 15, 2025* |  | *Version: 1.0* |
|  |  |  | | | | |  | |  | | |
| **Key Partners** | **Key Activities** | | **Value Propositions** | | | **Customer Relationships** | | | **Customer Segments** | | |
| * Snapshot (off-chain voting) * OpenZeppelin (smart contracts/security) * IPFS/Pinata (file storage) * Blockchain providers (for example, Ethereum, Polygon) * Wallet providers (for example, MetaMask and Trust Wallet) | * Smart contract development * Proposal creation & management * Voting integration (on/off chain) * Governance automation * Community engagement | | * Transparent and tamper proof voting * Community led decision making * Quadratic voting to prevent centralization * Treasury tracking for trust and clarity * Accessible governance via wallet-based login | | | | * Community social media or contact us/forum support * DAO member onboarding * Proposal feedback via form * Notifications and updates via web3 wallet or email | | * DAO contributors and members * Token holders via finance pool * Web3 communities can also be participants and make their own proposals * Early-stage DAOs looking for governance tools | | |
| **Key Resources** | | **Channels** | |
| * Smart contracts on EVM chain * Governance framework and frontend app * Voting engine (Snapshot integration) * GitHub * Developer | | * DAO frontend application (React) * Web3 wallet connections (for example, MetaMask and Trust Wallet) * GitHub for developer community * Community platforms can be created (for example Discord, Twitter, and Facebook) * DAO portals & aggregators (for example DAOlist) | |
| **Cost Structure** | | | | **Revenue Streams** | | | | | | | |
| * Smart contract development & audits * Hosting (frontend, IPFS, APIs) * Snapshot or infra APIs (if premium) * Community management & marketing * Maintenance & feature updates | | | | * DAO setup fees (one-time) * Subscription-based governance support * Custom DAO integrations (consulting) * Premium features (for example analytics dashboard, multi-signature integrations on web3 wallet) | | | | | | | |