DAOs & Governance: A Visual Introduction

Standalone Mini-Lecture

"The future of organization is decentralized" – Vitalik Buterin

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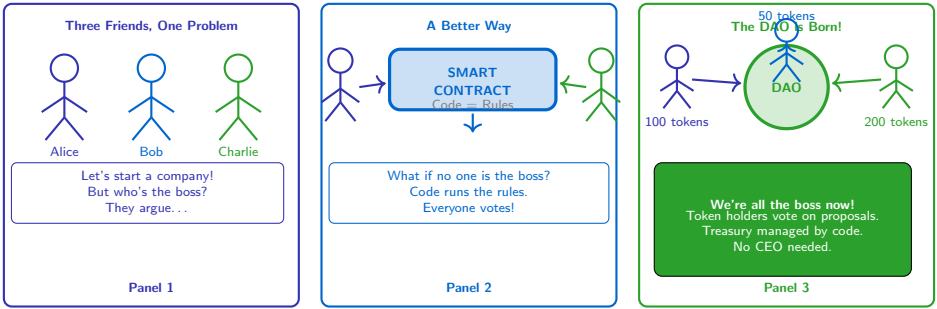
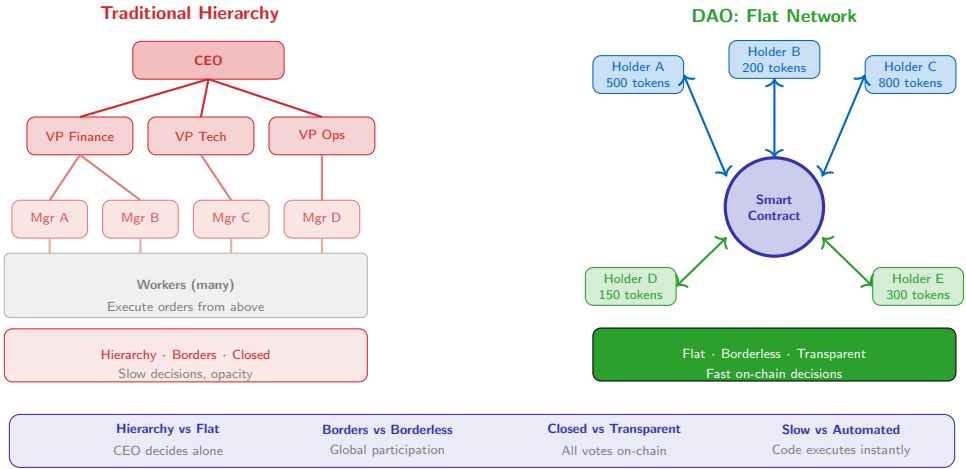
This mini-lecture covers Decentralized Autonomous Organizations: how they work, governance mechanisms, treasury management, attacks, and real-world examples.

What is a DAO?



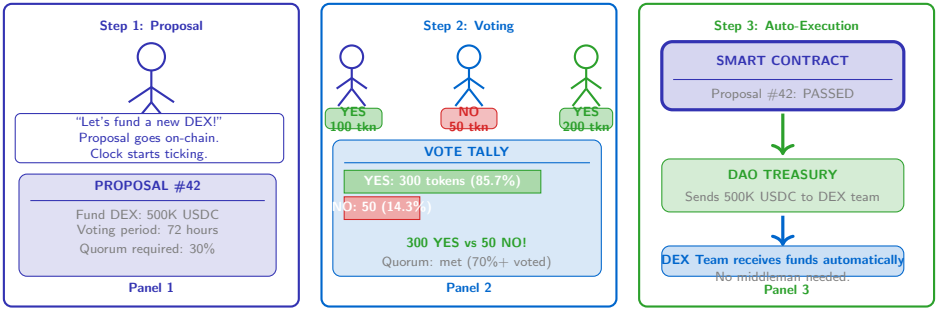
DAO = Decentralized Autonomous Organization. Smart contracts replace management: rules are encoded in code, decisions made by token-weighted voting.

Traditional Organization vs. DAO



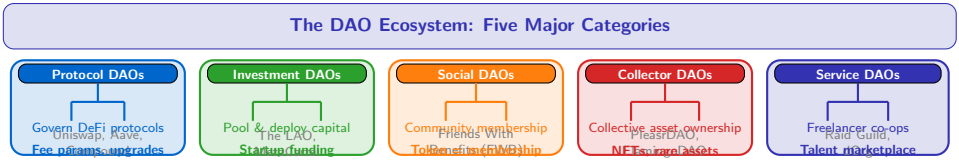
Traditional organizations rely on hierarchical authority; DAOs replace the hierarchy with transparent, code-enforced rules and token-weighted democratic voting.

How Voting Works in a DAO



DAO governance: anyone can submit a proposal; token holders vote (token-weighted); smart contracts automatically execute approved proposals – no human intermediary.

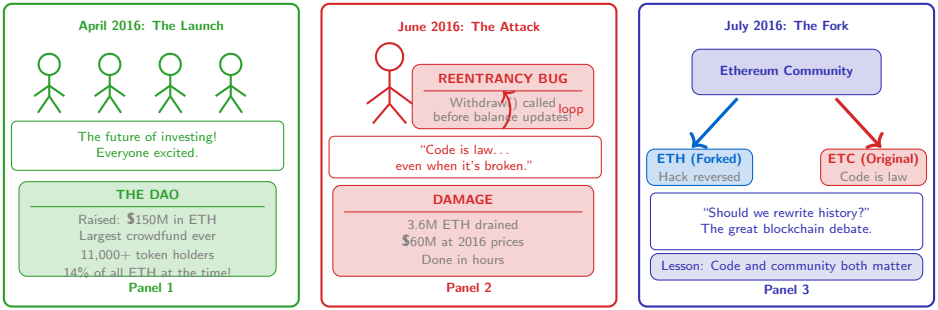
Types of DAOs



Type	Primary Goal	Token Use	Key Challenge	Example TVL
Protocol	Govern protocol params	Voting weight	Voter apathy	$5B+
Investment	Deploy pooled capital	Profit share	Securities law	$100M+
Social	Build community	Access/membership	Engagement decay	Varies
Collector	Own rare assets	Fractional ownership	Asset valuation	$50M+
Service	Coordinate freelancers	Reputation	Quality control	N/A

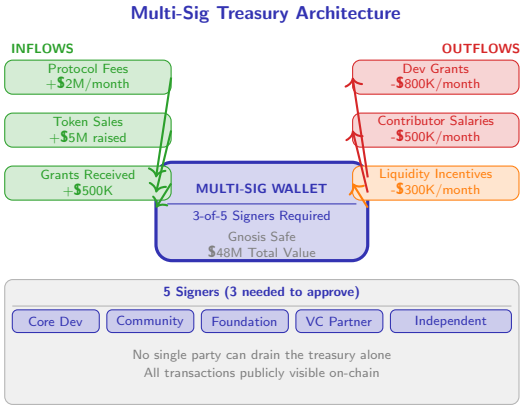
DAOs are not one-size-fits-all. Protocol DAOs govern DeFi, investment DAOs pool capital, social DAOs build community, collector DAOs own NFTs, service DAOs coordinate work.

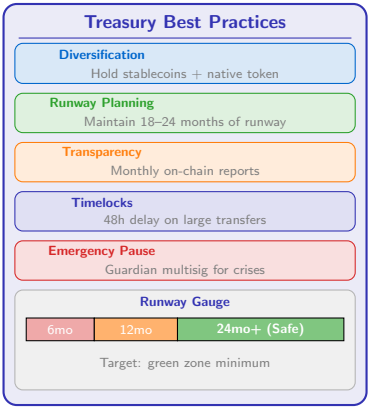
The DAO Hack of 2016: A Defining Moment



The 2016 DAO hack drained $60M via a reentrancy vulnerability. Ethereum hard-forked to reverse the theft, splitting the chain into ETH and ETC – a pivotal moment in blockchain history.

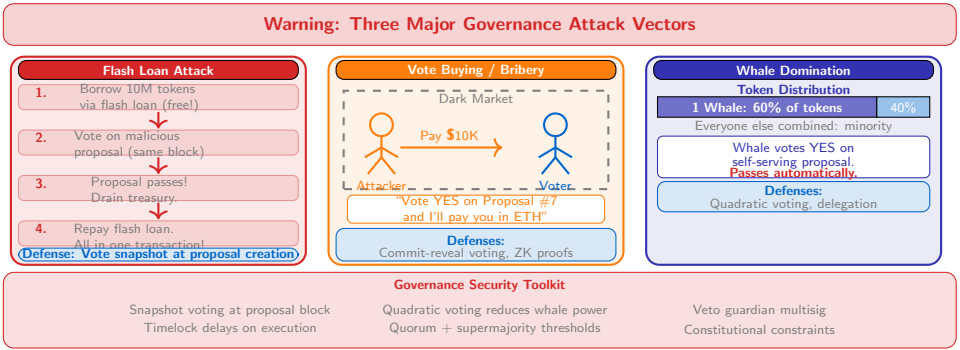
DAO Treasury Management





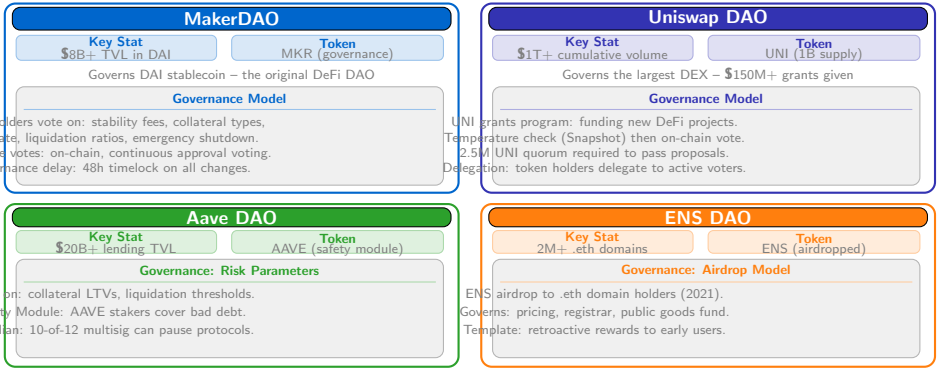
DAO treasuries use multi-signature wallets (e.g., Gnosis Safe) requiring multiple approvers per transaction, providing security through distributed control and full on-chain transparency.

Governance Attacks: Real Threats



Governance attacks are not theoretical – flash loan governance attacks have drained millions. Defense requires: vote snapshots, timelocks, quadratic voting, and quorum requirements.

Famous DAOs: Real-World Examples



MakerDAO, Uniswap, Aave, and ENS DAO are among the most successful DAOs, collectively governing billions in assets and setting governance design patterns for the industry.

Key Takeaways

1 Smart Contracts Replace Management
DAOs encode organizational rules in code: token-weighted voting replaces hierarchical authority.

2 Governance Mechanisms Are Critical Design Choices
Simple majority, quadratic voting, conviction voting – each trades off efficiency vs. fairness.

3 Treasury Management Requires Discipline
Multi-sig wallets, diversification, timelocks, and 18–24 month runway targets protect DAO assets.

4 Governance Attacks Are Real Threats
Flash loans, vote buying, and whale domination require defensive design: snapshots, quorums, and timelocks.

5 DAOs Are Maturing Into Legitimate Structures
From the 2016 hack to MakerDAO's $8B+ TVL – DAOs have evolved from experiments to real institutions.

Next: Governance Mechanisms – Quadratic Voting, Conviction Voting, and DAO Legal Wrappers

DAOs are a new organizational primitive: transparent, borderless, and code-governed. Understanding their strengths and failure modes is essential for any blockchain practitioner.