

Cryptoeconomics

An Introduction

Agenda

1. Introduction
2. What are tokens?
3. What is a token economy?
4. 3Ds: Overview of how to create a token economy

Introduction

Blockchains and cryptocurrency will generate a new and better internet.

It will not be 'winner take all' like web 2.0

What are tokens?

Tokens as network incentives | Tokens as digital assets

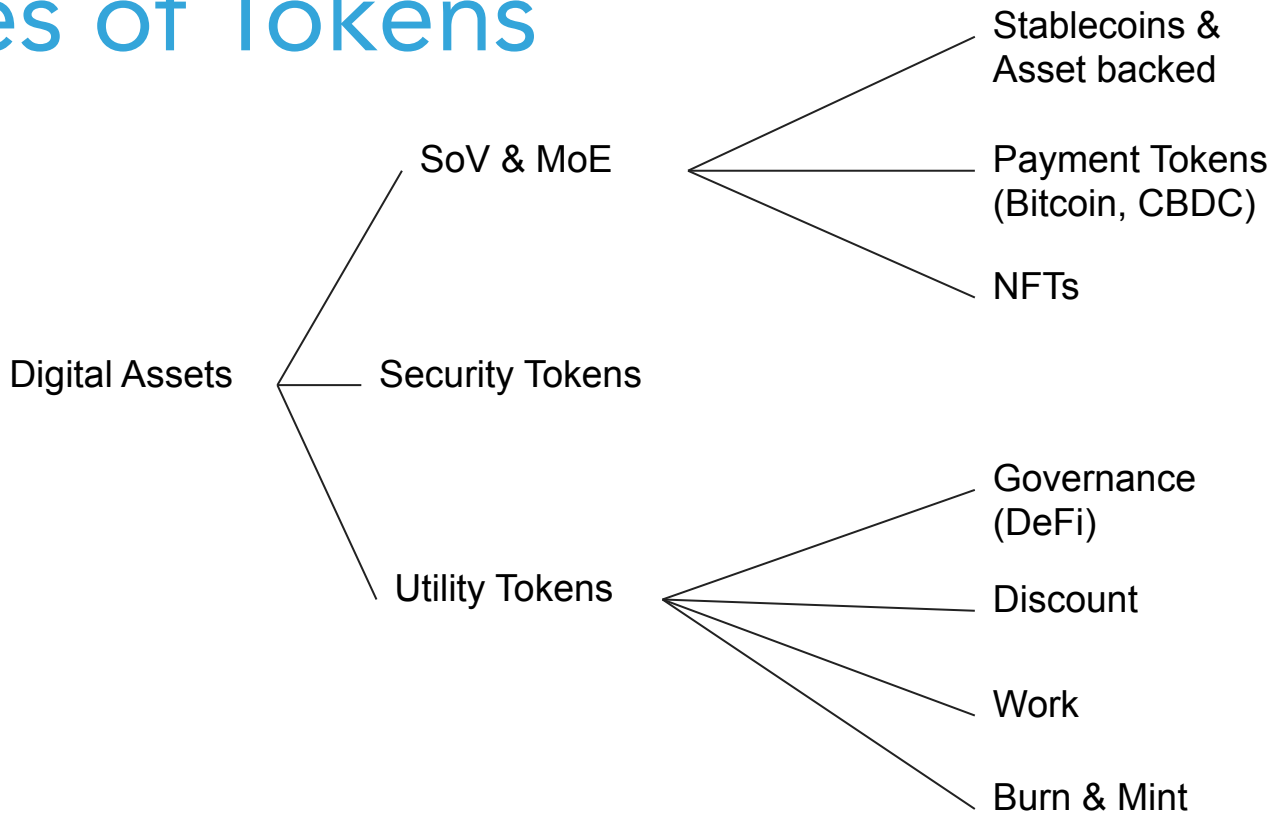
Also known as cryptocurrencies or coins

Characteristics:

Store of Value, Medium of Exchange, Unit of Account

Cryptographic, programmable

Types of Tokens



What is a token economy

Token economies are digital economies that reorganize and redistribute new forms of value by combining tokenized incentive systems with blockchain architecture.

These economies start out as crypto ecosystems which are decentralized networks engineered to align a secure and incentivized economic system.

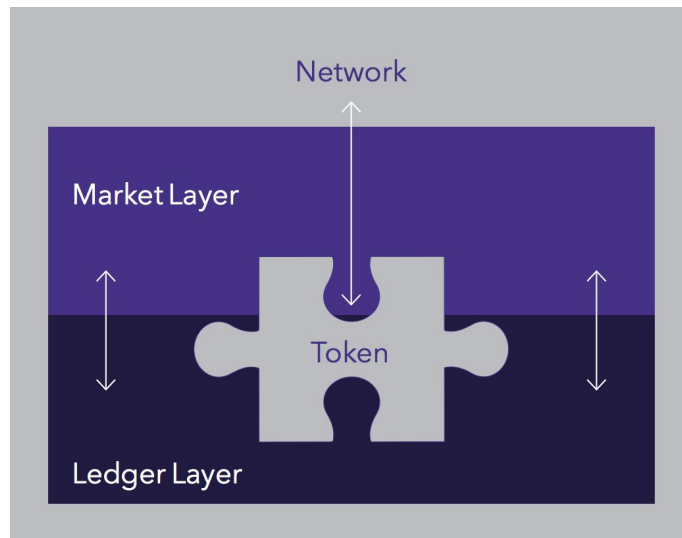
Once we have achieved economic alignment, token utilization, and network decentralization amongst network participants, only then can we consider such an ecosystem to be mature token economy.

What makes up a token economy

Tokens are the interface between the Ledger and Market Layer of a network.

A token economy consists of:

- ▶ Participants and stakeholders (token holders)
 - ▶ Speculators
 - ▶ Long term holders (utility)
- ▶ Coded rules and incentives
- ▶ Digital assets
- ▶ The real world



Tokens as business model innovations

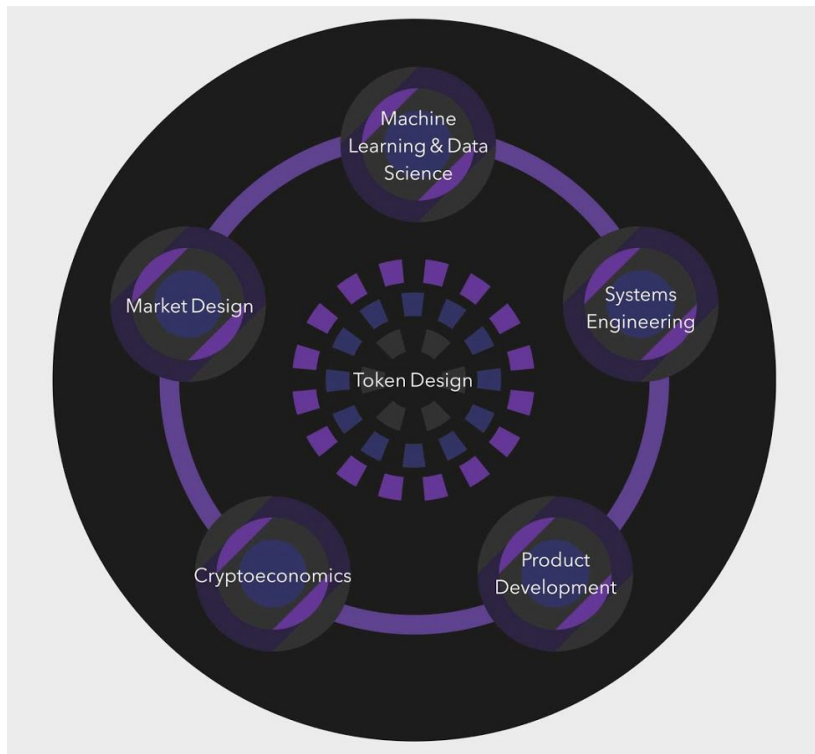
New Open Sourced Business Models

Combining tokenized incentive systems with blockchain architecture can create powerful open-source business models. For example:

- NFTs: Tokens can be used to “encapsulate intellectual property rights” and licensing rights for any asset.
- DeFi: The combination of tokens and smart contracts enables the production of zero marginal cost financial instruments, resulting in an explosion of financial experimentation.

But how do you go about designing them?

Multi Disciplinary Approach

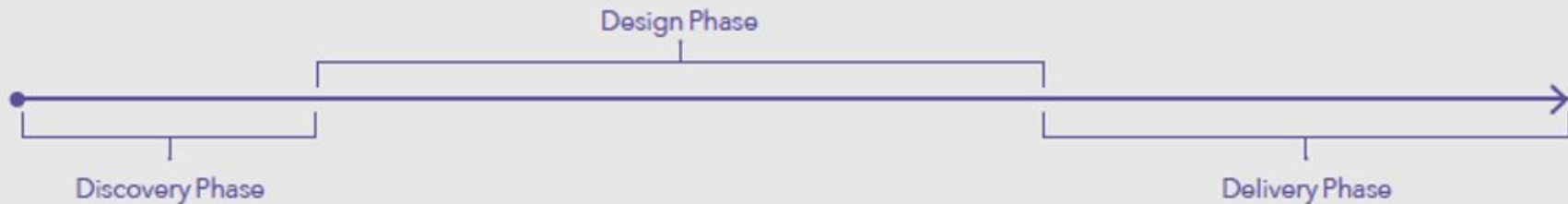


3 D's of Token Design

Discovery Phase: To determine the particular characteristics of a business model or ecosystem and why a token is needed in the first place.

Design Phase: Consists of making high level design choices, including governance structure, the mathematical model and its parameters. These need to be optimized for stakeholder incentives and the long term sustainability of the ecosystem.

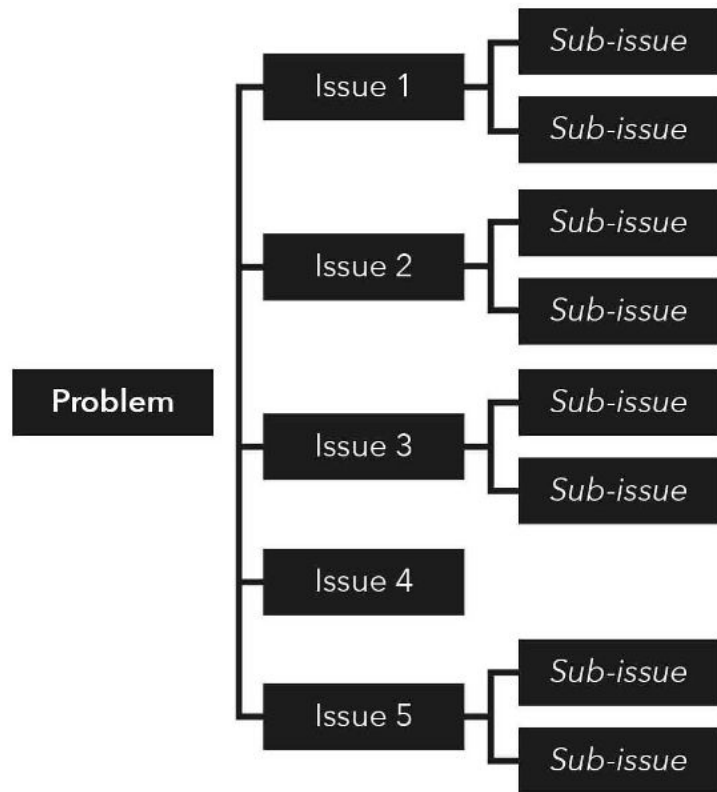
Deployment Phase: Comprises of validating and stress-testing the parameters before fully integrating into the network.



Discovery Phase

Problem Structuring

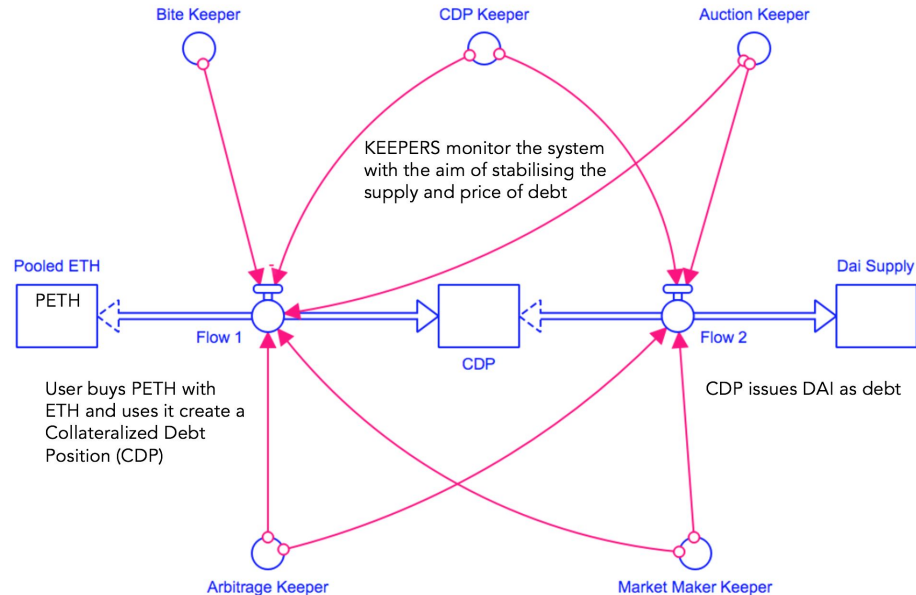
A token ecosystem is a highly complex system that requires structured to-down thinking to organize and prioritize challenges. Ex. MECE Tree.



Discovery Phase

Value Exchange Mapping

Helps visualize how value is created in order to translate design elements into a value exchange system among stakeholders.

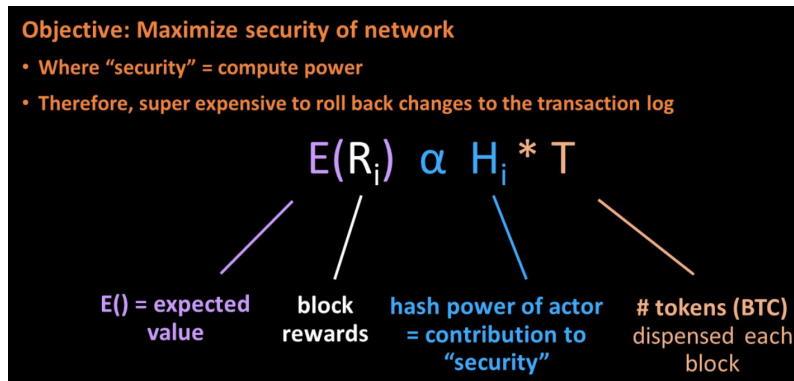


MakerDAO Keeper Value Exchange Mapping

Design Phase

Defining your objective

What is the high level objective of the network? Define a objective function for your network to guide all aspects of the token design roadmap.



Design Phase

Design choices

High level design choices must be made regarding cryptoeconomic primitives, monetary policy, and overall system design.

Cryptoeconomic Primitives

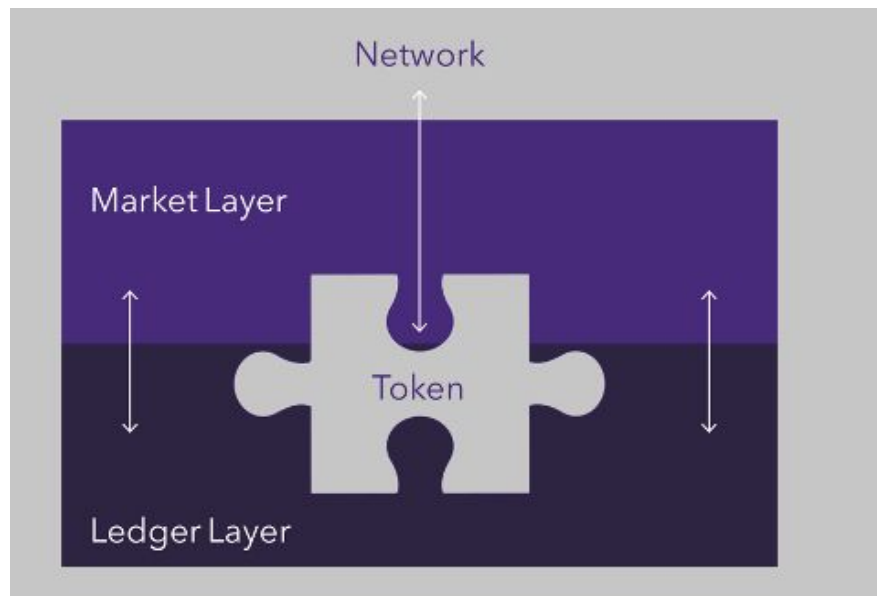
- ▶ Curation (TCRs, Markets)
- ▶ Proofs (PoW, PoS)
- ▶ Identity
- ▶ Prediction Markets
- ▶ Governance (DAOs)
- ▶ Price Discovery (Bonding Curves)
- ▶ Interoperability
- ▶ Staking

Design Phase

Token Network Fit

Analogous to product market fit.

Finding the correct token model means creating the incentives that are both desired by its stakeholders & required for the long term sustainability of the network.



MakerDAO Keepers: Incentive Analysis

Sufficiently incentivising actors in a network while optimizing for economic alignment is hard.

12 Month NPV results from Market Making Keeper simulation on MakerDAO

Margin = 0.5

Discount Rate (year) 0.025 %

Discount Rate (month) 0.002083333

Initial Investment 100 Dai

	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL
Revenue	\$10,701.58	\$10,701.58	\$10,701.58	\$10,701.58	\$10,701.58	\$10,701.58	\$10,701.58	\$10,701.58	\$10,701.58	\$10,701.58	\$10,701.58	\$10,701.58	\$128,419.00
Cost	\$12.23	\$12.23	\$12.23	\$12.23	\$12.23	\$12.23	\$12.23	\$12.23	\$12.23	\$12.23	\$12.23	\$12.23	\$146.80
Profit	\$10,689.35	\$10,689.35	\$10,689.35	\$10,689.35	\$10,689.35	\$10,689.35	\$10,689.35	\$10,689.35	\$10,689.35	\$10,689.35	\$10,689.35	\$10,689.35	\$128,272.19
NPV	\$10,567.13	\$10,544.95	\$10,522.82	\$10,500.73	\$10,478.69	\$10,456.70	\$10,434.75	\$10,412.85	\$10,391.00	\$10,369.18	\$10,347.42	\$10,325.70	\$125,351.93

Thank you!

Any questions or comments:

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