U°OS

Blockchain Protocol Translating Social and Economic Actions into Reputation

Built to bring distributed, transparent and scalable reputation system to the web.

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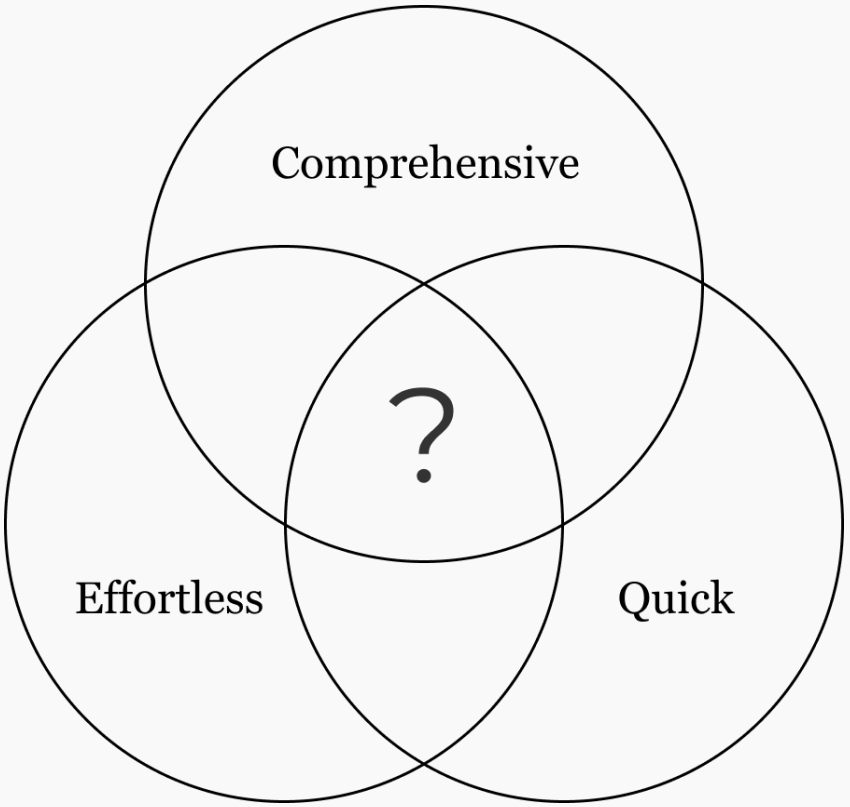
Introduction

Our world is becoming increasingly digitized and interconnected. Individuals carry out social and economic interactions online using their digital identity. While centralized networks tend to be held responsible for safe commerce and collaboration, there is no universal and distributed reputation system on the web. The absence of coordinates to quickly, effortlessly and comprehensively assess the trustworthiness of entities to deal with online is the reason why individuals and organizations prefer relying on middlemen despite the higher overhead costs.

Problem Statement

Despite the global digitization, the bottleneck of the digital economy is in collecting and processing the information to make a decision that requires trust. Individuals and organizations face the decision trilemma:



Decision Trilemma

Assessment of entities to deal with can not simultaneously be effortless, quick and comprehensive.
The absence of a universal and distributed reputation system makes the decision-making process slow and costly.

Solution

The U°OS reputation system scores digital entities based on the network's feedback.

It enables people and businesses to make comprehensive one-touch decisions that require trust. The reputation system translates connections between accounts into a unified reputation system using a modified NCDAwareRank algorithm.

Value Proposition

Velocity and Cost Efficiency for Economic Interactions Online

U°OS reputation system can be effortlessly integrated with any service or application such as payment systems, value exchange services, social platforms, etc. U°OS integration augments user experience with competitive gameplay elements by revealing reputation of digital entities.

The key characteristics of the U°OS reputation system are:

- **Transparency** — the blockchain-recorded data allows tracing causal links, which creates a holistic picture and increases trust to a digital entity;
- **Universality** — the system can be integrated into any existing application via robust API and OAuth and can be adjusted to a specific context;
- **Distributed nature** — algorithmic operation on the public ledger without belonging to any centralized authority;
- **Owned by user** — reputation (or social capital) is inseparable from a user account. Control over both belongs solely to a user by means of a private key
- **Privacy-friendliness** — users are not required to reveal their identity to use the system
- **Resiliency** — the protocol is immutable and censorship-resistant.

Technology

U°OS network protocol is based on EOSIO open source code.

U°OS inherits its key features:

- Zero-fee transactions
- Account system
- WebAssembly support
- Smart contracts execution
- Currencies and tokens support

and takes it a step further with:

- Social Transactions
- DPoI Consensus Algorithm
- Dynamic Emission Algorithm

Social Transactions

U°OS protocol has a specific transaction type called social. Social transactions allow the exchange of non-monetary value in a blockchain. For example, U°Community dApp uses the social transactions to upvote, downvote, publish content and follow or trust users — but this is only one of the countless potential use cases for social transactions. Social transactions along with economic ones are used to calculate Importance° of digital entities by calculator nodes - nodes that perform importance° score calculation and distribute calculated scores back to the network.

Delegated Proof of Importance

Importance°

Reputation is calculated with the help of DPoI algorithm is composed of the account's stake and socio-economic utility for the network, thus, this metric stimulates network growth via reward for the useful activity in the community.

DPoI consensus algorithm integrates the concepts of DPoS with the idea that social interactions naturally generate economic activity between individuals or organizations. DPoI directly and transparently measures user's social capital in the network with no middlemen involved.

Consensus is achieved with the help of delegates — i.e. block producers. Delegates are elected by the network participants. The power of vote is based on the **Importance°** rate of each voter.

Importance° is calculated using the following formula:

$$ri = (1-\omega a - \omega s)vi + \omega a \pi i + \omega s \sigma i$$

where vi is the stake volume index, πi is the financial activity index, σi is the social network activity index, and ωa and ωs are the weight coefficients, that determine the relative significance of each component of the user activity.

More detailed explanation of the Importance° calculation can be found in the section 2.1 of U°OS Yellow Paper.

NCDAwareRank

DPoI calculates social and economic contribution of an individual based on the incoming transactions to an individual's account.
The network uses an algorithm that takes into consideration the level of integration of the account in the general network, helping to protect the system from the botnet attacks. System of trusts, distributed by the users of the network, also augments the algorithm to prevent activity imitation.

Economy

UOS Token Model and Resource Usage

PLEASE NOTE: CRYPTOGRAPHIC TOKENS REFERRED TO IN THIS WHITE PAPER REFER TO CRYPTOGRAPHIC TOKENS ON A LAUNCHED BLOCKCHAIN THAT ADOPTS THE U°OS SOFTWARE. THEY DO NOT REFER TO THE ERC-20 COMPATIBLE TOKENS BEING DISTRIBUTED ON THE ETHEREUM BLOCKCHAIN IN CONNECTION WITH THE UOS TOKEN DISTRIBUTION.

UOS tokens constitute the core of U°OS crypto economy. They are used in the system in several ways:

- To allocate CPU and bandwidth resources, using staked token amounts. Only core UOS tokens can be used for CPU and bandwidth resource allocation.
- To purchase other resources, such as RAM and storage space, and perform other forms of financial transfers via smart contracts using unstaked tokens. Potentially, many types of tokens can be used for these activities.
- To vote for block producers and calculator nodes. The amount of staked tokens, owned by the account, contributes to the user's Importance° during the voting process.
- To increase the importance° score and receive the dynamic emission. Amount of tokens staked by the account directly influences the Importance° received by the user and the amount of dynamic emission.

Thus, staked core tokens are used for the resource allocation and play an important part in emission and importance° calculation, while unstaked tokens can be used in direct transfers.

Dynamic Emission

Dynamic emission is introduced to provide additional liquidity during network growth. Emission amount at launch constitutes one billion of protocol tokens, distributed to the original network accounts to start the protocol.

The U°OS project implements adaptive emission. The emission volume is calculated regularly, in a certain time interval, $t_o; t_1; \ldots t_i$, where $t_{i+1} = t_i + T$. The volume of emission depends on the network activity growth in the preceding time period T. The indicator called Network Importance (NI) describes the total volume of social and economic transactions among network participants and is used as a trigger for additional emission. The emission takes place every time NI reaches its all-time maximum. Newly issued tokens are distributed among network participants according to their Importance° rate.

Dynamic emission allocated to users for their social and financial activities motivates the users to participate in the network development, thus, helping to achieve the overall network growth.

A more in-depth explanation of the network activity calculation and emission value calculation can be found in U°OS Yellow Paper in sections 3.2 and 3.3 respectively.

Use Cases

U°OS was made to be easily pluggable and can be integrated into any digital network, application or service.

E-Commerce

U°OS provides p2p market participants with a distributed reputation.
It is not confined to a single platform or context and reflects activity on all the platforms connected to U°OS reputation system. The algorithm itself is controlled not by a single entity, but by the members of the network. The reputation is based on other members' feedback, enabling each member to make comprehensive one-touch decisions on whom to deal with.

Social Media

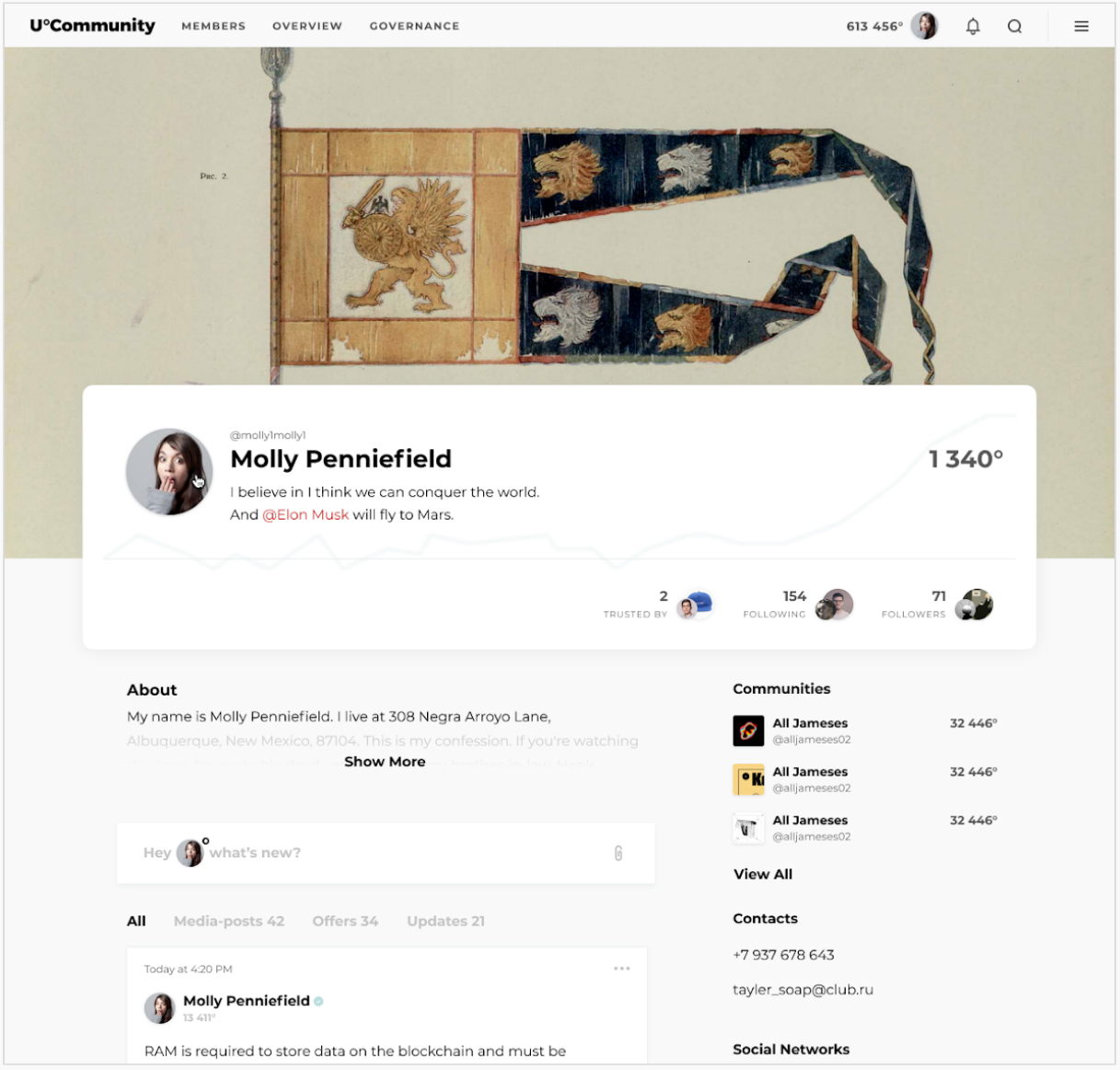
U°OS reputation system introduces the competitive gameplay elements to user experience of social media platforms by revealing the reputation of its members: User's reputation on the platform constantly changes depending on the feedback of other members. User's reputation determines the weight of his actions and his influence on the platform. Competition for influence between users increases user retention, engagement and LTV.

Organization & Community Governance

U°OS provides a toolset for governing communities and organizations. The power of vote can be set up in a community or organization's smart contract and can be based on reputation rate. The governance is carried out by means of electing delegates and direct voting for any proposals: transactions on behalf of community, initiatives, changes or improvements.

U°Community

U°Community is the first dApp and a user-friendly interface for U°OS blockchain launched in Oct. 2018. It allows users to interact with each other, publish content, make offers, create and govern communities and organizations, powered by the U°OS reputation system.



UOS Token Distribution

Total Circulating Supply:

1 000 000 000 UOS

Seed Round — 100M UOS

Private Round — 200M UOS

IEO — 100M UOS

Community Distribution — 200M UOS

Advisory, Block Producers, Ambassadors — 100M UOS,

Community Development — 100M UOS,

Distributed Community Foundation — 100M UOS

Team — 100M UOS

Roadmap

2019

Q2

- Calculator Nodes API + Documentation
- Referral System

Q3

- Mainnet launch
- Calculator Nodes History Plugin
- DAC/DAO Interface
- U°OS Light Wallet
- Polls functionality
- Update/Proposal System

Q4

- SDK
- External Widgets
- Search System
- Offer System
- Donation/Escrow System
- Direct Messages

2020

Q1

- Improved token economy model
- Native Apps (Win/Mac/*nix)
- Wordpress Plugins
- Browser Extension

Q2

- Mobile App
- U°OS DEX launch

Links

U°OS website

U°Community Platform

U°OS Yellow Paper

U°OS GitHub Repository

U°OS Block Explorer

Current Block Producer candidates