

NOVUM

Trust Order Protocol

W H I T E P A P E R



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This whitepaper describes the initial offering through which the Novum Token (NVT) is to be sold. NVT is a token which serves the primary function of a cryptocurrency empowering the Novum Trust Order Protocol as explained in this whitepaper. However, since NVT is also issued by a well established business (the Novum Group), NVTs would have immediate utilitarian consumption throughout most services provided by Novum's existing platforms. Novum will generally not limit the usage of NVT or the types of business entities that would like to use NVT for their business.

NVT is not intended to constitute a security in any jurisdiction.

Please note that purchases of NVTs are final and non-refundable. Individuals, businesses, and other organisations should carefully weigh the risks, costs, and benefits of acquiring NVTs.

FOREWORD

A diverse yet complementary group of companies weaved together by the technology commonality – blockchain. Since our inception, we have witnessed the demise of many chains in similar spaces, while the remnants navigate reactively without possessing the strong optics necessary in this fast-changing technology space. We continue unbound, focused and aware that this journey takes more than courage and determination. We understand that it takes a team, or rather a family, to amplify, reinforce and crystallise the results that The Novum Group aims to achieve.

“Semper Anticus”

Always forward. That is the meaning of the Latin phrase above. This document serves as an invitation to you to join us in our quest for excellence.

— Christopher Low,
Chairman
The Novum Group

PREFACE

Two years ago, Vitalik Buterin, founder of Ethereum blockchain, used the analogy of a vending machine to explain the novel and complex concept of smart contracts to a crowd who knew little on blockchain and the subject. Today we ask of you to consider how data transfer and communication is made possible on the internet, and how it became more user-friendly for mass adoption.

The Internet is a human-based decentralised structure that has scaled to more than 4.39 billion internet users in 2019, with a dynamic self-governance to continuously evolve itself over time. The reason for alluding to this is because NTO protocol is meant to be a communication protocol equivalent for blockchain data and information, to set a standard if not lay the foundation for the way in which our blockchain ecosystem and its entities consume blockchain information, and facilitate the simplification of the user process.

Our mission is to introduce better organisation and hence greater clarity, accessibility, even interoperability in rendering blockchain information available to the public. In other words, to provide an alternative framework that sorts and filters out the noise so that the average user can navigate blockchain with confidence and efficiency. When data is conspicuous and made available in a decentralised manner, the community becomes adept in navigating the system, and inevitably develop ways to better police or build on the system.

Needless to say, there are existing blockchain protocol and explorers out there performing similar purpose to ours, simplifying blockchain data access and retrieval for intentions to verify transactions and more. NTO protocol was not created to outrival existing solutions but rather to co-exist and supplement gaps by introducing something moderately different. NTO protocol works in tandem with our native cross-blockchain explorer (Moonwalker) and native Novum Tokens (NVT) to provide more features and utility to engage other blockchain applications, entities, or end-users. This mini ecosystem works collaboratively with our entire Novum enterprise and services.

Depending on the type and scale of community engagement defined by applications utilising the protocol, NTO serves to facilitate a constructive participatory culture by enabling adaptations and gamification on top of the protocol functions. Our ecosystem is further supplemented by NVTs to drive transactions and interactions amongst NTO community members. Besides being a basic transaction currency, NVT has other utility such as access and privileges across NTO partners and service providers. NVT has two token standards NV-10 and NV-800: NV-10 is for general use and mandatory for all fundamental services, and can be purchased at preferential pricing during our token issuance exercise, or subsequently from the secondary market; NV-800 is a type of expirable token specially generated for a one-time event utility.

INTRODUCTION

PROTOCOLS

Falling back to its most basic definition within the computing field, a protocol is a set of rules and guidelines for communicating data. Protocols specify the standards for communication or successful data transmission.

Mass adoption of the internet can partly be attributed to how protocols better internet usage and experience. Transmission Control Protocol/Internet Protocol (TCP/IP) is the standard set of data communications protocols that network devices use to communicate with one another on a network, enabling email exchanges, file transfer, instant messaging and other functions. HyperText Transfer Protocol (HTTP) is a communication standard used by the web browser to communicate with the server of a website, to transfer data to and from the website. Even Hypertext Markup Language (HTML) functions as a protocol to mark normal text for conversion into hypertext via HTML tags, rendering web pages. Although these operate at different layers, such protocols and standards enable basic end-to-end communications.

“

Conceptually speaking, blockchain needs a communication protocol like HTTP, a standard markup language such as HTML, and a universal browser (such as Chrome, Safari or extensions to them) that can interpret the chains and display their content in a user-friendly, consumable format. These technologies allowed the internet to be transformational. The lack of these foundational technologies is limiting the impact of blockchain and hindering its transformational potential and disruptive power.

— Saeed Elnaj, Forbes

The web as we know it today has undergone so many improvements over the past 30 years since its commercialisation, having transformed if not redefine the way humans communicate and transact. On one hand, blockchain has disrupted countless spaces in diverse verticals. Yet looking at blockchain in parallel to the evolution of the web, blockchain is still in its adolescent stages; its infrastructure and ‘user-friendliness’ to the average man leaves much for maturing.

CURRENT CHALLENGES

Blockchain is relatively new to the commercial market. Many people still lack understanding on the technology and the jargon, which effective education and activity surrounding literacy can alleviate. Endless (legitimate) blockchains/projects are coming up with different, sometimes repeated solutions for users in order to surpass business competitors, yet little has been done to organise or consolidate all of these efforts. Blockchain data and knowledge individually acquired remain isolated. In addition, cross-chain information is fragmented and disorganised, leading to market inefficiencies. A lack of transparency leads to scams, abuse or misuse by bad actors, all of these concerns that can be addressed by developing clearer standards to define all the floating facts and statistics, empowering the system for self-regulation.

INFORMATION IS FRAGMENTED

The problem with the blockchain space today is that the average person is likely to be blockchain illiterate, yet blockchain information/data is straightforward only to people who know where to find it. There are many existing resources on blockchain, but there is no definite authority or leading sources for an outsider of the blockchain industry. Neither is there a huge encyclopedia pointing people in the direction of where they can discover the information they need because sources are scattered and siloed. Not to say that there are no efforts in providing comprehensive, easy-to-understand glossaries or indexes, but how can we further ease the use and learnability of blockchain knowledge and information?

Instead of publishing new educational content, people should also focus on organising existing resources better and emphasise user interaction with resources and media.

LACKING IN USABILITY

Today's blockchain landscape still suffers from infrastructural challenges, lack of frameworks and multi-platform availability. Blockchain platforms need an equivalent of a browser for blockchain technology to make things even more accessible and user-friendly than before. Aside from being user-friendly, it should ideally have mechanisms that advocate fair use and an inherent incentive model for engagement and/or productive behaviour.

The system should also encourage community-built tools for expansion, to promote system-building and sharing of software that can help other community members gain better insights into the network and its disruptive potential.

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NEED FOR SELF GOVERNANCE

Any given system has to continually adapt or make changes to improve itself. Acentric systems often employ a self-governing mechanism to manage any changes in a fair and transparent manner, a consideration which the next-generation of blockchain projects undoubtedly need to implement.

Autonomous governance should be integrated into a protocol operating as public infrastructure within a decentralised system on the blockchain, while incorporating reward and some form of Standard Operating Procedure (SOP). This is to lay out general guidelines for behavior and align the needs of users with those of the system. Proper governance by network protocols can provide a new way to organise social interactions, as we have seen with the way users police themselves in centralised P2P sharing and decentralised P2P sharing on the web. Blockchain is currently transiting from a state of centralisation to becoming truly decentralised. With adequate governing understructure, there can be proper self-regulation.

SOLUTIONS

NTO protocol acts as a middleware or translator of sorts, parsing information already available on the blockchain and facilitating the processing of such information by people or applications. The protocol functions as a basis for the NTO ecosystem, with Novum tokens (NVTs) and our blockchain explorer Moonwalker operating on top of it for enhanced usability and application. As a tool, the NTO ecosystem becomes an aggregator and a means of order.

The underlying model is rooted in trust, and the system supplies a measure for it. Trust is needed to keep order and to maintain important rights; naturally everyone in the system is created for trust but also answerable to others; the system also encourages the questioning of trust.

COMMUNITY-CENTRIC, DECENTRALISED CONTROL

NTO protocol is one for the people. The protocol is built to answer the needs of blockchain users – of developers, of newcomers, of project owners, of investors. General users are able to use NTO ecosystem to scan blockchains for what they want to know; third party applications can build on top of the protocol to provide even more applications to suit the needs of users; using blockchain-enabled NTO smart contracts, fund disbursement, milestones delivery and other

INTRODUCTION

project developments can be voted on by investors, so project owners can give assurance of accountability in the use of funds raised. Essentially, the NTO community is one that is decentralised and autonomous. It enforces its own rules, heightens credibility of information and verifies parties in the system etc. By encouraging user involvement in a user-friendly environment, NTO gives control and the experience that users want to them. This, in turn, will appeal to more genuine parties to onboard the NTO network.

INTEGRITY

NTO runs on a proof of authority model that assigns a value to the reputation of a user/wallet in the system. Reputation is dependent on trust scoring, which is subjected to multiple variables including wallet transactions, value of interactions and any disputes by other network authorities. Measure of trust of users and entities on the network is fair, dynamic, open to contention and policed by the community itself. Such self-regulation deters trolls and bad behavior in the system simply because of the power of the community and the importance of social approval.

Furthermore, because of added traceability and transparency, the system can become more robust as the community pares down destructive behavior.

INTEROPERABILITY AND INTEGRATION

In providing a new standard for the blockchain system, we have the opportunity to enable cross-chain interoperability across multiple blockchains. This widens the horizons for cross-chain operations, very much like bridging two siloed departments, enabling communications for better collaboration and ultimately a unification of resources.

If mass adoption of blockchain is the next inevitable phenomenon, there will increasingly be an emphasis on trust, regulation and order. As industry insiders, we have witnessed the first blockchain boom and all its shortcomings as the market went from bull to bear, and we are taking steps in anticipation of the next upsurge in blockchain.

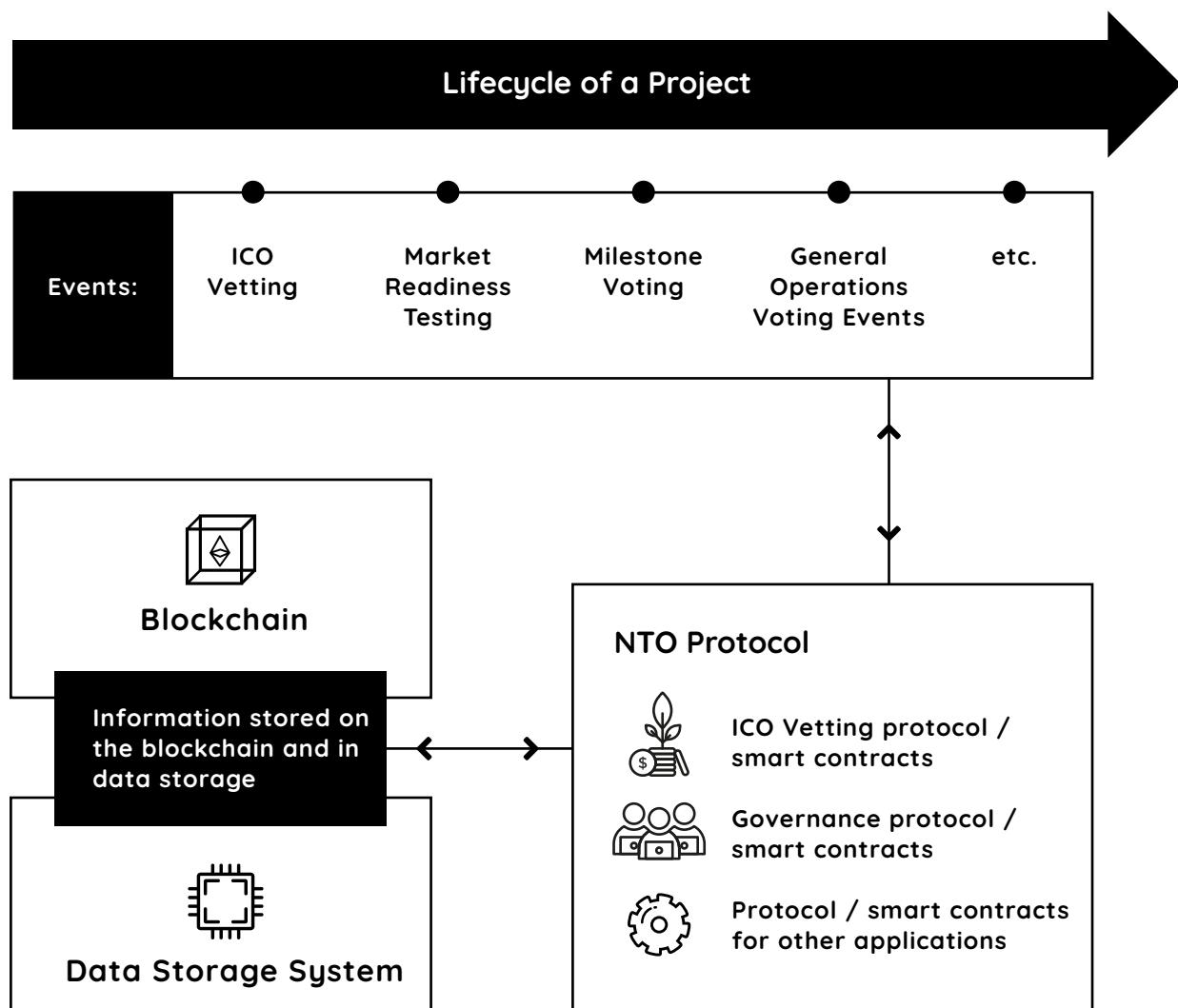
OUR CORE BELIEF

At Novum, we embrace open participation and greater engagement in blockchain. We believe that inclusivity, accountability and accessibility encourage greater participation, which in turn attracts more people to onboard the blockchain ecosystem. We believe that better projects will naturally attract more users and vice versa, a cycle that will repeat indefinitely. To achieve this, we take the necessary steps towards ensuring greater accountability and value to stakeholders resulting in projects being more sustainable in the long term.

OUR SOLUTION

THE NOVUM TRUST ORDER (NTO) PROTOCOL

The Novum Trust Order (NTO) Protocol is a smart contract protocol for projects, providing a framework governed by the blockchain within the blockchain ecosystem. NTO's core architectural design takes into consideration a project's responsibility towards its stakeholders, demonstrating that better quality projects will attract investors into our ecosystem.



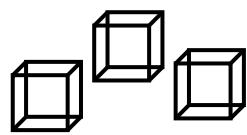
Key Functions



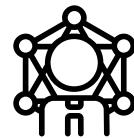
**Creation of smart contracts with
customisable templates for token
issuance**



**Management and autonomous
execution of milestone events**

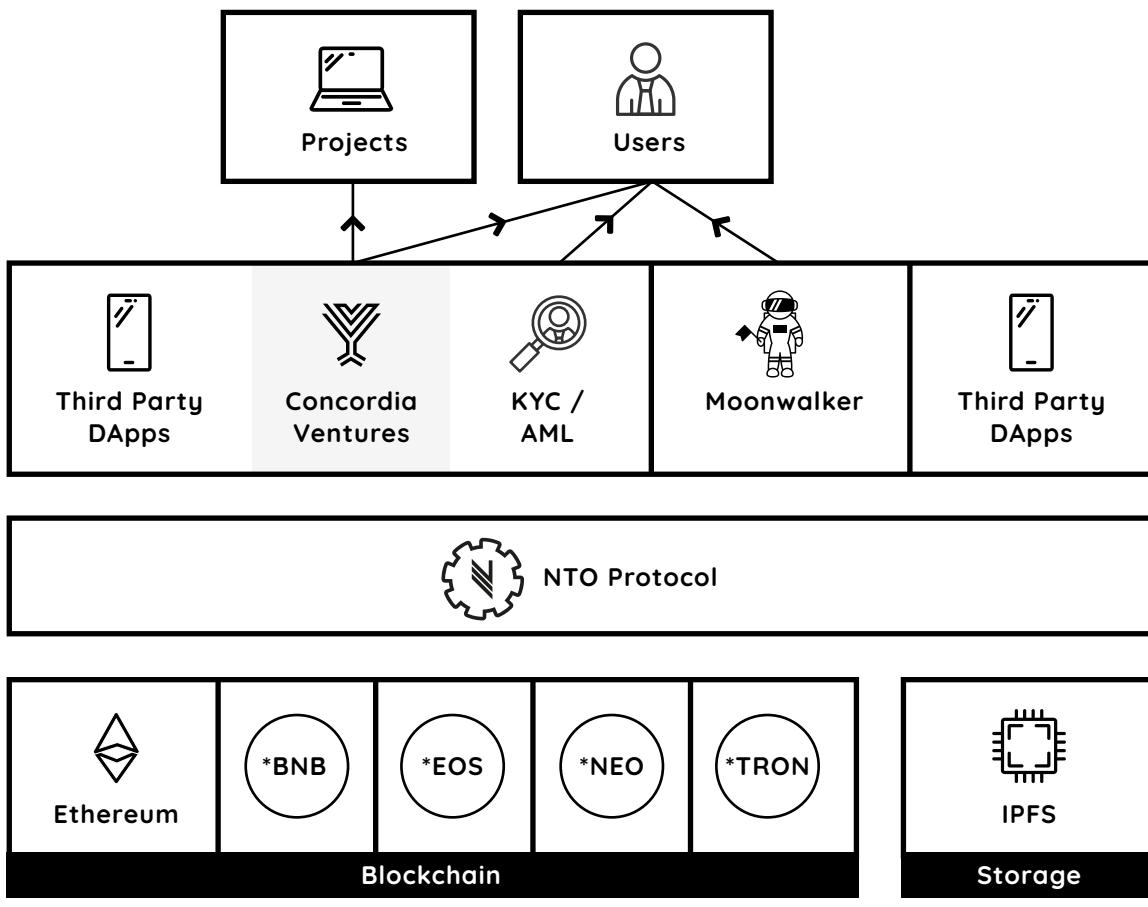


Cross blockchain explorer



**Interoperability across all
projects operating on different
blockchains**

ARCHITECTURE OVERVIEW



This architecture is designed to be modular in nature, in order to accommodate third party services which will proliferate the use of NTO, as well as future proofing, enabling complete lifecycle management and compliance of tokens. A suite of centralised services can serve as the basic infrastructure for the NTO Protocol.

NTO Protocol operates between the blockchain layer and third party decentralised applications (DApps), centralised applications or services. It acts as a data pipeline to facilitate the data flow to either the blockchain layer or database layer through interfaces such as DApps or centralised applications. It handles logic and manages the interaction and flow of data within the ecosystem.

DATA STORAGE

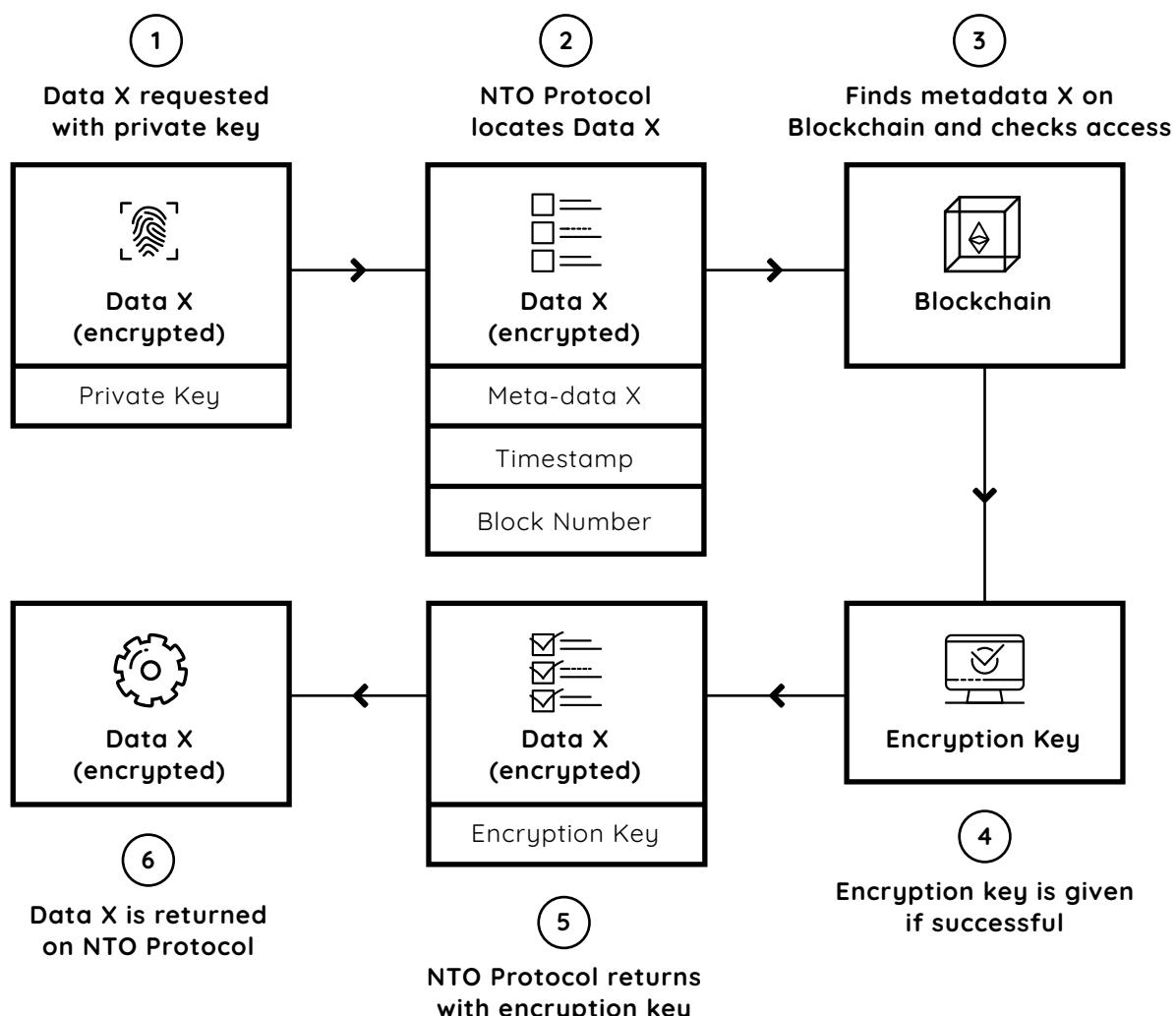
Large data such as media can be stored on a file storage system instead of the blockchain for better data efficiency and scalability. The Novum DApp will adopt a decentralised file storage system such as the Interplanetary File System (IPFS), a peer-to-peer file-sharing system that provides high throughput, low latency data distribution and is decentralised and secure. It will be used to store information that is too large to be accommodated efficiently at the blockchain protocol level.

BLOCKCHAIN LAYER

Blockchain technology is used for its autonomy, immutability, decentralisation and trustless consensus features. This blockchain layer is where the NTO Smart Contracts and DApps functions are fully decentralised. Ethereum is chosen for this layer because of its widespread adoption, strong developer community, together with its readily available infrastructure and services.

NTO PROTOCOL LAYER

The NTO Protocol layer by itself is a DApp that acts as a data pipeline to handle data flow to and from either the blockchain or database layer. In brief, a DApp is a computer application that runs on a distributed computing system, which means it is open source, does not have a central point of failure, and requires no middleman to function. Data pipeline logic is handled on the Novum DApp to control and manage interactions among ecosystem services. Information is pulled from metadata or unique identifiers directly from smart contracts.



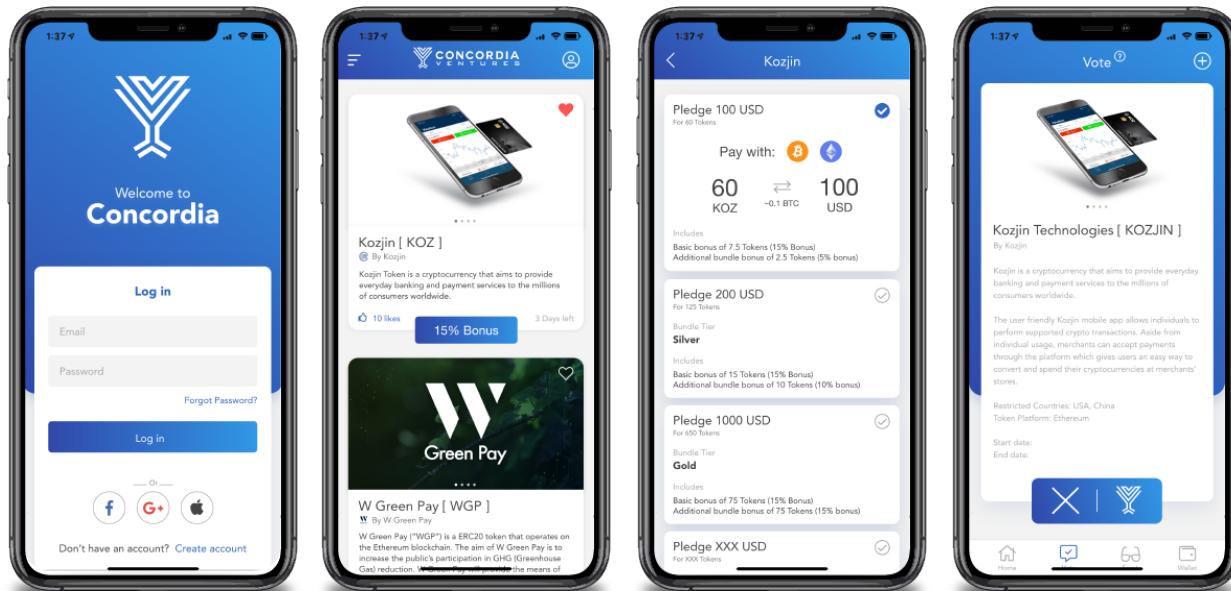
ARCHITECTURE OVERVIEW

DApps or applications are plugged into the NTO Protocol Layer, which facilitates functions and interactions between smart contracts.

THIRD PARTY APPLICATION / DAPP LAYER

This is where end users, projects and investors interact with a user interface to make blockchain information readable, just like a blockchain explorer. It will take a form similar to crowdfunding platforms such as Concordia Ventures, allowing investors to participate in token sales or for projects to publish their NTO Smart Contracts. Essentially, users can interact with the protocol through an easy-to-use client-agnostic application that has been developed using industry best practices.

This layer also includes third party services that may complement crowdfunding platforms such as know-your-customer (KYC) services, or localisation compliance services. These are third party services that are necessary, but specific to the end user interface.



Sample Interface from Third Party App, Concordia.

NTO EXPLORER – MOONWALKER

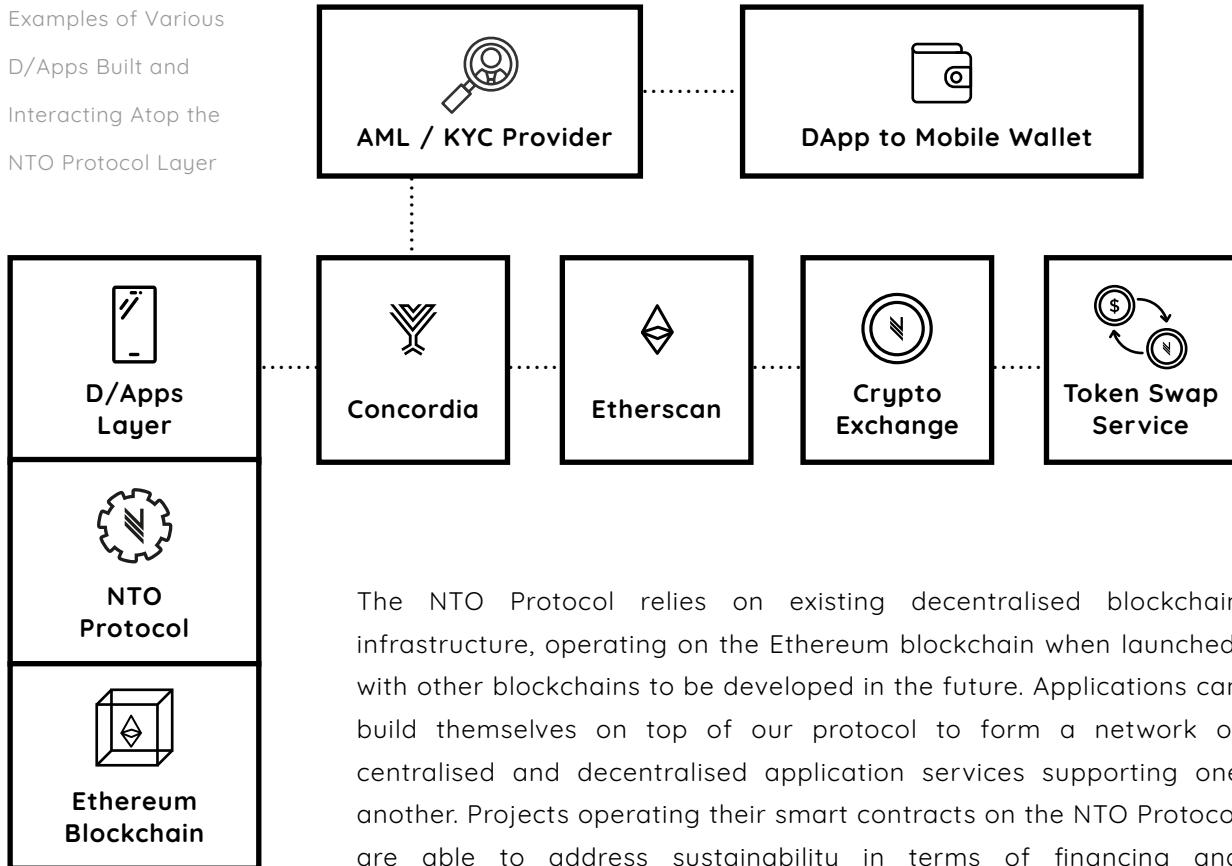
A blockchain explorer presents information on the blockchain through an interface. It allows users to access information easily through popular mediums such as web or mobile applications. Although traditional blockchain explorers such as Etherscan.io will work for basic information (since NTO is operating under Ethereum), NTO-specific functions need to be acutely reflected and presented on Moonwalker.

NTO TOKEN ISSUANCE PLATFORM

NTO Smart Contracts are deployed on a self-serve basis through a DApp Token Issuance Platform that is available on Moonwalker. Although the NTO Smart Contract is open source, it is important that an interface is provided to give greater accessibility. Having a self-serve, user-friendly issuance platform will help with furthering the application and use of NTO Protocol. The purpose of the Token Issuance Platform is to accelerate the project onboarding process by minimising the deployment time for project owners.

NTO PROTOCOL ECOSYSTEM

Examples of Various
D/Apps Built and
Interacting Atop the
NTO Protocol Layer



The NTO Protocol relies on existing decentralised blockchain infrastructure, operating on the Ethereum blockchain when launched, with other blockchains to be developed in the future. Applications can build themselves on top of our protocol to form a network of centralised and decentralised application services supporting one another. Projects operating their smart contracts on the NTO Protocol are able to address sustainability in terms of financing and development through validation from the NTO ecosystem. Given that the protocol runs on a trustless network managed by smart

contracts that remains fully automated and transparent, it enables effective cooperation of large communities to pool their resources to address any open and disputable events, bringing stakeholders in the ecosystem closer with greater transparency.

MAIN ELEMENTS OF ECOSYSTEM:

Novum Token (Symbol: NVT)

- ERC-20 token providing network wide utility, extended with the capabilities of the NTO Protocol.

NTO Token Standards

- NV-10, governance enabled token smart contracts
- NV-800, for project-specific, governance/voting events

Third Party Applications / DApps

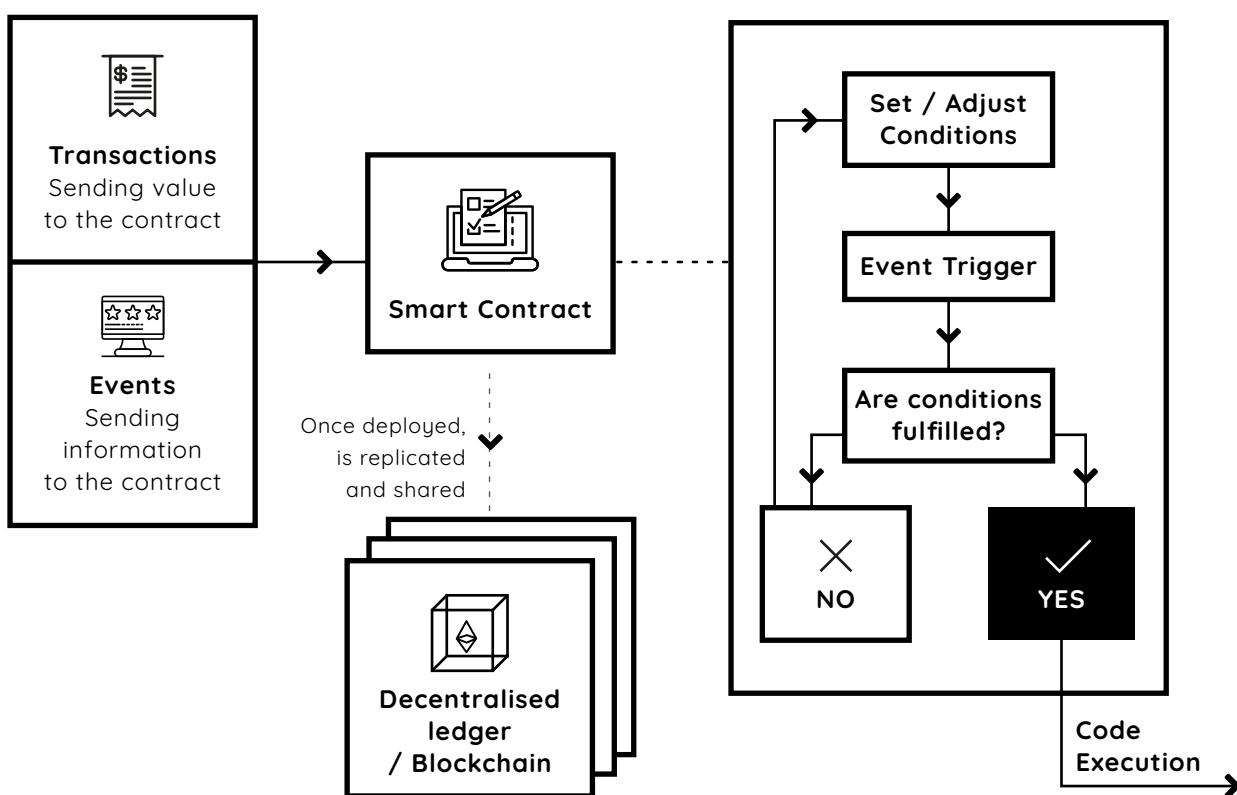
- Concordia Ventures; crowdfunding app using NTO Protocol, enabling lifecycle management and compliance with native tokens.

Projects

- Companies/projects that launch an Initial Coin Offering (or similar offerings), selling their native tokens in exchange for another acceptable currency. These projects are also implementing our protocol and governance systems.

NTO NV-10 SMART CONTRACT

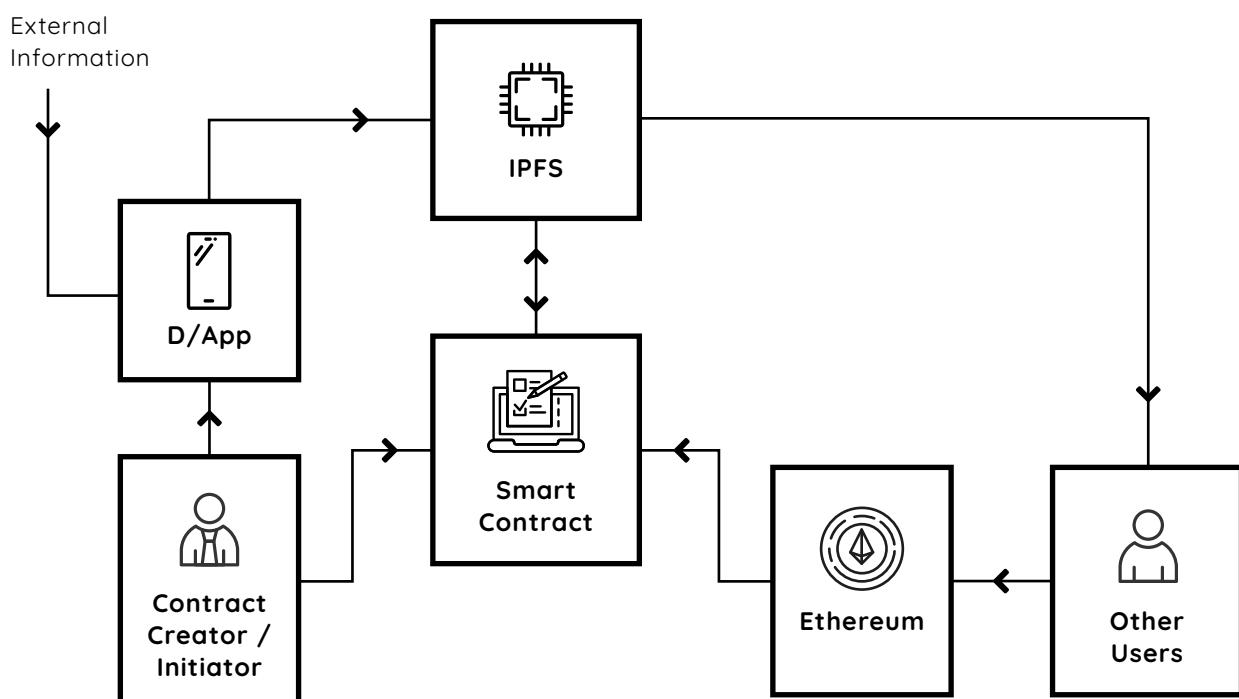
Smart contracts are software programs stored on the blockchain that are autonomously implemented when specific criteria are fulfilled. Data can be modified algorithmically as delineated by its user; the said data includes metadata, access restrictions, transfer rules, and other calculations performed by an algorithm embedded within smart contracts. Smart contracts can transfer assets or establish escrow conditions to be executed algorithmically, with the qualities of blockchain technology.



When two parties enter into a transaction governed by a smart contract, if both sides execute their end of the transaction, the transaction is automatically effected without failure. In the case that one party fails to fulfill his end of the transaction, the other party retains his/her asset. There is no risk of payment in the case of failure to deliver what was promised. The smart contract can be designed to effect a transaction instantly, or in the future upon fulfilling pre-set conditions.

NTO PROTOCOL ECOSYSTEM

Projects can issue their tokens through smart contracts on the Ethereum blockchain. They may choose to deploy the NTO Smart Contracts themselves or through NTO Token Issuance Platform. These smart contracts consist of standard pre-set variables, but project owners are able to customise certain parameters, or additional variables, within the smart contract to be deployed on the blockchain. Tokens issued on NTO Token Issuance Platform will follow the NV-10 token standard.



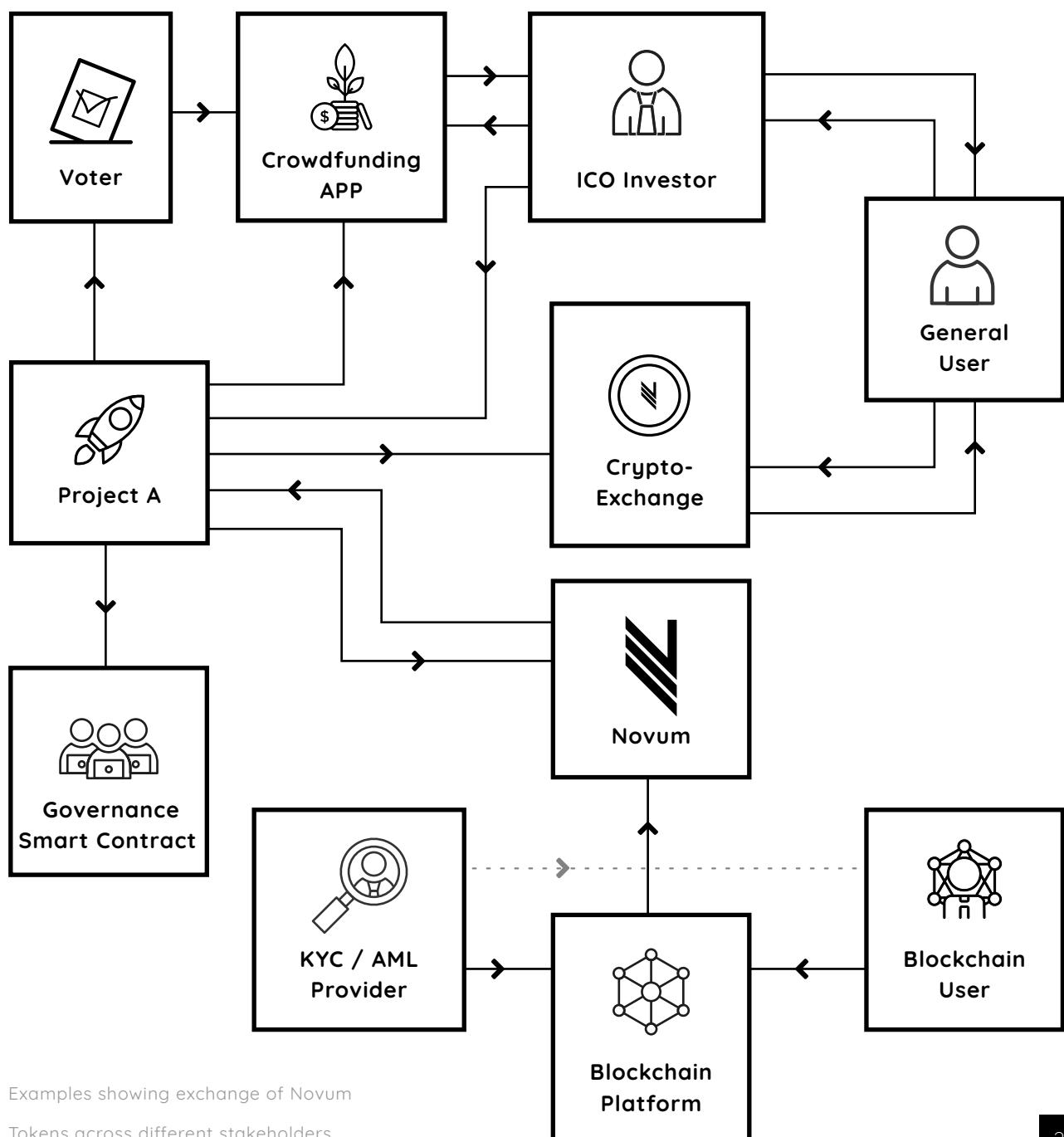
NV-10 Smart Contracts are open source, subjected to periodic external code audits and evolving to improvements made to NTO Protocol and changes made to its underlying blockchain protocol (i.e Ethereum 2.0).

Project owners will be able to deploy a fully compliant token smart contract that is widely accepted by other industry stakeholders, such as third party exchanges. Parameters of the smart contract and project information are validated on-chain through the DApp which pulls the information through the data storage layer as well as from the blockchain.

NOVUM TOKENS (NVT)

Novum Tokens are the foundation that underpins the NTO Protocol. Novum Token is an ERC20 compliant token, native to NTO, that is used to operate the infrastructure. There are multiple functional utilities of Novum Tokens within the NTO Protocol that revolve around the core principle of creating a better ecosystem.

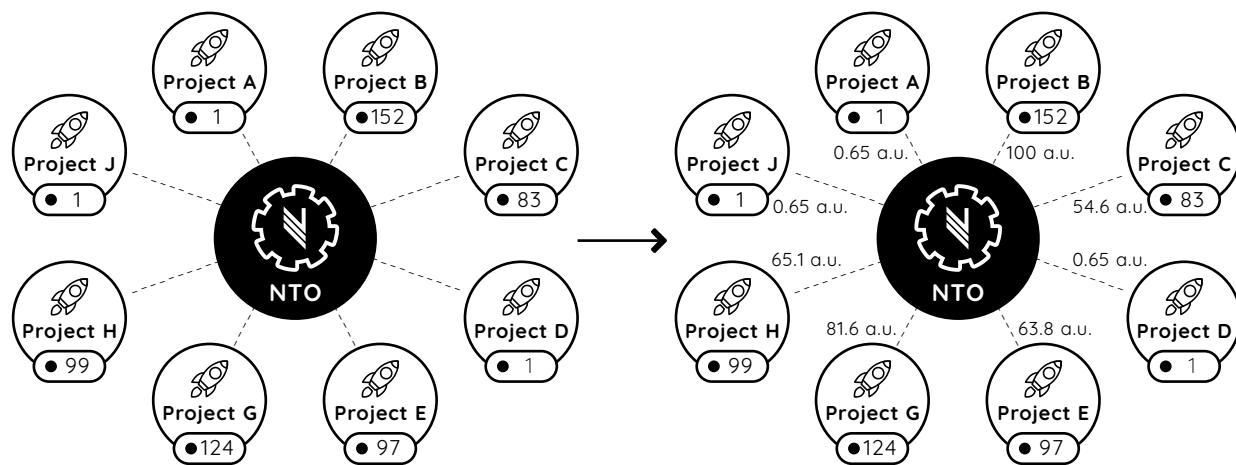
Third party applications running on the NTO Protocol will be able to build their own business with use cases that require Novum Tokens or make it transparent to users; just like withdrawing any other Ethereum-based ERC20 tokens on centralised exchanges, these exchanges pay network fees in Ether but charge users in the same Ethereum-based ERC20 tokens.



Examples showing exchange of Novum Tokens across different stakeholders.

TRUST SCORE

Projects will be able to store Novum Tokens in their smart contracts just like any Ethereum smart contracts. For active discovery on NTO Protocol data pipeline DApp, each smart contract has to have at least 10 NVT in their smart contract balance.



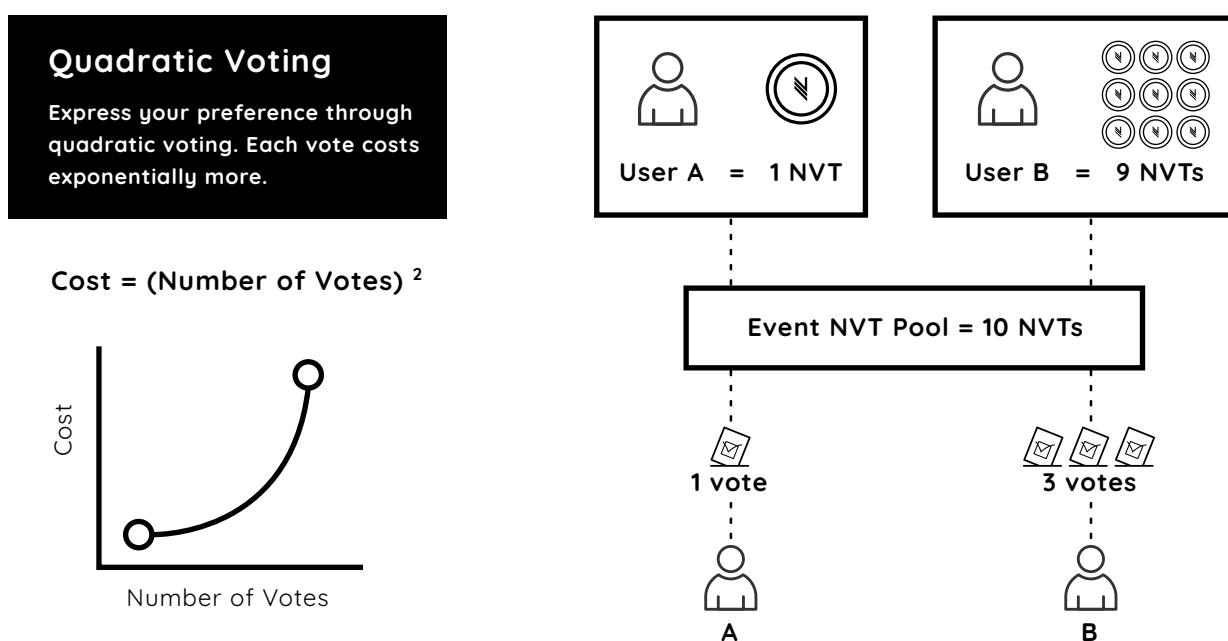
NTO Protocol DApp assigns a 0 - 100 value scale, known as Trust Score for each smart contract. A Trust Score will be given to the tokens themselves and the smart contract becomes a validator if given enough Trust Score. Trust Score is derived from a myriad of elements, each given their own weight, from transactions, different token types, interactions with other wallets based on their score, activity during the token sale and NVTs held in proportion to other wallets. For a detailed explanation on Trust Score, see our technical document – ‘NTO Yellow Paper’.

Additional functions can be built on top of this rating system, either by projects or third party applications, depending on how they would like to interpret the information. For example, this trust scoring system can serve as an indicator of how popular a project is during its fundraising phase, as a proof-of-participation.

At the moment, blockchain explorers indicate the number of wallets or transaction counts that are currently holding the tokens as an indicator of how popular a token is. This methodology is not a good indicator as tokens can be freely airdropped into random wallets, each holder is counted as long as they hold a fraction of a token. NTO addresses this by working on the basis of actions from a wallet’s interaction such as transactions with other wallets or to the smart contract.

QUADRATIC PARTICIPATION

NTO Protocol employs a quadratic voting model using Novum Tokens. Quadratic voting is preferable when making collective decisions in order to avoid the undemocratic rule of the majority. A consensus mechanism that uses quadratic voting enables voters to quantify the intensity of each vote, instead of merely focusing on the qualitative aspect of being in favor or against. If a participant has a strong preference for a particular project, the participant may choose to allocate additional votes. However the cost of additional votes becomes increasingly more expensive; the voting is ‘quadratic’ because the total amount you pay for votes increases in proportion to the number of votes squared. In other words, an individual has to stake NVTs equivalent to the square of the number of votes they desire, i.e. 1 vote = 1 NVT, 2 votes = 4 NVTs, 3 votes = 9NVTs...etc, etc.



Quadratic participation is a subset of Trust Score but would be given a separate function: for project discovery during their token sale phase or when they are just starting out, to give them a platform for discovery against other already established tokens. Comparable to app stores' top charts with different sections such as most downloads over different time frames, growth rates or individual categories.

Each wallet with Novum Tokens being sent to the smart contracts will have diminishing weightage, prioritising the number of holders over NVT being sent to the smart contract. In the above diagram, User A puts in 1 coin for 1 vote, whereas User B has to put in 9 coins to receive only 3 votes.

Quadratic voting aims to reward users who invested time and effort to research projects and consequently, to back high quality projects. Project owners are encouraged to create a strong incentive model for users who voted a disproportionate amount of NVTs for their projects.

Projects can code a reward system such as bounty campaigns or discount tiers for their token sale to incentivise users to send their Novum Tokens to their smart contract. For example, User B's higher voting power will entitle him, or her, to purchase a larger proportion of the project's tokens at privileged pricing later during token sale.

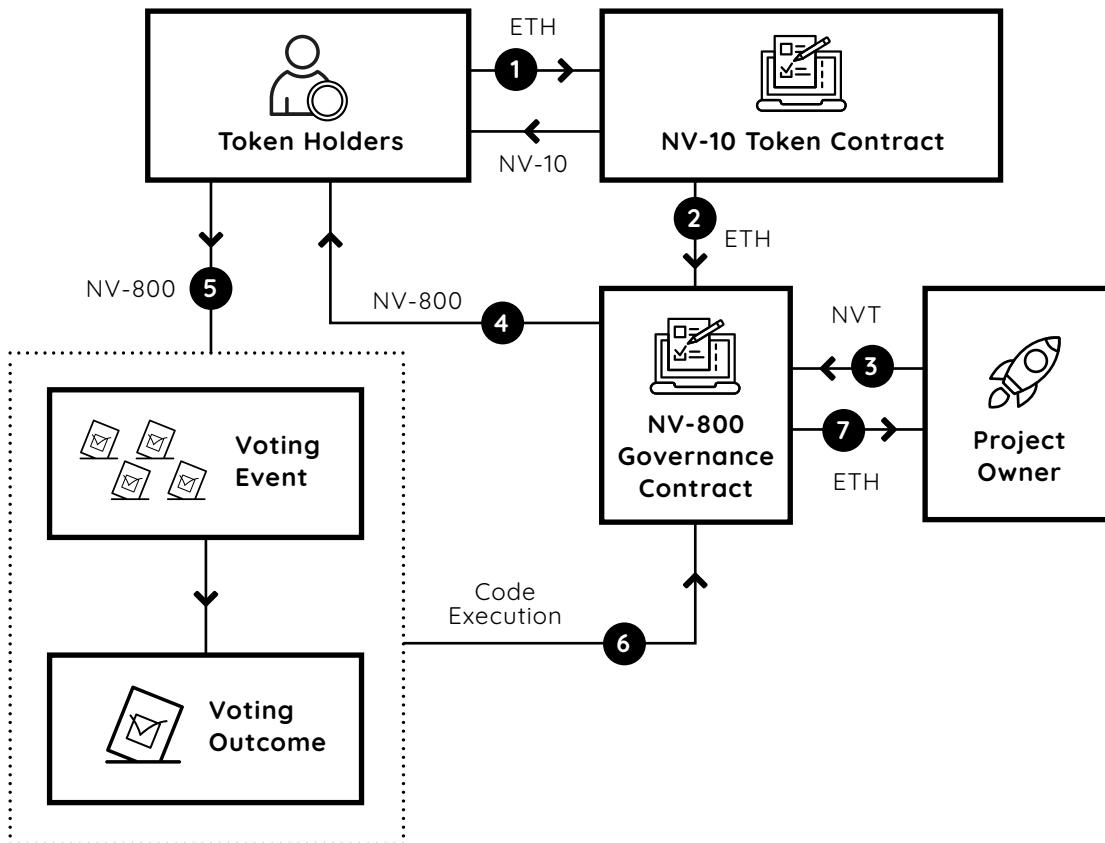
NTO GOVERNANCE

Our protocol enables the implementation of governance. Projects will be able to code milestones autonomously managed by smart contracts directly when issuing their NV-10 tokens from the NTO Token Issuance Platform. Should they choose to operate on NTO Governance, funds received to the NV-10 contract will be channelled to a separate governance smart contract automatically.

Parameters such as consensus governance of milestones, fund lockup and the quorum required are initiated by the projects themselves. Although best practices will be provided by NTO Token Issuance Platform, projects are free to propose their own unique models as they are made transparently available to users.

To vote, users need to hold specific voting tokens using NV-800 token standard, each specific and unique to every NTO Governance Smart Contract through a DApp. NV-800 tokens are distributed based on the NV-800 Governance Contract, which is maintained by projects that require NVT to operate. The amount of NVT to run a distribution node scales according to the number of voting events as well as wallet holders.

Votes are allocated on the blockchain through signing a transaction on the DApp. Since signing a transaction on the blockchain requires no gas fees, users are not discouraged from participating given no economic loss.



- 1** During a token sale, Token Holders may contribute Ether or other tokens accepted by the NV-10 Token Contract.
- 2** They will get their NV-10 swapped for their contribution. If the governance option is enabled, Tokens are channelled to its NV-800 Governance Contract which remains there until a voting event is triggered.
- 3** To start a voting event, Project Owners will need to deposit NVT needed into the NV-800 Governance Contract within a window period for all Token Holders snapshot when the voting event is triggered.
- 4** NV-800 Voting Tokens will be issued to token holders.
- 5** Token Holders signs a transaction indicating their vote.
- 6** Code is executed on the NV-800 Governance Contract based on their predetermined rules.
- 7** In the usual case, if it's a milestone voting event, funds are released and sent to its NV-10 Token Contract which the project owners have access to.

NTO USE CASE

Moonwalker, a blockchain explorer powered by NTO protocol, will provide all its information free of charge to consumers. Developers or companies may choose to build applications on top by accessing the NTO protocol through an API. There will be a free version available for non-commercial usage with a low rate limit for personal use. For commercial usage, there will be a higher API rate limit that has a higher update frequency. Each API call will be charged a flat fee in NVT.

Applications that require blockchain information could be the likes of wallet services, portfolio management systems, exchanges or any other data aggregators. To better illustrate the extensive and fluid applications of the NTO Protocol and governance model, the next few sections demonstrate Concordia's own utilisation within the crowdfunding domain, with in-depth explanation of applications in greater detail.

USE CASE: CROWDFUNDING APP INTRODUCTION

Concordia Ventures is Novum's crowdfunding platform for users to access token sale projects and the first use case to demonstrate the NTO Protocol's capabilities. Concordia is available on the web as well as mobile to allow cross platform access for projects that do not have mobile capabilities to perform token sales on mobile. Currently, Concordia has the necessary infrastructure to support a token sale from the sale period to token distribution. By using the NTO Protocol, Concordia will be able to expand its service offerings beyond a project's token sale period with NTO's smart contract features as well as Novum Protocol layer.



Concordia App Features and Respective Supporting Technology

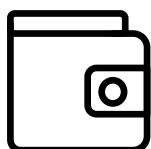
App Features	Technology
Onboarding and Compliance	Centralised
Wallet Functions	Centralised, Blockchain
Project Listing / Discovery	NTO DApp, Blockchain
Project Vetting	NV-800, Blockchain
Project Governance	Centralised, NTO DApp, Blockchain

CONCORDIA VENTURES FEATURES



Investor Onboarding and Compliance

Users on Concordia Ventures will be subjected to KYC / AML checks before they can access token sale projects. The platform connects to third party databases that perform these checks and determines if the individuals are qualified. Once approved, users will be able to proceed with purchasing tokens that are available on the platform.



Wallet Function

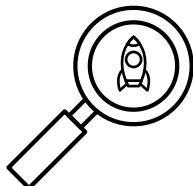
In order to facilitate and allow users to easily access purchased tokens, there is a wallet service application, similar to existing applications that users are accustomed to using for cryptocurrency exchanges. Users can manage their cryptocurrencies to purchase tokens and keep track of the tokens they have purchased.



Quality Reporting

Users will be able to receive high quality reports of which data is pulled directly from the blockchain using the NTO Protocol standard, combined with community votes on the milestones. With good quality reporting and transparent accountability towards projects' supporters, project owners will be incentivised to perform well in order to attract more users to their communities.

CONCORDIA VENTURES AS POWERED BY NTO



PROJECT VETTING

Project vetting involves the onboarding of interested projects onto the Concordia platform to sell tokens. A project vetting event will be triggered regularly where there will be a mandatory quorum of onboarding projects in order for a project vetting event to occur. During the voting period, the public can log on to their Concordia accounts to use NV-10 voting tokens to vote for their favourite projects. The voting mechanism for this event will follow the quadratic voting model. NV-10 tokens can be acquired either directly from our token sale (at a preferred price), or subsequently from Concordia, or airdropped by participating projects to their communities.

This project vetting feature is useful in terms of having a self-regulating review system that qualifies projects for onboarding onto exchanges, crowdfunding or projects listing platforms, beyond rudimentary project ratings or written reviews, to increase trust levels for token sales. To generate a stronger motivation model for evaluation of projects looking to list, Concordia also has an attractive reward-based system for our community of NVT holders.

An additional advantage of this vetting feature would be project discovery for participants of the project vetting process. Projects looking to onboard will be reviewed and analysed by our community, who aside from being incentivised, start to form their own informed opinions on what makes a project worth buying into, hence increasing the prospects of users becoming potential project investors when they discover high quality projects.

Participatory Benefits

All users who voted are granted early access to audited projects' token sale, entitling them to first tier bonus pricing traditionally only accessible by private investors. A participant with more votes invested in a project that is successfully onboarded onto Concordia (i.e. voted top 50% in a voting event) will be able to buy more tokens at preferred pricing. The basic voting process is simple, and standing only to gain, the community is incentivised to vote anyway.

For investors, buying NVT to exchange for successful project tokens in the voting phase is a safe option to get top tiered project tokens through some work and due diligence. Users will have their NVT tokens returned if the projects are ‘deemed unsuccessful’, or do not hit their proposed soft cap.



Application in Curation/People's Favourites

It is a well known fact that many quality projects go unrecognised. Earlier we explained key problems in current token sales fundraising, and a key issue is the disproportionate attention big projects get over smaller, sometimes more promising projects. To level the playing field, the underdog crowdfundingers will be judged by the general public on who is deserving of the spotlight feature.

This ‘favourite’ function also serves as a form of readiness testing. Startups can test the general market sentiment towards their business ideas by engaging with the crowdfunding platform’s community before officially launching their public token sale. This can save startups time and money on market research and help prevent them from prematurely launching a campaign only to suffer the pain of seeing it fail in the end.

Concordia will host a ‘people’s favourite’ event comprising of all ongoing projects on the platform at regular intervals, providing some friendly competition among quality projects and also to understand what (genre/qualities/key rubrics) retail investors are currently attracted to. Using a quadratic voting consensus mechanism, the platform will reward community members who voted in projects in proportion to how passionate they are, assuming thorough due diligence has been carried out.

Functions and Rules to Note

Each Community member will be awarded a number of NV-10 tokens, equivalent to the number of NVTs held days prior to commencement of the voting period. Casting more votes to a project will cost a voter more NVTs per successive vote. Rules will be announced prior to each event.



PROJECT GOVERNANCE

Concordia also enables project governance in projects' general operations as a form of accountability to investors post-token sales. This differs from using a separate governance chain service for projects that already completed token sales as Concordia is an open platform with potential investors that you can demonstrate progress to and reach out to more investors for secondary market trading for exchange-listed projects.

Following pre-set project milestones or other conditions, voting events can be initiated throughout the lifetime of a participating project. A typical case would be a voting event triggered by the deadline of a promised milestone, in which funds or reserve tokens will be released by a successful and positive voting outcome. In such cases, project-specific voting tokens NV-800 instead of NV-10 will be generated and used, and these NV-800 tokens will expire once the voting event they were specifically generated for concludes.

Projects have to stake an equal amount of NVT tokens to mint their respective company specific voting tokens for each Token Holder, which are NV-800 with unique symbols specific to the project's smart contract. The more users and voting events one has, the more NVTs are needed to be staked to generate an equivalent amount of NV-800.

Only holders of the specific project token in their wallets can be assigned a voting token, NV-800 to vote. A voting event requires 51% majority to pass a decision. One can even allow for community submitted proposals/alternatives in the event of insufficient votes, (i.e all company proposed solution not voted for).

STEPS:

1

Event Initiation: Voting administrators/project owners create a new election event.

- Prior to administering a voting event, the administrators initiate an event by creating an event proposal with specific parameters.
- A unique cryptographic identifier for the event will be generated and this will act as an ID for the event.

2

Token Generation: Voters cast their votes on the NTO network.

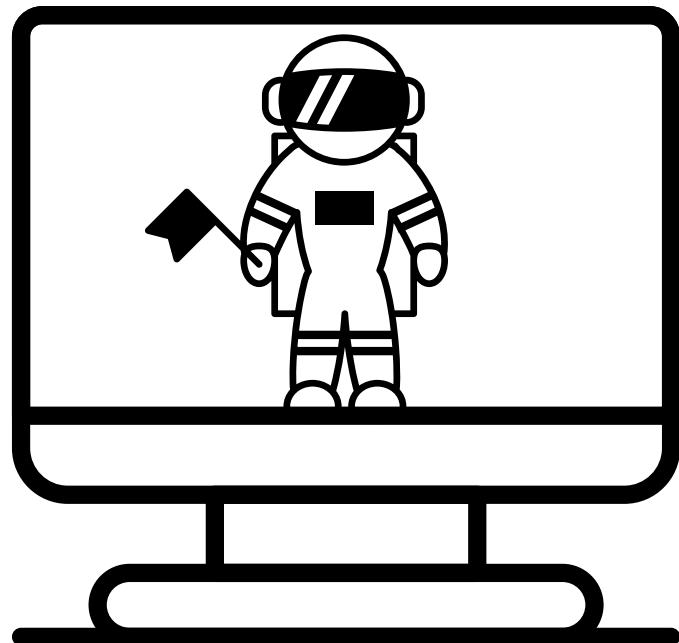
- Before the event starts, project owners/event organisers have to buy an equivalent number of NV-10 tokens to the expected number of voters participating in the event. These NVTs will be exchanged for NV-800 tokens specially generated for the project-event ID.

Once vote casting starts, 1 NV-800 token will be assigned to each account holder holding that particular project's tokens (unless restrictions stated).

Each eligible voter will be able to cast a vote through mobile or web versions of Concordia app, or alternatively any front-end interface that the project wishes to use.

3

Tallying: All votes will be compiled and the outcome will be accessible via the blockchain explorer, and results will be officially announced once the voting period ends.



API ACCESS

Moonwalker, a blockchain explorer powered by NTO protocol will be able to provide all it's information free of charge to consumers. Developers or companies may choose to build applications on top by accessing the NTO protocol through an API. There will be a free version available for non-commercial usage that will be low rate limited for personal use. For commercial use there will be a higher rate limited API that has a higher update frequency. Each API call will be charged a flat fee in NVT.

ROADMAP

2020	Q1	Token sale
	Q2	Smart Contract Documentation for developers NVT Development & Issuance
	Q3	MVP for Smart Contract Issuance Platform
	Q4	MVP for Project Governance Features Wallet / Contract Trust Score features Blockchain Explorer Moonwalker Live
2021	Q1	Launch of NTO Test net implementation with Concordia
	Q2	Onboarding projects to use NTO Embark on public relations and marketing activities. Examples could be regional hackathons, prize awards for most voted projects, etc. Partnerships with complementary ecosystem stakeholders
	Q3	Integrating NTO with other blockchain infrastructure and services

TEAM



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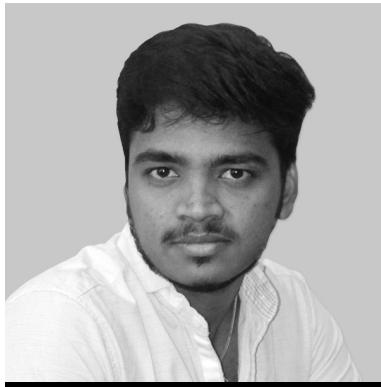


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Ms Marian Ho

Legal Advisor

Marian Ho is a senior partner in the Dentons Rodyk Corporate group. She has broad experience in corporate finance as well as mergers and acquisitions. Marian advises on fund management and collective investment schemes, in particular offers made by offshore funds in Singapore.

In addition, Marian acts as company secretary for a wide range of corporate secretarial clients.

REFERENCES

Crowdfunding - worldwide | Statista Market Forecast. (n.d.). Retrieved from
<https://www.statista.com/outlook/335/100/crowdfunding/worldwide>

Crowdfunding Statistics: The Facts About the Latest Fundraising Craze. (n.d.). Retrieved June 10, 2019, from <https://blog.fundly.com/crowdfunding-statistics/>

Hoque, F. (2014, January 05). Why Most Venture-Backed Companies Fail. Retrieved from
<https://www.fastcompany.com/3003827/why-most-venture-backed-companies-fail>

Kharif, O. (2019, February 13). ICOs Alive and Well as Crypto Startups Go After Wealthy Buyers. Retrieved from
<https://www.bloomberg.com/news/articles/2019-02-13/icos-alive-and-well-as-crypto-startups-go-after-wealthy-buyers>

List of highest-funded crowdfunding projects. (2019, June 07). Retrieved from
https://en.wikipedia.org/wiki/List_of_highest-funded_crowdfunding_projects

Olsson, L. (2018, July 10). ICO Funding has overtaken Angel & Seed Venture Capital. Retrieved from <https://medium.com/cashlink-crypto/ico-funding-has-overtaken-angel-seed-venture-capital-c44affbb6dd3>

Our mission is to help bring creative projects to life. (n.d.). Retrieved June 10, 2019, from
<https://www.kickstarter.com/about?ref=global-footer>

Russell, Jon, and Mike Butcher. “Telegram’s Billion-Dollar ICO Has Become a Mess.”
TechCrunch, May 3, 2018.
<https://techcrunch.com/2018/05/03/telegrams-billion-dollar-ico-has-become-a-mess/>

Suster M. (2019, February 13). Why Has Seed Investing Declined? And What Does this Mean for the Future? Retrieved from
<https://bothsidesofthetable.com/why-has-seed-investing-declined-and-what-does-this-mean-for-the-future-6a9572357130>