

White Paper

openANX – Real World Application of Decentralized Exchanges V2.3.8

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Table of Contents

1 INTRODUCTION 4

1.1 Background 4

1.2 Current Problem 4

1.3 openANX 5

2 CURRENT SECONDARY MARKET STRUCTURES – MOVING FROM CEM TO DEM 7

2.1 Historical Centralized Exchange Model (CEM) 7

2.2 Emergence of the Decentralized Exchange Model (DEM) 9

3 THE OPENANX PLATFORM 10

3.1 Overview/ Objectives 10

3.2 Market Infrastructure 11

3.3 Credit Risk Markets 12

3.4 Liquidity Aggregation 13

3.5 The openANX User Journey 13

3.6 Technology Platform 14

4 THE FOUNDATION AND GOVERNANCE 16

4.1 The Dispute Resolution Process 16

4.2 OAX Token Sale 16

4.3 Token Allocation and Distribution 16

4.4 Restriction on the use of the funds 17

5 THE OAX TOKEN 18

5.1 Uses of OAX Tokens 18

5.2 Membership 18

6 THE TEAM 20

7 CONCLUSION 21

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Abstract

With improvements in the Ethereum blockchain ecosystem brought about by state/payment channel developments and decentralized governance methodologies such as boardroom.to, significant functional improvements can be considered to the entire Centralized Exchange Model ("CEM"). Key to this concept is the deployment of a new decentralized exchange platform that allows transparency for end users, holds collateral for participating gateways and provides a predetermined channel for dispute resolution. Current centralized exchanges are opaque, closed systems with limited visibility of security and access protocols, while the first generation of decentralized exchanges fail to adequately provide liquidity and trade volume for users. This white paper provides the pathway to a new, significantly improved platform governed by a decentralized autonomous organization ("DAO"), which in turn shall be developed by the Open ANX Foundation (the "Foundation"), a non-profit foundation. Furthermore, we shall explore the importance of governance and transparency required of any exchange system in order for it to be effective. The paper will provide an outline of the openANX project ("openANX" or the "Project"), milestones in the development, and delve into the requirements needed to ensure that the project avoids the pitfalls of previous decentralized exchange developments.

Key Words: Blockchain, Raiden, 0x, ANX, decentralized, openANX, OAX, exchange, cryptocurrency exchange, cryptocurrency

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1 Introduction

1.1 Background

In regard to cryptocurrencies ("crypto"), the prevailing general reference to "centralized exchanges" is arguably misleading and inaccurate as there is no transfer of legal ownership or title taking place when participants (i.e. account holders) act to buy or sell crypto on an exchange. There is also no record of the participants' actions on the blockchain and there is no back office settlement between the participants. Rather, for example, when selling a Bitcoin that was previously deposited in an account with an exchange, the seller has operationally and economically traded a "Bitcoin IOU" issued by the exchange for a "fiat IOU" issued by the same exchange, and the transaction is recorded internally in the exchange's accounting ledger. Existing "centralized exchanges" in a sense are not exchanges at all.

With current centralized exchanges, users hold fiat IOUs and Bitcoin IOUs issued by the exchange in the form of their account balances and do not have actual possession of the underlying assets. Depending on the terms and conditions of the exchange and whether it operates segregated accounts, in some instances the Bitcoin IOU is not even for a claim on a Bitcoin but rather for the fiat value of the Bitcoin in a liquidation; and as previously experienced the exchange may not even have the Bitcoin on hand to settle all of the outstanding Bitcoin IOUs that it has effectively issued to account holders.

1.2 Current Problem

The counterparty credit risk of these IOUs is the crux of the problem with unregulated centralized exchanges. The lack of operational and financial data prevents the users from being able to properly assess and evaluate the counterparty risk and more importantly to appropriately price this assumed risk. As it has been shown time and time again, in black swan events, debt defaults, bankruptcies, etc., when there is a lack of information and transparency, market participants tend to significantly underprice the risks they are taking on and therefore do not make optimal decisions and are not being adequately compensated for those suboptimal decisions. On the other hand, in return for assuming these risks, these exchanges provide valuable functions to users – they provide a platform for price discovery, varying degrees of liquidity and a means for the exchange of economic exposure. Participants also avail themselves to a number of critical and practical services – they are able to transact in fiat, store fiat and crypto with varying degrees of security, execute foreign exchange transactions, send fiat remittances, resolve disputes, access help desks, make withdrawals or purchases via debit cards, comply with AML/KYC requirements, etc. And while these services are critical to a functioning exchange ecosystem, it is likely that participants are paying too high an implied economic price for these services as they have underpriced the counterparty risk of the IOUs they have assumed due to lack of financial and operational transparency.

Beginning in 2016 and accelerating through 2017, there have been an increase in the number of initiatives to launch "decentralized exchanges" with the primary and oftentimes sole objective of eliminating the counterparty credit risk exposure participants assume with a centralized exchange. The premise of many of these initiatives is that through the use of

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smart contracts, participants are able to maintain possession of tokens and by being able to transact via the smart contracts, counterparty credit risk is eliminated – and this is true for the trading of crypto pairs. But the experience of the decentralized exchanges that have been launched to date is that there is a significant lack of activity and liquidity on these platforms as not everyone is desirous, or is able, to trade only crypto pairs – these exchanges do not work for the general population. In the utopian quest of eliminating counterparty credit risk, what has been ignored and shunted aside is the critical and practical services provided by centralized exchanges that are needed for a functioning exchange system. A functioning exchange system is a microcosm of an economy, and as all economies are networks[1] the value of that network is an exponential function of the number of connected users[2]. As network externalities are critical for all networks to be functional and of value, decentralized exchange initiatives that limit or ignore the non-trading functionalities and ancillary services otherwise provided by centralized exchanges are doomed for failure.

1.3 openANX

The openANX platform will take advantage of technical developments on the Ethereum blockchain such as payment channels (Raiden[3], 0x, Swap, ERC20[4]) and utilize them to overcome the challenges faced by the current CEM. It will co-opt the strengths of the existing model to improve the existent decentralized exchange attempts by linking existing exchange platforms ("Asset Gateways") to the openANX platform and enforcing a collateralized deposit system that will provide users with a way to measure risk. It will also provide an off-chain, dispute resolution system to enhance much needed consumer protection.

By utilizing the latest technological advances and a peer-reviewed and implemented open source code, the openANX platform will integrate the strengths of the existing CEM model with the best functionality and features of the decentralized model while circumventing or mitigating the shortcomings of both systems.

In addition, by being open sourced, the project will be transparent and subject to scrutiny and input from users and the wider community. In lieu of a centralized authority (government or regulator) the only way to enforce transparency is to write it into the blockchain itself.

The initiative will offer gateway services and bridging to secondary, decentralized markets (exchange services) for Ethereum ERC20 tokens. These Ethereum tokens can be in the form of *native Ethereum tokens* (such as tokens for other DAOs), or tokenized representations of off-blockchain assets.

[1] Economides, N. – Stern, NYU – "The Economics of Networks" http://bit.ly/2b3Puok
[2] Hendler, J. Golbeck, J. – University of Maryland – "Metcalfe's Law, the Web 2.0 and the Semantic Web" http://bit.ly/2qF8kKJ
[3] "What is Raiden?" http://raiden.network/
[4] "ERC Token Standard: GitHub" https://github.com/ethereum/EIPs/issues/20

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The key deliverables of openANX are to:

- Migrate existing exchanges to the role of collateralized Asset Gateways, bridging fiat to tokens in a collateralized, transparent manner
- Provide credit risk trading to allow price discovery and a market "voice" of gateway creditworthiness
- Provide dispute resolution to access collateral in the event of disputes
- Aggregate order books using ANX International's ("ANX") proprietary "aggregation liquidity IP", and merging the liquidity of participating Asset Gateways
- Complement the wave of "token only" decentralized matching engine projects which otherwise would not have fiat support, and hence further increase liquidity, and accessibility for the general public
- Both order book and Peer-to-Peer ("P2P") Over the Counter ("OTC") order matching
- Migrate ANX International's existing user base to the new platform, ensuring a critical mass of initial users; and then growing a consortium of new and existing exchanges committed to migrating to the openANX model

Note that P2P OTC is also a feature of openANX which will allow users to trade directly via a quick and negotiable private channel, which is an additional option to the traditional order book paradigm.

Through the establishment of the Open ANX Foundation, ANX has undertaken the initial launch of the project, and will contribute the use of any held relevant software IP (such as order matching and cross book shortest path protocols).

Finally, it should be noted this should not be considered as an "ANX" project. The source code is open source, the Foundation is non-profit, and most importantly all existing and new exchanges are encouraged to join. openANX is completely open in every sense of the word, and the system is designed to be self-governed by its community of users.

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2 Current Secondary Market Structures – Moving from CEM to DEM

2.1 Historical Centralized Exchange Model (CEM)

The current paradigm of the CEM began with Mt. Gox[5], and has developed and matured to reach the status quo. The CEM allows companies to provide services for users to buy/sell tokens, or exchange them for other assets through a central gateway platform for a fee. Proceeds from these activities ensure the service provider in return offers customer support, security and a suite of product offerings. The strengths of the system have developed over time to coalesce around banking relationships (the ability to turn BTC or ETH into cash) and providing liquidity. However, with repeated security breaches in various exchanges and poor management, public's faith in the CEM system is increasingly waning. The fundamental question is one of trust – without an effective way to measure risk, users tend to under-price its potential.

However, there are deeper underlying issues other than security concerns and lack of trust. First among these is a lack of a mature infrastructure, and a system skewed in its design to reward "early adopters", be it an exchange, an information site or other service provider. This makes it difficult for interested new entrants to gain access to information which would allow them to objectively assess risk and engage in digital token trading reliably.

Secondly, and equally important, is the reputational issue[6]. While much of the popularity of digital tokens are due to their decentralized nature, this fragmentation exacerbates many of the CEM's inherent flaws, such as the lack of regulation and transparency, security risks, possible overextension of asset classes, and an opacity regarding creditworthiness and credit risk for token holders dealing with these exchanges. These shortcomings are major obstacles in the next development and widespread adoption of the digital token class as a whole.

In summary, centralized exchanges provide valuable services by acting as asset gateways. They allow the offering of multiple levels of market activities that cannot be matched by decentralized exchanges. However, these strengths are offset by a number of significant weaknesses, including the possibility of substantial financial loss, as well as the reputational damage to the digital tokens ecosystem. Each failure, be it Bitfinex[7] or others, impact all users indirectly and reduced the valuation of the market as a whole[8], by damaging the credibility of digital tokens as a reliable medium of exchange.

The key weaknesses in CEM stem from:

1. Custody of customer digital tokens (private keys)
2. Corresponding credit risk to customers upon security or fraud incidents
3. Lack of consumer protection and avenues for dispute resolution
4. Lack of transparency of finances to allow customers to assess credit risk

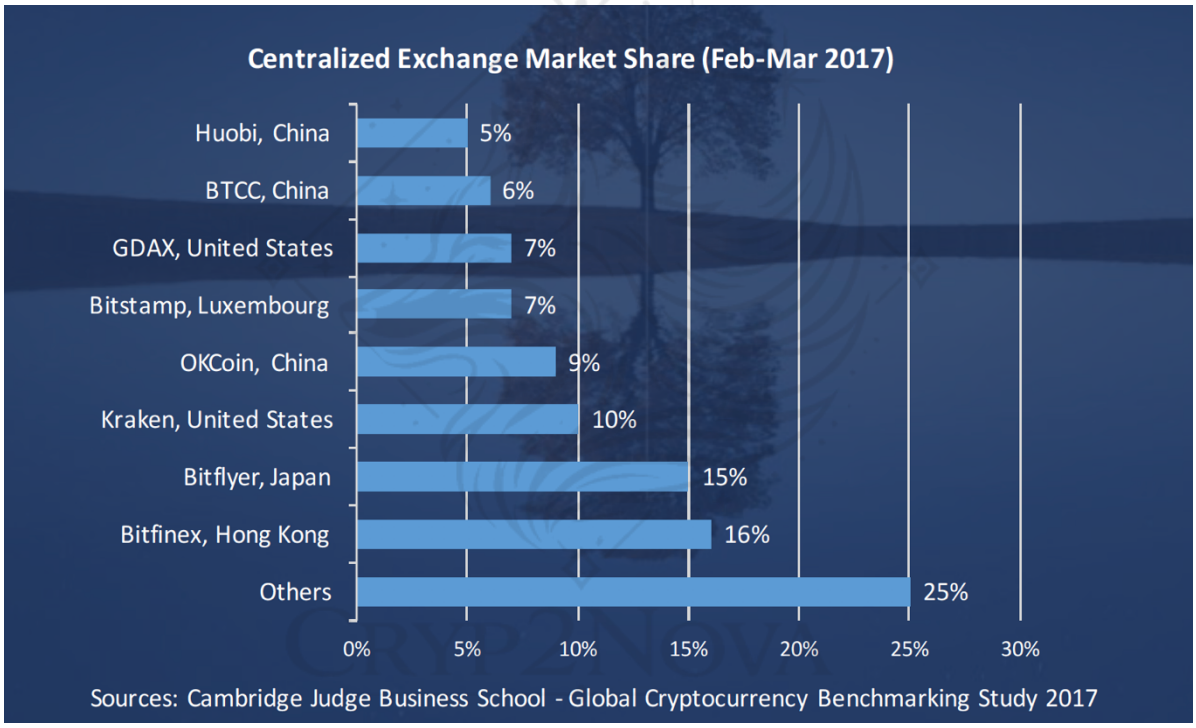
[5] Mt. Gox Overview- https://en.wikipedia.org/wiki/Mt._Gox
[6] Department of Homeland Security – "Cryptocurrencies" - http://bit.ly/2q4Dvwm
[7] Coindesk – "Bitfinex Bitcoin Hack – What We Know and Don't Know" - http://bit.ly/2aUYzP8
[8] "Baker, J. - Bitcoin Market collapses after hack" - http://bit.ly/2q0yBTg

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5. Opaque closed source code and centralized data stores
    1. Each develops their own exchange, deposit, withdrawal and security software; these are typically not open source (with no or limited audits)
    2. Metrics and order data within centralised exchanges are not visible to customers, it is unclear to market participants if the reported data is true and complete
6. Fragmented liquidity as the proliferation of exchanges results in separate trading pools

If we look at the list of the most widely used exchanges[9], we find that the virtue of market dominance is driven by aggregation and accretion over time, the clear majority of trade volume is handled by a small number of players.

Currently, most transactions run through approximately 20 centralized exchanges, with the majority running through 8, namely:



Of the top 8, a significant number have suffered from hacks. In fact, with total losses in excess of $1.7 Billion USD, over 2% of all digital assets have been stolen, the majority from centralized exchanges. The common assumption that the larger players should be more resistant to these malicious hacks due to having greater resources and better security has been disproven. In addition, the idea that if an exchange keeps a low profile and attempts to tread a "middle path" it may avoid attracting the attention has also been proven false.

[9] Cryptocoin Charts - https://www.cryptocoincharts.info/markets/info

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2.2 Emergence of the Decentralized Exchange Model (DEM)

The shortcomings of centralized exchanges have seen a number of decentralized exchanges emerge. These largely fit into two categories; those that handle native fiat currencies, and those that handle only pure digital tokens.

A number of pure decentralized digital token exchanges and protocols are starting to appear, notably on-blockchain markets such cryptoderivatives.market, and off-blockchain protocols such as 0x and RAIDEN for single blockchain token trading.

For cross blockchain exchange, the emergence of the Lightning network for cross blockchain atomic swaps is promising.

These initiatives are becoming broadly accepted by the industry as the likely future of pure native digital currency token trading. Each has benefits and disadvantages, but all lack fiat currency bridging, which is needed to bring mass market adoption of decentralized exchange technology.

The closest fiat currency solution for these exchanges are modelled along the lines of Tether, where each tokenized unit of currency is reportedly held in custody. There is however some level of industry unease with regards to the transparency of data, and consumer protection with these types of solutions. Regardless of industry perception, there is clearly a degree of credit risk for customers of Tether style solutions, with entity, banking, and perhaps sovereign risks with little recourse.

The lack of convenient and safe fiat currency bridging almost certainly contributes to the lack of liquidity in pure digital token exchanges, in comparison to the incumbent centralized exchanges.

The other category of decentralized exchanges focus on the fiat currency problem. Various platforms such BitSquare have emerged which support fiat currency and digital token transactions; however, these exchanges have not managed to gain the critical levels of liquidity and trade volumes to supplant the centralised exchanges. The need to perform fiat settlements on a one to one basis to transactions is one reason for this. Highly liquid markets require the presence of market makers and arbitrage traders. These market participants require the ability to trade frequently, with a much higher frequency than that supported by trades linked to legacy financial services payment latencies.

The challenge then, is to solve the centralization problem while avoiding the pitfalls of existing, decentralized exchanges, such as low liquidity and a lack of choice when it comes to ancillary services such as Asset Gateway's and off-chain assets.

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3 The openANX Platform

3.1 Overview/ Objectives

The openANX project is different from pure decentralized exchange initiatives as it recognizes that non-trading ancillary services are required for attracting the critical mass of users required for a functional ecosystem network. Central to openANX is the integration of emerging decentralized exchange protocols to a mechanism that provides transparency as to the counterparty credit quality of service provider participants (i.e. Asset Gateways).

While price discovery and trading transaction execution can be achieved through smart contracts, the practical reality is not all trading exchange functionalities can be decentralized. These services are required in order for an exchange to achieve critical mass the next best solution is to provide the means for appropriate risk assessment of these Asset Gateways. By making available risk assessment indicators (including but not limited to the posting of collateral, membership levels, verified identification information, and other records onto the blockchain) and formalizing defined dispute resolution mechanisms (also inserted onto the blockchain), participants are provided with transparent access to important information needed to evaluate the credit quality of Asset Gateways. Importantly, unlike with the centralized model, the Asset Gateway never holds crypto-keys to both assets – for example with a fiat gateway, the gateway only holds fiat currency in any transaction scenario; the user retains crypto custody, significantly reducing user risk.

Participants are therefore able to make optimal decisions with regards to not only trading prices but also the counterparty risk they are willing to assume for non-crypto pair trading. These features of openANX enable the execution of more than just crypto pair trading and will therefore attract trading participants to drive volume, price efficiency and liquidity, which in turn draws other market participants who provide additional useful functions to the network economy. These would include not only existing centralized exchanges who bring their existing transaction volume, but also other participants such as rating agencies who evaluate Asset Gateway creditworthiness and credit risk arbitrage traders who effectively provide market pricing.

Open source, decentralized, transparently governed exchanges will eventually dominate the crypto currency market. With the increasing maturity of the Ethereum Network, Raiden and governance frameworks such as boardroom.to, that vision is increasingly viable. openANX, aims to create a truly open source and decentralized platform that uses a hybrid model to integrate the key strengths of the existing CEM with key enhancements such as credit risk assessment, structured dispute resolution and a collateralized deposit system to empower users, providers and third parties to properly evaluate the uncertainty that has long been a part of the marketplace.

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3.2 Market Infrastructure

The openANX platform will consist of the following market participants:

- Exchange users
- Asset Gateways
- Order book sponsors
- KYC/AML services
- Dispute referees
- Voting members

Exchange users are users who wish to participate in the exchange, using the services for native token trading or for real world asset trading. Exchange users of real world assets will require a relationship with an Asset Gateway. In most jurisdictions, Asset Gateways are obliged to perform KYC[10] and AML in order to operate legally and maintain the necessary relationships with financial services suppliers such as banks.

Asset Gateways take into custody real world assets such as EUR or USD fiat and in turn mint ERC20 tokens onto the blockchain. Note that these tokens are not "generic" USD tokens, rather the tokens are specific to the issuing gateway, for example ANX may issue ANXUSD tokens.

Before receipt of funds and issuance of tokens, most Asset Gateways will first request a KYC/AML service be performed on any user receiving these real-world assets. This is done by the nomination of a KYC service smart contract address as part of the Asset Gateway registration.

When a user establishes a relationship with a gateway, the gateway will first direct them to one or more KYC services. The KYC service will provide a KYC rating, which is registered into the openANX DAO. Note that no physical documents or other materials are stored on the blockchain, merely an Ethereum address. The KYC service will stipulate a KYC level, and validity date range through the KYC API.

Once a user has satisfied the KYC requirements, the gateway can release the token to the user. Gateway tokens generally require one of the following:

- No KYC at all (tokens can be transferred to or from any valid Ethereum address)
- Boundary KYC (tokens can only be minted to, and redeemed from, KYC'd addresses, however minted tokens can be freely transferred between addresses), or
- Full KYC (tokens can only be minted to, redeemed from, transferred amongst, and exchanged with addresses that maintain the stated KYC service approval)

Asset Gateways will be afforded varying KYC parameters according to their requirements. Many Asset Gateways are expected to register and supply their own KYC service

[10] "Global Cryptocurrency Benchmarking Study – Cambridge University Centre for Alternative Finance - http://bit.ly/2q1WmtY

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implementation, as in some jurisdictions it is difficult or undesirable to outsource KYC to a third party.

Where outsourced KYC is possible, significant economies of scale are expected with Asset Gateways sharing KYC/AML service providers.

When Asset Gateways register for service, they will stipulate the KYC smart contract, KYC level, and token operational rules as per above. They will also pledge native Ethereum collateral onto the blockchain, which will be time locked by the openANX DAO. This collateral serves to protect consumers; it can be released as the resolution of dispute resolution, to users of the gateway in the event of a credit event.

In the future, the time locked collateral could generate fees through powering state channels or staking; however, this is purely speculative at the current time.

With the availability of transparent, locked collateral, and transparent token issuance, users can form quantifiable views on the creditworthiness of Asset Gateways. Note that the existing best practices are still recommended, i.e. Asset Gateways should hold customer funds in custody, in a non-fractional, audited manner. It does, however, offer a concrete and quantifiable means for users to price the credit risk.

3.3 Credit Risk Markets

Pricing of credit risk is a key activity in any normal financial marketplace[11]. In large institutional trading desks, each deal is broken up into smaller internal constituent deals; which some trading desks focus on pricing the market risk of some assets, whilst other trading desk focus on the credit risk. The profitability of a deal is then attributed to the credit and market risk desks individually.

The ability to trade credit risk is notably missing from current crypto markets[12]. openANX will support "Credit Risk" order books. In this manner, an ANXUSD token can be traded against another gateway's tokens (say perhaps AcmeUSD). For example, ANX may have a strong public brand, and high levels of collateral locked up in the DAO relative to issue tokens, whilst Acme has an unknown brand and low levels of collateral. The ANXUSD/AcmeUSD order book allows these two tokens to be traded against the other, forming the basis for a credit risk trading market within the crypto marketplace. The pricing of these credit risks further provides users with another objective measure of counterparty risk.

Order books are opened by the DAO on the request of a sponsoring user. Often the Asset Gateway itself will sponsor an order book for its tokens, for example the ANX gateway would open an ETH/ANXUSD order book.

With the ability of Asset Gateways to register their tokens and sponsor their own order books, the barriers to entry for gateway operators will be significantly lowered. The

[11] Kao, D. – CFA Institute - "Pricing Credit Risk" - http://cfa.is/2q3cFVH
[12] Ghosh, R. - Carey Business School – "Bitcoin or Ethereum? The Million Dollar Question" - http://econ.st/2qYXq06

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introduction of openANX should see many new gateway operators entering the market, with varying levels of credit quality and jurisdictional/asset support. These new players will help power the mass adoption of cryptocurrencies into the wider (non-crypto) community, as by utilizing open source "best practice" systems of openANX, they will provide greater competition and ease of access for users.

Credit risk order books, trading gateway tokens against each other, will greatly improve price discovery to the market.

This situation by itself is better than the current landscape of centralized exchanges, as there will be greater competition and choice for users, with more transparent credit risk, and collateral pledged on the blockchain to provide a safety net in the event of a credit risk event or dispute.

3.4 Liquidity Aggregation

It can be argued however that the biggest hurdle to entry for new exchanges is liquidity. Liquidity refers to the amount of traded assets available on the order books of an exchange. A highly liquid exchange could allow a large deal to instantly trade, whilst barely impacting the price. Liquidity has a strong network effect, as soon as one exchange or venue becomes the largest in terms of liquidity, it quickly attracts more liquidity until other exchanges cannot compete. This has arguably resulted in a small group of centralized crypto exchanges dominating the market place for a period of time, until such time as a legal, security, or credit event halts operations.

The openANX platform overcomes this issue through the application of order book aggregation, coupled with credit risk trading books.

Consider the situation where there are three order books:

1. ETH/ANXUSD
2. ETH/ACMEUSD
3. ANXUSD/ACMEUSD

By themselves order books 1 and 2 reflect individual fragmented pools of liquidity.
If there is an active credit risk order (i.e. book 3), matching logic call match trades by combining the three order books into a single order book with simple graph.

In this fashion, an active credit risk order book can transform small individual exchange pools of liquidity into a single large order book. This approach may at last bring about the liquidity network effect to turn a decentralized, open exchange into the dominant source of exchange liquidity.

3.5 The openANX User Journey

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Users on openANX who are seeking to on-board fiat currency to the blockchain will initially require the services of an asset gateway. The availability of public credit risk and collateral metrics should assist users selecting an appropriate gateway.

The user can be expected to register through online services specific to each gateway, similar to the current situation with centralized exchanges.

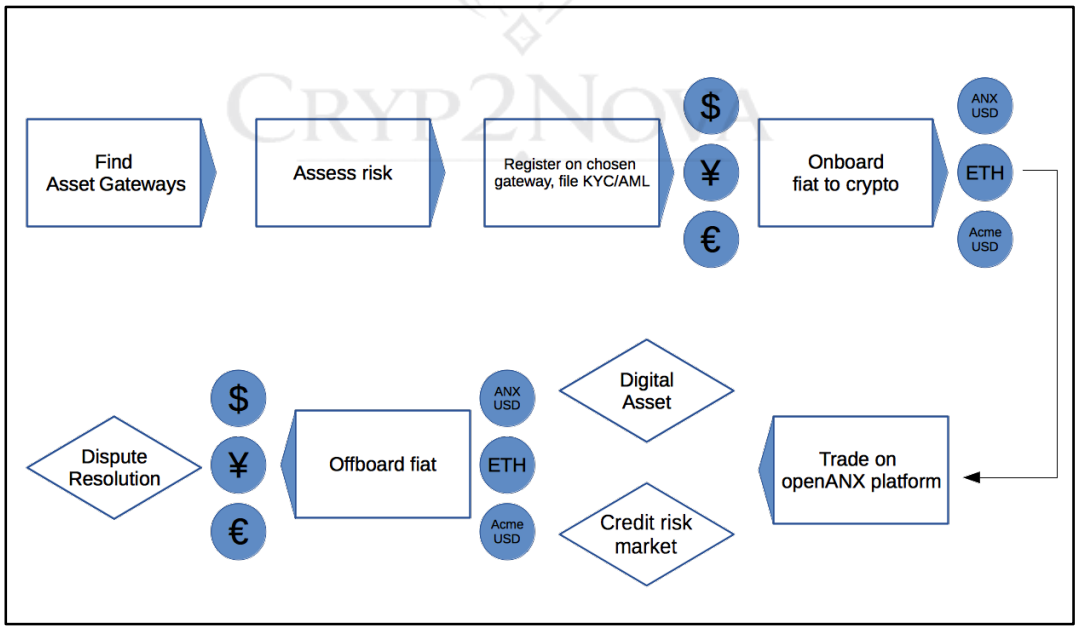
Gateways in most jurisdictions will require some level of KYC and AML; the user will then be directed to such a service, either within the Asset Gateway, or to an external service provider if the Asset Gateway utilizes a third party.

Upon KYC/AML approval (if required by the Asset Gateway) the user may use the payment methods supported by the Asset Gateway to deposit funds. The Asset Gateway will then mint its own specific (at least partially collateralized) ERC20 tokens.

The user will then have the option of trading through a decentralized user interface provided by openANX (i.e. a Mist or Coinbase Token application) or trading their freshly minted token directly with any of the available ERC20 decentralised exchanges.

It is expected that the user will typically use the openANX trading interface, as the order book aggregation across multiple asset gateway tokens will allow access to a more liquid pool for the conversion of the token into ETH or other major cryptocurrencies available on the platform.

Eventually the asset gateway token holder can be expected to off-board their tokens back to real world assets. This is conducted by redeeming the token to the asset gateway through the openANX user interface, at which point they would be contacted by their asset gateway.



3.6 Technology Platform

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The technology platform to be delivered by openANX is as follows:

- A specification of the market operating model as described in the previous section
- Ethereum smart contracts to govern and operate the market as specified
- Integration with one or more exchange channels (notably Swap, Raiden, or 0x) to support matching
- API for each off-chain intersection with gateway functions, trading, KYC, order book registration, dispute resolution, DAO governance and upgrade of services or the platform
- A standard, reference implementation user interface to allow account management and trading (it is expected the community will also provide additional user interface implementations as the platform is entirely open)

Further details on the prospective technical aspects of the project and their future development, refer to the "openANX Technical Whitepaper".

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4 The Foundation and Governance[13]

As a company limited by guarantee established in Hong Kong, the Foundation's primary objective is to promote the real world application of the openANX platform. It also aims to initially develop the openANX platform and advocate governance and transparency for the platform. The Foundation will establish an association consisting of members of the openANX ecosystem, which will be empowered to determine the direction of functionality and improvement to the openANX platform and associated ecosystem.

4.1 The Dispute Resolution Process

The Foundation will specify a dispute resolution process, utilizing an internationally accepted dispute resolution system. A rotating board of dispute referees will monitor disputes through the resolution process, and oversee collateral release to plaintiffs. Note that this board of dispute referees is not the dispute resolution process specifically; rather it is the mechanism through which dispute resolutions can be enacted through the release of collateral on the blockchain.

4.2 OAX Token Sale

The Foundation will fund the development of the openANX decentralized exchange discussed in this paper through the issuance of OAX tokens. These tokens will run natively on the Ethereum blockchain and will be offered to backers of the openANX project via a token sale. The token sale will be launched on or about the 22nd June 2017. A second token sale will take place once the initial prototype has been developed and tested to fund its deployment. For more information on the OAX token, see Section 5.1 – Membership.

4.3 Token Allocation and Distribution

The supply of OAX is limited to the number of one hundred million (100,000,000) in total (including those available for sale during the Token Sale) and will be generated upon the launch ("Token Launch").

The tokens will be distributed in the following manner:
80% (30/30/20) of the tokens will be eventually allocated amongst the community; the remaining 20% will be allocated to the Foundation initiator, early backers, and the development team.

[13] Renz, D. - "Nonprofit Governance and the Work of The Board" - http://bit.ly/18RHS36

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OAX Token distribution model

Channels	Percentage	Locked up period
30,000,000 OAX Open Token Sale (OTS)	30%	Token Sale – Launch 22nd June 2017 The initial funding will be used to develop a working prototype, financial setup, legal fees and promotion.
30,000,000OAX Additional Token Sale (ATS)	30%	Additional Token Sale On the release of a successful prototype, a second token sale will be launched to fund the full production ready launch and development of all relevant technology and organization matters.
20,000,000 Retained by the Foundation as Treasury	20%	100% of which locked for 24 months Strategic Planning, Project Support, Token Swap, Emergency Fund, Development & Legal Fees - These will be subject to a 2-year lock-up. Subsequent to the lock-up, these will be used for various development and operation costs of openANX over 2 further years.
20,000,000 Advisors, Directors and Early Backers	20%	70% of which locked for 12 months 30% of which locked for 24 months Distributed to the directors, advisors, and early backers of the project.

4.4 Restriction on the use of the funds

To remain in line with the spirit of the project's open and transparent philosophy, all funds shall be tracked and reported according to the Foundation's guidelines. A custodian will monitor the usage of the digital tokens and share it with the community periodically.

1. **Financial planning and reporting**
   - The Foundation shall develop financial planning and review financial performance of the previous quarter.

2. **Digital tokens management**
   - The digital tokens belonging to the Foundation shall be managed by authorized personnel. The security of digital tokens is ensured by multi signature technology.

3. **Digital wallet protocol**
   - The Foundation's digital wallet shall be protected by a multiple signature technology mechanism.

4. **Disclosure**
   - On a regular basis, the Foundation shall disclose on the topics regarding community matters, including status of development, operations, and the usage of tokens, as well as whether the Foundation operates in accordance with the governance policy.

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5 The OAX Token

The OAX token (OAX) is a native Ethereum divisible digital token with up to 18 decimal places. The total number of OAX tokens to be issued is 100,000,000. For details of the distribution of these tokens, see Section 4.3 - Token Allocation & Distribution.

5.1 Uses of OAX Tokens

OAX is a token that can be exchanged for memberships in the DAO and/or its association. Members will be entitled to certain privileges, including but not limited to voting privileges on major operational decisions relating to the openANX platform. Members are not entitled to any economic rights of the Foundation at any time and Memberships do not entitle the holder to any distribution of profits nor any claim on any assets. Memberships are not provided with any right of redemption although memberships are transferable.

Any tokens exchanged for memberships shall be destroyed. In addition, to the extent that excess funds are generated by the openANX platform from transaction and other fees, a RNG algorithmic process will be initiated by the openANX platform to expend such excess funds to acquire OAX which may be trading on secondary markets. Such acquired OAX shall be destroyed. As there is no inflation of the number of OAX the cumulative effect of these two processes is that as activity on openANX increases, the supply of OAX will decrease.

While it is a core belief that the openANX platform be open to all, users will only be able to influence policy through voting privileges, which will be conveyed through Memberships and OAX tokens form the method whereby users gain access to Memberships. If users wish to gain access to voting privileges, or become a third-party service provider including but not limited to the following areas; KYC, Asset Gateway, or other service, some form of Membership will be required.

5.2 Membership

Membership provides the holder with access to the openANX platform, and may convey voting privileges and other benefits as outlined below. The memberships will work through a tiered structure that allow for simple access, voting privileges or commercial (read: business) solicitation of services on the platform (e.g. escrow, legal, exchange, credit, asset gateway) with the relative number of tokens required for redemption varying with the level of benefits.

Token holders who apply for and receive Memberships will submit the tokens alongside the application and upon acceptance, the submitted tokens shall be destroyed. This process will cause a reduction in the size of the OAX token pool (deflation) over time.

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Membership Scale (in order of relative number of OAX tokens required for exchange)

Participant Member	TBC
Voting Member	TBC
Founding Member	TBC
Third Party Service Provider Member	TBC
Asset Gateway Member	TBC

Participant Membership – Participant members include, amongst others, wholesale and retail traders who desire to access the openANX platform for transaction purposes. A Participant Membership is the basic level of Membership.

Voting Membership - A voting member shall have the privilege to vote on decisions regarding the openANX platform. These votes shall be determined via the Foundation's terms and shall be communicated to the Membership through the Foundation's website (www.openanx.org) and via social media and online channels.

Founding Membership - A founding member shall have all the privileges of a voting member. In addition, a founding member shall have the right to suggest topics for upcoming discussions.

Third Party Service Provider Membership - Third party members will be entitled to provide services within the ecosystem. They will include: KYC service providers, trading system providers, legal or smart contract vendors or other services as yet undetermined.

Asset Gateway Membership – An Asset Gateway member gains all the privileges of a Third-Party Member and in addition, is granted the right to offer their services as a provider of token-to-fiat currency, multicurrency exchange, or token-to-token exchange.

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6 The Team

The project team of openANX encompasses a group of highly experienced innovators who are passionate about crypto and its future, as well as some of the industry's brightest legal and business minds. Full details on www.openanx.org.

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7 Conclusion

The current market system of centralized exchanges and decentralized platforms is inherently flawed. While both have their relative merits, the weaknesses of both approaches limit their potential to service the rapidly developing crypto market and are a hindrance to widespread adoption of crypto. What is needed is an evolutionary system, one that combines the relative merits of both approaches, is open, transparent and uses a decentralized structure of governance that is written directly to the blockchain. Such a system would use a system of collateral to provide measured security and safety of funds for all users, while providing transparency for all parties. By providing a clear method of evaluating risk, it would open new markets for both credit and services that would benefit the community.

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Glossary

1. Altcoin: Altcoins are cryptos other than Bitcoin. Common altcoins are Ethereum (ETH), Dash, and Ripple (XRP).
2. Bitcoin: A crypto and a payment system invented by an unidentified programmer, or group of programmers, under the name of Satoshi Nakamoto.
3. CEM: Centralized Exchange Model - The existing dominant model of crypto exchange. A single, private, limited corporation hosts and handles all aspects of the exchange platform and trading, including security, KYC and data management.
4. Cryptocurrency: A digital currency that employs cryptography to handle transactions and regulate its corresponding currency units, working independently of a central bank. Also sometimes referred to as digitized tokens.
5. DAO: Decentralized Autonomous Organization, also known as decentralized autonomous corporation. It runs through rules encoded as smart contracts.
6. Decentralized exchange (DEX): A mechanism or platform that executes transactions without a central party to hold relevant records.
7. Digital token: Any resource existing as a binary format and granting any of its users the privileges to use.
8. Distributed Ledger Technology: DLT for short, it is technology that facilitates sharing of digital data across physical points without being administered centrally.
9. Ethereum: A public blockchain-based distributed computing platform, featuring smart contract functionality.
10. Fiat (Fiat currency): Known as fiat money, it is a traditional currency established and regulated by law.
11. Multicurrency exchange: A mechanism or platform that allows different kinds of currency to undergo transactions.
12. Off-blockchain tokens: The value of the transactions operating outside the blockchain.
13. Off-chain architecture: The structure of a system that is available for transactions undergoing outside the blockchain.
14. Open source: A source that is made thoroughly accessible for the public.
15. Public chain: A blockchain which can be used and accessed by the public.
16. Self-governance mechanism: A mechanism that is able to regulate all by itself.
17. Smart Contracts: Smart contracts are computer programs that autonomously execute the terms of a contract.
18. The Lightning Network: A decentralized network that makes rapid off-chain transfer of Bitcoin ownership possible.
19. Token: A representation of digitized values.

With thanks to: Jehan Chu, Chandler Guo, Thompson Shi, Henry Yu, Peter Smith, Bok Khoo, Frasier Wang, Ivan Chan, Ming Yan Cheung, Antony Challinor, Clara Chen, Sawyer Zhang, Eliott Lopez, Felix Lai, Jack Liao, Amanda Tung, Janee Lok, Peter Bainbridge, Jack Cheng, Yann Carlier, Wilson Yip, Claudia Lau, Vivian Leung, Franco Ng, Carl Leung, Simon Leung, Evan Fan, Joyce Shen, Charlene Ng, Cerulean Hu, Kurt Tsang, Alex Wu, Thompson Shi, Brett Lettice, Christine Sze, Peter Yau, Louis Chan, Patrick Bartolome, Kathy Cheng, Shepard Pin, Billy Yip, Andy Lin, Yan Tung, Lucia Suen, Joseph Marcilla, Tom Chan, Brian Liu, Max Jackowski

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Appendix 1 – About ANX International

ANX International ("ANX") is a privately held company founded in 2013. ANX owns extensive proprietary intellectual property ("IP") and employs 90 full time staff to run its many lines of business[14]. Throughout the 4 years since inception, ANX's exchange platform ("ANXPRO") has never suffered a security breach resulting in lost customer data or assets.

With a strong team, vast experience and significant IP linked to Exchanges, Order Matching and Infrastructure, combined with a wide network of relationships amongst the crypto community, ANX is strategically situated to lead a project of this scope, in addition to ensuring that the exchange maintains healthy levels of liquidity and trade volume required to entice professional traders, buyers and sellers and industry players to utilize the exchange.

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[14] Including Bitcoin debit cards, a retail Bitcoin exchange, and its software-as-a-service ("SaaS") offering, ANX Blockchain Services ("ABS"). ANX operates one of Asia's longest running exchanges ("ANXPRO").

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