

WHITE PAPER

**XTRD**

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# Abstract

As of January 2018, there are over 120 standalone cryptocurrency exchanges, facilitating trading in more than 1000 individual markets. Daily trading volume for cryptocurrencies is now equivalent to 20 billion USD, with a total market cap of over \$700 billion. The majority of the trading is concentrated among the top 20 exchanges, denominated in multiple currencies ranging from crypto ones including Bitcoin and Ethereum to sovereign ones such as USD, GBP, JPY, CNY, and KRW, among others. Predictions point to growth toward a \$1-2 trillion market capitalization in 2018, and a corresponding 3% average daily trading volume of \$50 billion or more.<sup>1</sup>

Asset managers are beginning to see increased demand for cryptocurrency exposure in their

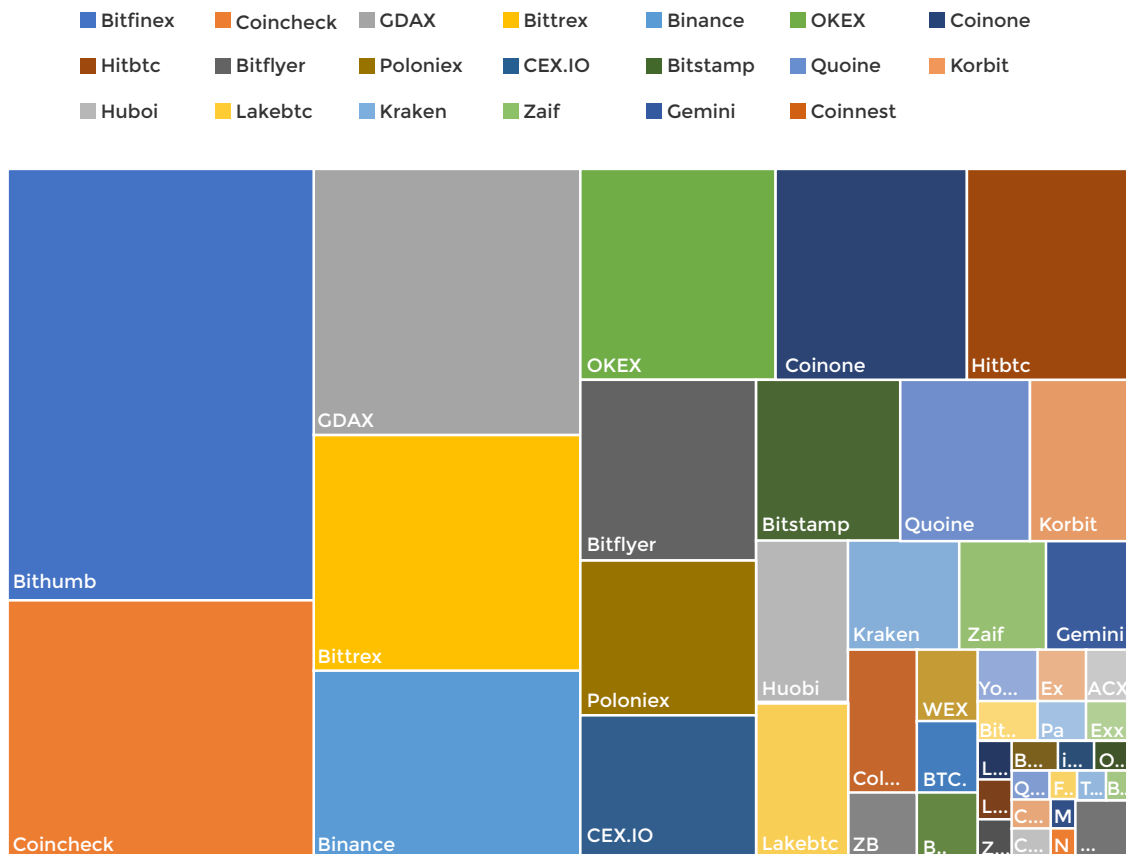
portfolios, over 500 active funds are being created to enter the market in 2018, and the regulatory climate is warming. However, the market is nascent, and large spreads are common between exchanges on the same crypto pairs, allowing for ample arbitrage opportunities that don't exist in more efficient markets.

**The inefficiency is a product of cryptocurrency trading markets being highly fractured in terms of execution, account setup, automated access, liquidity, execution speed, pricing, and security.**

XTRD was created by finance and trading professionals to solve those problems by both improving on and consolidating current trading practices.

## Crypto Exchange by Daily Dollar Volume

Top 40 Worldcoinindex.com 12/10/2017



<sup>1</sup> Moas, Ronnie. (2017). Standpoint Research.

<sup>2</sup> [Hfalert.com](http://Hfalert.com). (July 12th, 2017). Digital Currency Craze Fuels Fund Launches.



# Issues in the Crypto Space

## COMPLEX WEB OF EXCHANGES

A combination of differing KYC policies, means of funding, interfaces and APIs results in a fragmented patchwork of liquidity for cryptocurrencies. Trading in an automated fashion with full awareness of best pricing and current liquidity necessitates the opening and use of accounts on multiple exchanges, coding to multiple API's, following varying funding and withdrawal procedures. Once those hurdles are cleared, market participants must convert fiat currency to BTC or ETH and then forward the ETH on to an exchange that may not accept fiat, necessitating yet another transaction to convert back to fiat. Major concerns for market participants range from unmitigated slippage<sup>3</sup> and counterparty risk to hacking prevention and liquidity.

## HIGH FEES

Execution costs are even more of a factor. Typical exchange commissions are in the 0.1% - 0.25% range per transaction (10 to 25 basis points), but the effective fees are much higher when taking into bid and ask spreads maintained by the exchanges. As most exchanges are unregulated, there is generally no central authority or regulator to examine internal exchange orders that separate proprietary activity from customer activity and ensure fair pricing.

## THIN LIQUIDITY

A large institutional order, representing a sizable percentage of daily volume can move the market for a product, and related products in an exchange by a factor of 5-10%. That means a single order to buy \$1,000,000 worth of bitcoin can cost an extra \$50,000-\$100,000 per transaction given a lack of liquidity if not managed correctly and executed on only one exchange. By way of comparison, similar trades on FX exchanges barely move markets a fraction of a percent; those price changes cost traders money, and deter investment.

We can simulate slippage using a volume slippage model. Let's say we have an \$1,000,000 order, bitcoin is trading at \$4,000 at the one exchange, where 25 bitcoin are traded per minute. The model calculates slippage(S) by comparing order volume (Ov) to total volume(Tv).

$$S = 0.1 * \left( \frac{Ov}{Tv} \right)^2$$

The higher percent of the total volume that we order, the higher the slippage. There is only \$100,000 of bitcoin available to trade per minute. If want to fill our order quickly in 10 minutes by executing \$100,000 worth of bitcoin per minute, that will fill 100% of the volume traded in that time period and create 10% slippage. That will cost \$100,000, for an effective fill cost of \$1,100,000, or 10% net cost.

<sup>3</sup> Slippage is the difference between the price that the trader expects to pay for a trade and the actual price at which the trade is executed.

# Issues in the Crypto Space

To reduce costs at one exchange, we can try to spread the order out over time. But, since the price of bitcoin can vary significantly throughout the day, simply delaying execution time doesn't solve the price change problem.



FIGURE 1 TIME VS SLIPPAGE COST

Instead, by simultaneously routing an order to multiple exchanges, XTRD can increase the total volume that trade is executing against in a short period of time and decrease its slippage. This is done by splitting the "parent" order into smaller, "child" orders. If we still want to execute our order in 10 minutes to take advantage of current bitcoin pricing, we can reduce the slippage from 10% to 0.4% by routing our order simultaneously to 5 different exchanges. This will reduce our slippage cost from \$100,000 to \$4,000, a **96% cost reduction**.

The execution net cost is now \$1,004,000.

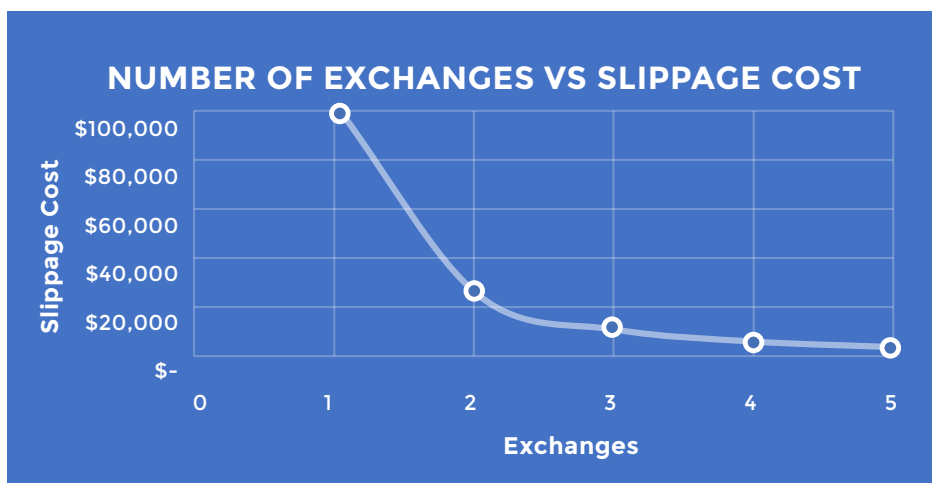


FIGURE 2 NUMBER OF EXCHANGES VERSUS SLIPPAGE COST

# XTRD Solution

XTRD IS LAUNCHING THREE SEPARATE PRODUCTS IN SEQUENTIAL STAGES TO SOLVE THE ONGOING PROBLEMS CAUSED BY HAVING SO MANY DISPARATE MARKETS: LOW PER-MARKET LIQUIDITY, UNFAMILIAR INTERFACES THAT LAG BEHIND FINANCIAL INDUSTRY STANDARDS, AND DECENTRALIZED EXECUTION IN CRYPTO

## STAGE 1 - IMPLEMENTATION OF A MULTI EXCHANGE FIX API

### What is FIX?

The **Financial Information eXchange** (FIX) protocol was created in 1992 to serve as the “universal” communication language for international financial transactions. Since all order systems are different, there was a strong need to communicate all executions between brokers, exchanges, mutual funds, investment banks, and direct market access participants using a universal format.

FIX is the standard means of communication for trading in global equity markets, and is also heavily used in currencies, bonds, and derivatives. **Every large institutional and professional market participant uses FIX to trade and has been doing so for over 25 years.**

FIX works by defining preset “tags” as value placeholders. Orders are entered by defining variables in the tags – for example the value for “side” of the trade can be a 1 for Buy or 2 for Sell, in Tag 54.

There is currently no universal FIX interface to connect to crypto exchanges – each crypto exchange has its own, though not necessarily proprietary, communication standard. Lack of a standard communication protocol hinders participants’ ability to easily access multiple exchanges.

XTRD will launch a universal low latency FIX based API connecting to all crypto exchanges to make it easy for major institutions, hedge funds, and algorithmic traders to access all cryptocurrency markets by coding to just one FIX application – in one format – with which they are already intimately familiar.

This communications bridge will allow large market participants to easily add multi exchange crypto execution to their existing transaction systems, jumpstarting universal crypto trading adoption among the institutional sector.

# XTRD Solution

Here is a FIX table to illustrate basic XTRD order entry for cryptocurrency pairs:

TAG	FIELD NAME	COMMENTS	EXAMPLE
49	SenderCompID	Unique identifier, assigned to a counterparty	49=101_411
56	TargetCompID	XTRD server identifier	56=XTRD_UAT_ORD
11	ClOrdID	Unique order ID assigned by client	11 = 1102
21	Handling Instructions	Required field, should always be set to 1(Automatic execution)	21=1
55	Symbol	Pair name to trade	55 = ETH/USD
40	Order Type	Order type to trade. Supported values: • Market(1) • Limit(2) • Stop(3)	40 = 2
44	Price	Price for Limit orders that set the price for execution	44 = 752.79999952
54	Side	Order side. Supported values: • BUY(1) • SELL(2)	54 = 1
38	Initial order size	Initial order size	Initial order size
58	Time in Force	Field, that controls Order lifecycle. Supported values: • Day(0) • Good Till Cancel(1) • Immediate Or Cancel(3) • Fill Or Kill(4)	58 = 0
100	Execution destination	49 You can explicitly specify the execution destination by providing the name of the supported exchange or utilize SMART routing rules	100=GEMINI

Let's say we are entering an order to **Buy 1 ETH for \$752.79999952 USD or better on Gemini** - a **Limit order**. Using the proper values from the table above, the raw FIX order message will look as follows:

Gemini    Ether/USD

8=FIX.4.4 9=146 35=D 49=101\_411 56=XTRD\_UAT\_ORD 11=1102 21=1 100=GEMINI 55=ETH/USD  
 460=4 **54=1** 60=752.79999952-14:32:01.601244 **38=1** **40=2** **44=752.79999952** 52 15=ETH 59=1 10=059  
**Buy** **1 Limit \$752.79999952**

Figure 3 Raw FIX Message Sample



# XTRD Solution

## STAGE 2 – LAUNCHING THE XTRD PRO TRADING PLATFORM

Most finance professionals and active traders don't use web based trading platforms to consume market data and trade. Instead, they use robust, secure, standalone, downloadable applications that allow for fast order entry, immediate execution, advanced charting, and custom order types. Those applications provide customer support including feature development tailored to their customers' demands. The most successful of these applications become platforms that are used to manage trading across multiple systems and asset classes.

In the crypto space, such a platform does not yet exist. Currently, there are only web based systems on each exchange that are slow and difficult to use. A few aggregation platforms exist that do feature trading across exchanges, but those aggregators, too, are web based and lack the low latency, security, and functionality that institutional and professional users would demand.

XTRD will launch XTRD Pro in 2018 - a highly robust, multi-exchange standalone trading platform for active traders. The platform will include, among other features, advanced consolidated order books, hotkey order entry, and custom order types, with 24x7 uptime.

## STAGE 3 – SPA (SINGLE POINT OF ACCESS) LIQUIDITY AGGREGATION/CROSS-EXCHANGE EXECUTION

XTRD creates a single unified point of access to aggregate liquidity across exchanges for traders. This aggregation allows traders to clear at the best possible prices while delivering the lowest possible transaction costs as well as atomic swap capability<sup>4</sup> all with just one client-side account.

**XTRD SPA** will be facilitated via Joint Venture (JV) partnerships with existing exchanges to minimize the regulatory hurdles as XTRD will function purely as a technology provider. Exchanges will fulfill the custodial function, while XTRD will clear balances from its inventory accounts at other exchanges to close the trades made by clients within the JV exchange. XTRD has already secured a partnership with a major active exchange that facilitates trading in primary currencies and will soon do the same for alternative ERC20 tokens.

XTRD is focused on becoming the de-facto trusted, US-based technology platform for large financial players to easily execute on crypto. XTRD will generate revenues via execution fees, market data sales, VPS services, software licensing, and other ancillary income streams. Operational funds for creating the platform and the balance sheet required to execute across multiple exchanges will be raised via a token generation event.

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<sup>4</sup> Atomic Swaps - the ability to instantly exchange one cryptocurrency for another.



#### **XTRD TOKENS**

Trading fees will be collected through the cryptographic economy, facilitated by the XTRD token. XTRD is an ERC20 compliant utility token generated on the Ethereum blockchain and will be used as a means of payment by trading participants for services provided by XTRD.

XTRD tokens will be created via a token generation event scheduled for Q1 of 2018.

#### **Staking:**

As XTRD tokens are used to pay for services on the XTRD trading network, line tokens will be cycled back into the network.

Discounts of 25% on XTRD services (execution, colocation, market data, software licensing) will be available for token holders in general and discounts of 40% on XTRD services will be available for token holders who maintain an average monthly stake of at least 50,000 XTRD tokens.

#### **XTRD will utilize the funds generated from the token generation event to:**

- Facilitate the creation of the FIX API and XTRD GUI platforms;
- Maintain a large balance sheet allowing for cross-exchange execution with XTRD SPA;
- Make markets in multiple crypto currencies to minimize spreads and increase liquidity for market participants;
- Employ legal and compliance teams to ensure regulatory compliance and proactively engage with regulators;
- Onboard sales and marketing teams to develop a client base; and
- Create a venture arm to seed emerging trading technologies in the crypto execution space deemed complementary to XTRD's mission

# Team

THE TEAM BEHIND XTRD IS BASED ON WALL STREET IN NYC AND HAS OVER 30 YEARS OF EXTENSIVE REAL-WORLD EXPERIENCE BUILDING ROBUST, BATTLE TESTED TRADING SYSTEMS IN FX, EQUITIES, DERIVATIVES, AND OTHER INSTRUMENTS. THEY HAVE SPECIALIST KNOWLEDGE IN ALL FACETS OF BROKERAGE SERVICES, EXECUTION, MARKET DATA, TRADING PLATFORMS, CLEARING, SETTLEMENT, COLOCATION, ALGORITHMIC TRADING, AND AUTOMATED TRADING SYSTEMS. XTRD PRINCIPALS AND ADVISORS OWN CRYPTO EXCHANGES - AND HAVE WORKED IN ACTIVE TRADING FIRMS ALL OVER THE WORLD AS WELL AS LARGE FINANCIAL INSTITUTIONS SUCH AS GOLDMAN SACHS, BARCLAYS, LEHMAN, DEUTSCHE BANK, MORGAN STANLEY, AND JPMORGAN IN TECHNOLOGY, OPERATIONAL, AND SALES ROLES. IN ADDITION, THE TEAM HAS STRONG ENTREPRENEURIAL EXPERIENCE, HAVING LAUNCHED SUCCESSFUL COMPANIES IN INDUSTRIES RANGING FROM FINANCE TO AI BASED VISUAL ANALYTICS.



**ALEXANDER KRAVETS**  
CEO and Co-Founder

Background in high frequency and proprietary day trading for over 12 years – started career as a successful proprietary equity trader and subsequently managed operations at Genesis Securities, a broker/dealer and clearing firm that provided direct market access (DMA) and co-location services. Successfully launched Sogotrade, a retail investing platform for over 100,000 clients. Highly experienced in entrepreneurship, trading platforms, market structure, execution networks, algorithmic trading, execution systems, market data, operations, and sales. Has held Series 7, 55, 63, and 24 securities licenses.



**SERGII GULKO**  
CTO and Co-Founder

Sergei Gulko founded Axon Software, which has spent over 11 years developing high frequency algorithmic models for hedge funds and broker/dealers in the US equity and Forex markets – expert in colocation services, market data, execution, analytics.

Highly versed in FIX and other proprietary protocols, market data handlers, deployment and control of advanced hardware infrastructure systems specializing in low latency and network security.



**JON GIACOBBE**  
COO and Co-Founder

6 years in finance, Goldman Sachs and JP Morgan – Equity Derivatives, Structured Products, Market Liquidity, Senior Bank Debt, executed institutional client orders. Fox Business News weekly contributor and panelist on Money with Melissa Francis. Active entrepreneur, operated multiple businesses ranging from Subway franchises to FlyCleaners to Fencing in the Schools.

# Team



**OLEKSANDR LUTSKEVYCH**  
Advisor

Oleksandr is a co-founder and CEO at CEX.IO LTD, a successful holding company consisting of CEX.IO Bitcoin Exchange and GHash.IO Mining Pool. Oleksandr is a pioneer in the Bitcoin industry and one of the inventors of cloud mining.

Forming a solid network of various crypto services trusted by over 1.7M user, CEX.IO LTD targets a wide range of audiences, involving them into the world of Bitcoin and creating new possibilities for easy Bitcoin integration to their life and business.

CEX.IO currently facilitates over \$1 Billion USD per day in crypto trading volume - is registered as a Money Services Business with FinCen and provides coverage in 99% of countries worldwide, including 24 US states. CEX.IO accepts deposits via crypto, wire, and other methods in USD, GBP, EUR, and RUB. CEX.IO will be the initial exchange JV Partner serving as a custodial base, thereby allowing XTRD to facilitate the SPA multi-exchange execution solution in 2018.



**LEX SOKOLIN**  
Advisor

Lex is a futurist and entrepreneur focused on the next generation of financial services. He directs Fintech Strategy at Autonomous Research, a global research firm for the financial sector. Lex is on the Board of Directors and previously was the Chief Operating Officer at AdvisorEngine (formerly Vanare), a digital wealth management technology platform. He was also founder and CEO of NestEgg Wealth, a roboadvisor that pioneered online wealth management in partnership with financial advisors, acquired by AdvisorEngine.

Lex is a contributor of thought leadership to the WSJ, the Economist, CNBC, Reuters, Investopedia, American Banker, ThinkAdvisor, and Investment News, among others. He has spoken on the future of technology and achieving extraordinary growth at conferences for Money2020, LendIt, Techonomy, In|Vest, T3 Enterprise Edition, and the Financial Planning Association.

Prior to NestEgg, Lex held a variety of roles in investment management and banking at Barclays, Lehman Brothers and Deutsche Bank. He holds a JD/MBA from Columbia University and a B.A. in Economics and Law from Amherst College.



**ADDISON HUEGEL**  
Advisor

Addison is the Managing Partner and Media Director at Elevator Communications, LLC.

He is a new technology communications and marketing specialist with extensive experience building communities around blockchain, B2B, and B2C applications. Over the years he's worked with hundreds of companies, from startups to Fortune 500s. In 2015, he served as a communications consultant to the Ethereum Foundation and DEVCON1, while more recently he worked to help launch Kyber Network.

Before entering into marketing and PR, Addison worked in the field of Condensed Matter Physics and has published a number of scientific, peer-reviewed papers. He also spent two years writing software for the Mars Orbiter program at NASA Ames Research Center. He holds a degree in Physics from University of California, Berkeley.

# Team



**STEVEN M. WASSERMAN**  
Advisor

Steven M. Wasserman, J.D., is a Asset Manager, Registered Investment Advisor/Principal investor, Futurist, Developer of the SPAC Product. Steven has over 20 years of experience as an advisor to corporations in mergers and acquisitions and financings, as a portfolio manager in investment management, and as a private equity principal in operating businesses. He was formerly a Senior Managing Director at Beige Group, a Senior Managing Director, Investment Committee member, and Co-Founder of the Global Capital Markets Group at Rodman & Co, Co-Chairman and President at Alpha Security Group Corp. He was the Managing Partner of AMT Ventures LLC and AMT Capital Partners LLC. Prior to that, Mr. Wasserman was the Managing Partner at Cardinal Fund. He advised Beatrice, Inc., Comdisco, Inc., (and was the organizer of) Star Maritime Acquisition Corp., now the largest, diversified, ultra modern U.S. listed dry bulk company, Energy Infrastructure Acquisition Corp., and Seanergy Maritime Corp. Mr. Wasserman has also acted as a Financial Advisor in a series of leveraged buy-outs including the Fulcrum Group in their \$1.6 billion bid to purchase the semiconductor division of Motorola and to Kescient Acquisition Corp. in its \$2 billion bid to purchase Veba Electronics.



**GARY ROSS**  
Advisor

Gary J. Ross is a partner at Ross & Shulga PLLC, and through longtime clients such as Steemit and InvestFeed has spent several years on the forefront of the cryptocurrency space. Gary focuses his practice on securities law, venture capital and private equity, corporate governance, and general corporate matters. Gary represents private companies (at all stages), angel investors, and venture capital funds. Gary has extensive experience advising as to SEC-registered and exempt capital markets transactions.

Prior to co-founding Ross & Shulga PLLC in 2017, Gary was the founder and managing attorney of Jackson Ross PLLC. From 2009 to 2012, Gary served as a Compliance Analyst in the U.S. Department of the Treasury, where he oversaw contractors and financial agents engaged by Treasury to provide asset management, advisory, and other services relating to the Troubled Asset Relief Program (TARP).

Gary is an adjunct professor at Seton Hall Law School and has been quoted in articles in MarketWatch, Corporate Counsel, The New York Times and the Associated Press.



**JUSTIN WU**  
Advisor

Justin is an Information Architect & Growth marketer that has worked with companies such as The Wall Street Journal, Samsung, NASA, and Intel. He is also the founder of Growthly, a growth agency that helps companies build a community around their brand.



# Team



**MUSHEGH TOVMASYAN**  
Advisor

Mushegh Tovmasyan is a FinTech entrepreneur and a veteran of the online trading industry. His senior management experience in FX and CFD space spans regulated companies in USA, UK, UAE, Germany, Switzerland, San Marino, Cyprus, Armenia, Japan and New Zealand including advisory roles on various successful ICO's.

A serial entrepreneur at heart, Mushegh is a shrewd negotiator and has a good eye spotting individual talent and untapped opportunities in the market.

A strong technology background mixed with hands-on management experience across various global jurisdictions has influenced Mushegh to excel in leadership roles pushing all his ventures to the forefront of the modern Fintech era.



**RAN NEU NER**  
Advisor

Ran serial entrepreneur and has one every entrepreneurial award including;

2014 CNBC All Africa Business Leader Award (AABLA) Southern Africa – Young Business Leader  
2014 CNBC All Africa Business Leader Award (AABLA) Africa – Young Business Leader  
2015 Sanlam Business Partner Entrepreneur of the Year  
2015 Adfocus Industry Leaders Award  
2016 National Business Awards Business Leader of the Year  
2016 EY Southern Africa World Entrepreneur Award Exceptional category

His last venture was a start up that was sold to the Publicis groupe for over \$150m US. This was the largest marketing transaction on the African Continent.

Ran HAS BEEN IN Blockchain SINCE 2013 and has advised several projects. He is the founder of ONCHAIN Capital , A Crypto Asset Fund. He is also the host and producer of the World's first Crypto show that is currently the largest show on CNBC Africa , CNBC Cryptotrader.



**TOM OSMAN**  
Product Growth Consultant & Marketer

Tom is a Product Growth Consultant & Marketer that has built multiple fast-growing startups such as Teachers Register and Love Discounts.com. He is the founder of blockchain & crypto growth agency Blocknauts that works with companies to tokenize and launch through initial coin offerings.

# Team



**SERGEY GRISHKIN**  
Developer

DevOps engineer - virtualization, monitoring, server configuration, and security, continues integration and delivery



**IRYNA LEBEDEVA**  
Business Analyst

Business analyst, economic and financial models, risks management



**ALEKSEY PEKAR**  
Developer

Java/C++ developer with deep understanding of financial markets.



**SERGEY POGORELOVSKY**  
Developer

Experienced Java/Perl programmer, TDD evangelist, smart contracts developer



**ALEXANDER LEVAKOV**  
Developer

Front-end developer(JavaScript) with solid C++ background. Programmer and web-developer with 12 years experience. Currently, focused on modern JavaScript technologies.



**NIKITA TROPIN**  
Developer

Hard-core C++/Perl developer and Solidity enthusiast. Developer of high-performance applications on C++ with deep knowledge of web-development and Linux administration using Perl, FIX protocol and big data specialist. Has created automated trading bots in cryptocurrency markets.

# XTRD Project

## OVERVIEW

OUR GOAL IS TO BUILD TRADING INFRASTRUCTURE (SOFTWARE AND HARDWARE) IN THE CRYPTO SPACE AND BECOME ONE OF THE FIRST FULL-SERVICES SHOPS IN THE CRYPTOCURRENCY MARKETS FOR LARGE TRADERS AND FUNDS. WE BELIEVE THAT THE MOST IMPORTANT COMPONENTS ARE:

- A single FIX API for trading across all connected exchanges
- A robust GUI for manual cross execution on all crypto markets
- A large liquidity pool, based on orders books from all connected exchanges
- Best prices and best top of book execution net of fees
- Low transaction fees
- 99.99999% reliability and uptime
- Fast execution
- Parent/child orders on multiple exchanges to minimize individual market impact
- Advanced order types common in the equity and FX trading space
- Establish XTRD as a premier market-making entity to mitigate spreads and increase liquidity in the cryptocurrency space
- Derivative trading - XTRD plans to connect to LedgerX (US based, approved by the CFTC) for cryptocurrency options and swaps to offer unified hedging and derivate trading strategies
- Robust, US based technical support
- Reliable and familiar deployment methods for institutions:
  - IPsec as a connectivity option across the Internet
  - cross connection options
  - collocation space or VPS (Virtual Private Servers) that clients can rent from XTRD
  - UAT/Sandbox environment for testing

## XTRD PRIVATE NETWORK

We plan to initially deploy our servers in NY4/LD4 where many of the large US crypto exchanges already have a point of presence.

Our goal is to provide a secure and reliable trading environment. To achieve this, all our core components will be isolated from the public internet. Access to trading servers and market data feeds will be available only inside our private network.

There are several connectivity options that will be available for our clients:

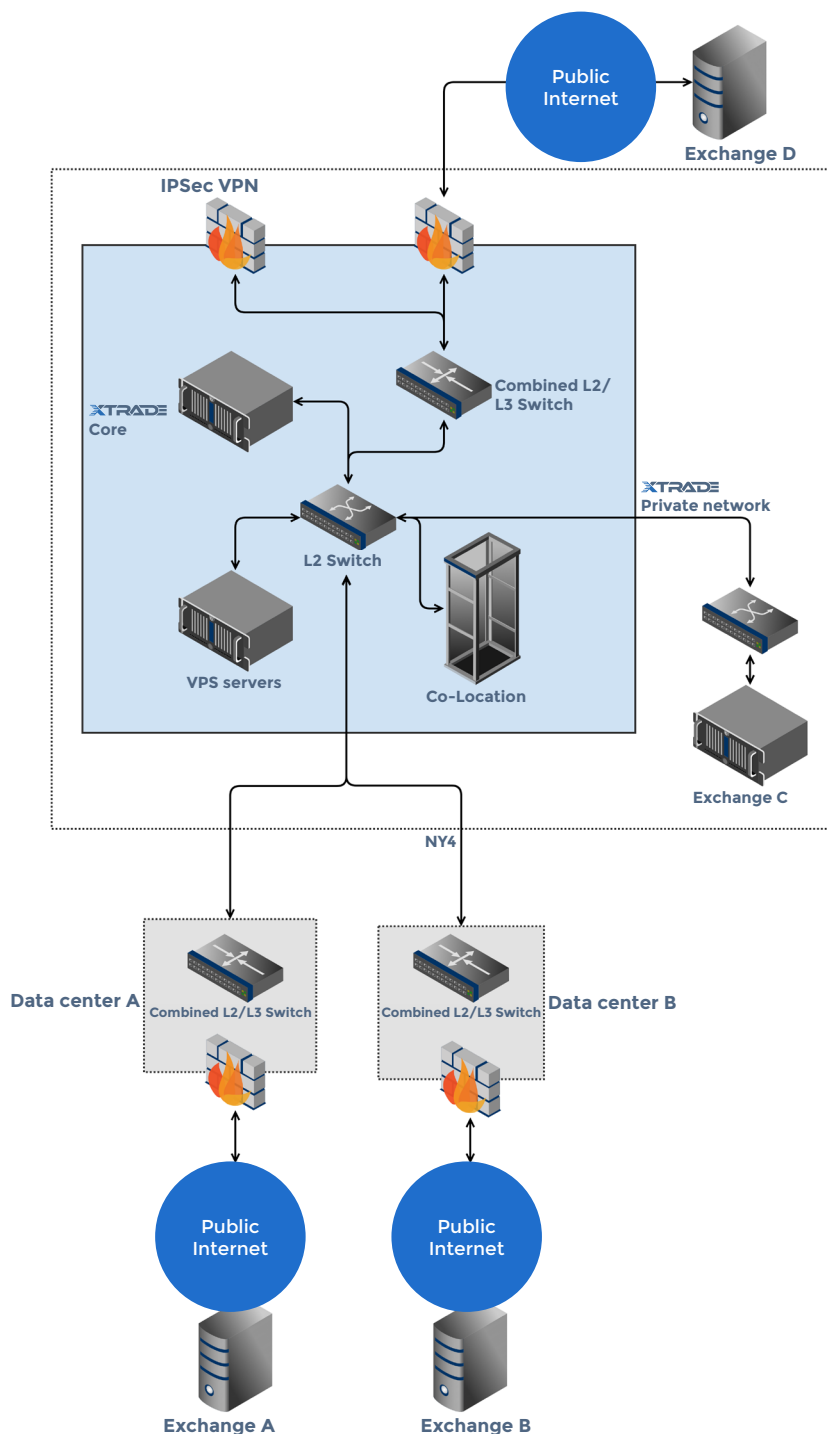
- Cross-connect inside datacenter
- Access over the Internet using IPsec channel. All incoming and outgoing traffic will be encrypted
- Rent a VPS server from us. We will offer a rapid-deployment environment with multiple OS images (like Linux or Windows) to choose from
- Co-location services. Clients will be able to rent 1U or 2U slots to deploy their own servers inside our network.

# XTRD Project

## LATENCY REDUCTION

There are several exchanges that already have a point of presence in the NY4 datacenter. By cross-connecting with them, we will significantly reduce network latency.

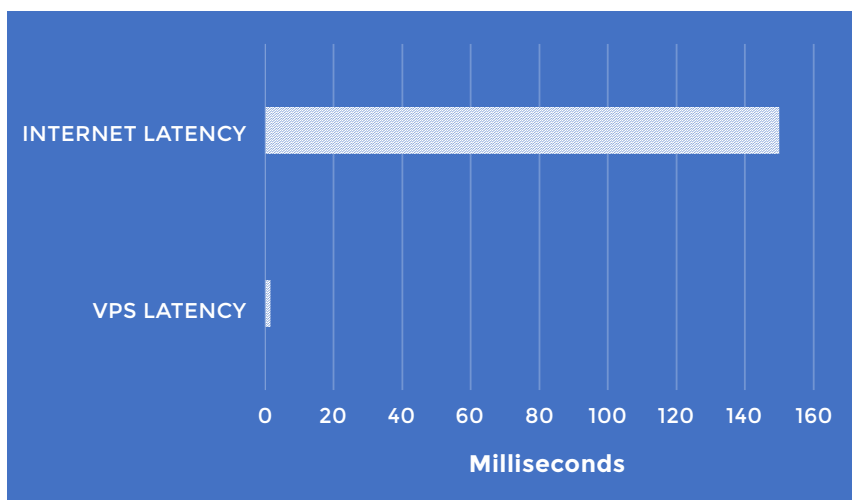
To improve latency to non-NY4 exchanges, we will build custom routing paths using dedicated internet access technologies (DIA). This way we can be 2x - 10x faster compared to public internet as we will have colocations both on the East and West coasts.



# XTRD Project

## COLO/CROSS-CONNECT AND DATACENTER LATENCY ILLUSTRATED

A valuable service will be the co-location of client servers at our data center location - or the sale of VPS (virtual private server) services. Currently VPS is highly demanded in the FX markets, as it allows for a quick implementation of a client's API close to the exchanges to minimize latency in market data and order execution. **In short, a client "loads" his strategy coded to our FIX API into our server close to the exchange matching engine.** We anticipate a surging demand for this service in 2018 as crypto trading becomes more universally accepted.



**Figure 4 Internet vs VPS Latency – lower is faster**

Currently, internet latency for order entry and execution is around **150 ms** over the internet from a home or office that is not in a datacenter. XTRD will cut that down by **100x** through a VPS solution with an average latency of **1.5 ms**, and engage emerging high frequency traders across the crypto spectrum. Liquidity will in turn deepen, and spreads will narrow for the benefit of all market participants - resulting in a virtuous cycle of increasing liquidity and participation in the crypto space.

Utilizing current virtualization technologies, one physical server can be converted to 10-15 servers. Virtual servers will use the same physical network switch connection, which will be linked to XTRD's trading platform.

VPS services will serve to popularize our execution services, and execution services will concurrently serve to popularize VPS services. The presence of this infrastructure allows us to serve as a "one stop shop" where one can provide all the required services for fully-featured cryptocurrency trading; namely, connection to all exchanges via one FIX API, low transaction costs, best price, hosting, and minimization of counterparty risk once the SPA gateway is developed.

From a technical standpoint, XTRD will place our market data aggregation machines as close as possible to exchange colocations, collect data on the spot and relay it in optimal binary format via a high-speed link to the client's order management module.

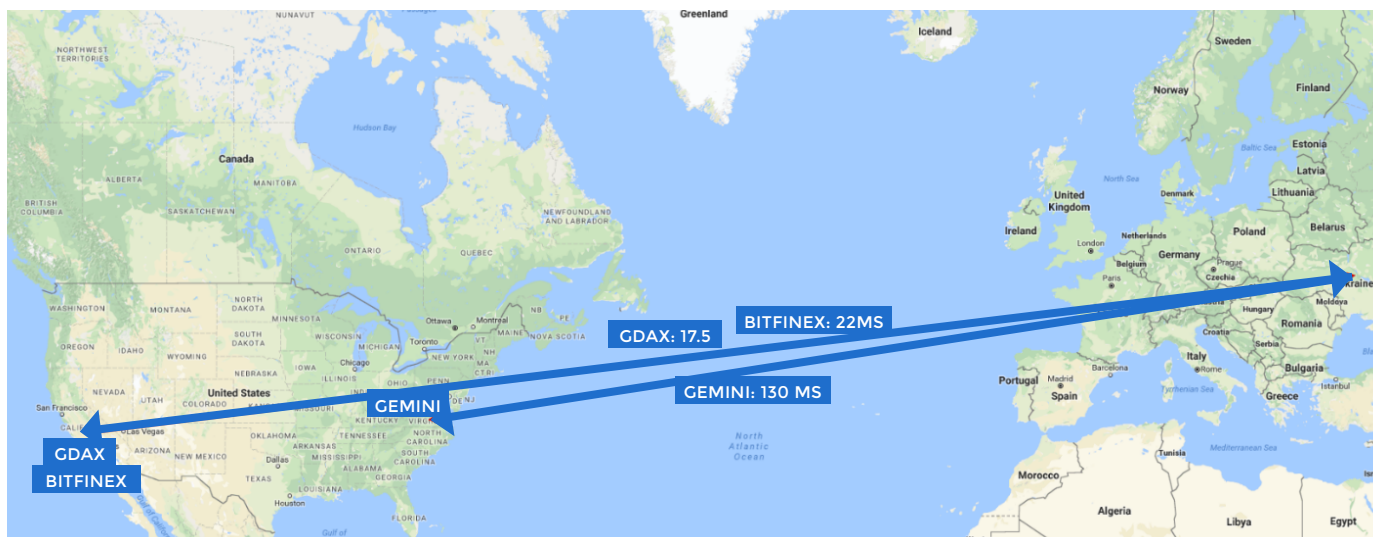


# XTRD Project

## VPS LOCATION EXAMPLE

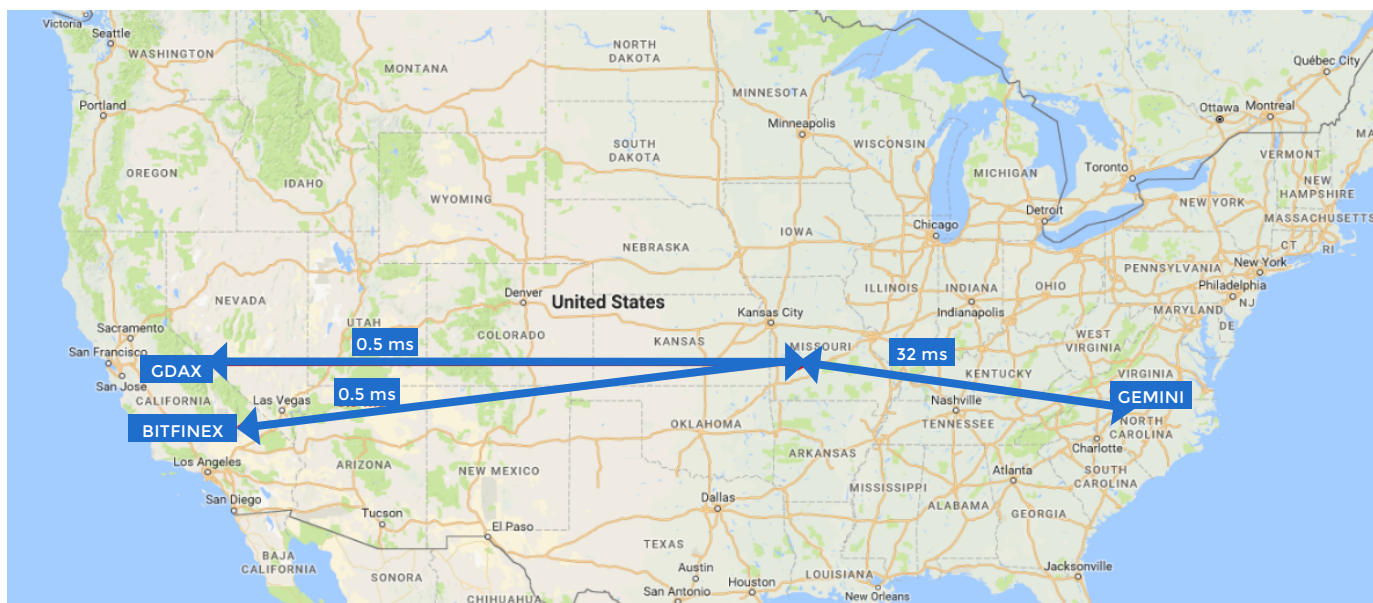
Looking at three major US crypto markets, the Gemini exchange trading infrastructure is in Virginia; GDAX and Bitfinex are in California.

Ping times from our Kiev office are as follows – a millisecond, or “ms”, is 1/1000 of a second:



**GEMINI: 130 MS**  
**GDAX: 17.5 MS**  
**BITFINEX: 22 MS**

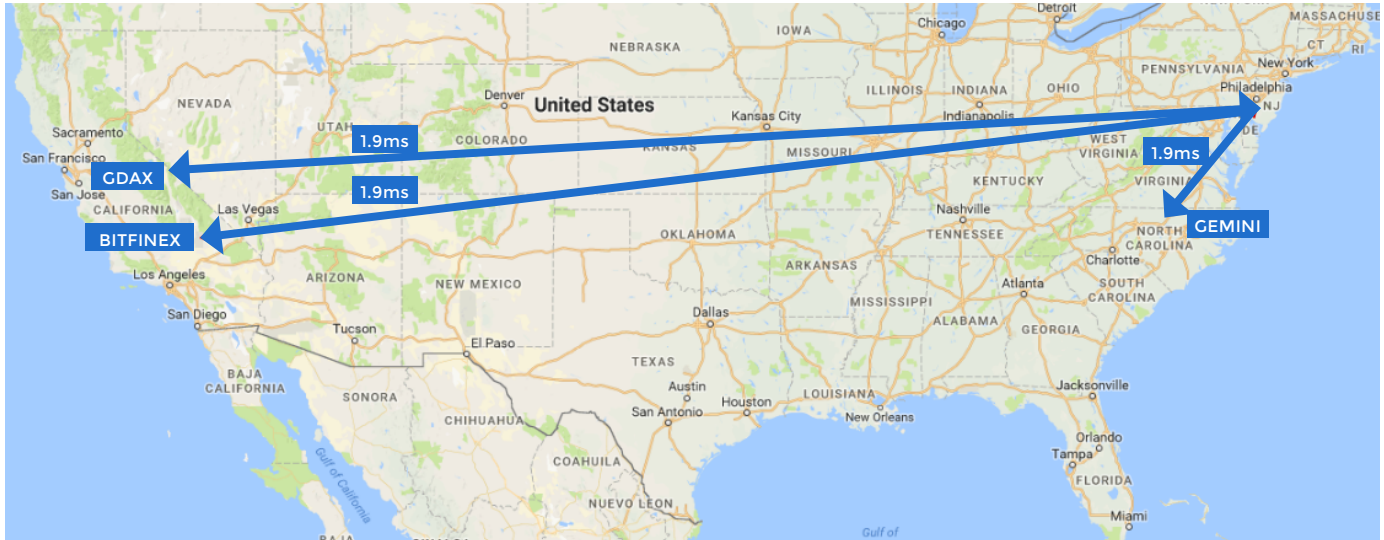
Average ping from Missouri (another colocation we have) looks like this



**GEMINI: 32 MS**  
**GDAX: 0.5 MS**  
**BITFINEX: 0.5 MS**

# XTRD Project

Average ping from our colocation at Equinix NY4, major NJ datacenter housing financial networks:



**GEMINI: 1.9 MS**

**GDAX: 1.9 MS**

**BITFINEX: 1.9 MS**

Based on this, we can select an optimal geographic server location for the order management module which will allow for minimal latency both for market data aggregation and order execution – the optimal virtual solution for these 3 exchanges being NY4 if you are trading all 3, Missouri if only GDAX and Bitfinex, and so on.

XTRD will select the optimal virtual location – or multiple – for all client algorithms depending on their required trading pairs and markets they participate in as well as the preferred equidistant location of their trading logic engine.

## CYBERSECURITY

Currently all exchanges have public internet connectivity. Even with 2FA authentication and complex passwords, there is still a constant threat of hacking, ranging from simple password phishing to more sophisticated intrusions such as MITM (man-in-the-middle) attacks where network traffic is intercepted between two parties – or where entire websites are cloned with fake SSL certificates for the express purpose of collecting logon information. A bad actor can gain access to a crypto trading account with an obfuscated IP and simply move all funds to an encrypted, untraceable wallet on the blockchain.

XTRD will not allow public internet connectivity to the XTRD Private Network. All market participants will connect via IPsec VPN with hardware based, IP whitelisted, end to end encoded communications for both FIX and XTRD PRO that encrypt all data packets. All VPS and cross-connects will be on our private network, not accessible to the outside internet.

This is necessary to ensure safety of funds and to abide by cybersecurity compliance protocols already established in the institutional and professional trading space.

# Roadmap



Q1 2018

1

Token  
Generation



Q1 2018

2

FIX API



Q2 2018

3

XTRADE  
Pro Alpha



Q3 2018

4

XTRADE  
Pro Beta



Q4 2018

5

Single Point  
of Access

## FIX API – Q1 2018

Currently, most cryptocurrency exchanges offer an http-based REST API/Web socket for execution and market data. Even though these APIs are mostly similar, they are still heavily fragmented, requiring many resources to unify into a single trading application. FIX is widely adopted and much faster.

Therefore, the first step for XTRD to develop a unified FIX API for market data, order entry, and funds movement. When the FIX API is implemented, XTRD will not act as a custodian of funds or execute from an inventory account, but will instead facilitate trading for clients who have existing accounts at the most liquid exchanges by utilizing the FIX API to seamlessly place orders across the optimal mix of exchanges on which they have accounts.

We already have a FIX product (built originally for FX and Equity markets) with the capability to:

- Aggregate liquidity across different exchanges
- Manage orders books consistently, in real-time
- Build custom single order books based on an account's unique needs (e.g. I want to see quotes from Exchange A and B but not from C)
- Stream normalized market data to subscribers utilizing the FIX protocol
- Provide single trading interface over the FIX API to all connected exchanges. Right now, we support the following orders types:

- market and limit, stop and stop limit, trailing stop
- contingent, multi contingent
- OCO (one cancels the other) and OTO (one triggers the other)

- Perform SMART routing – the execution engine will automatically choose the best execution path based on previous trading history and current market conditions (liquidity, price, slippage)
- Spread one large order across multiple exchanges
- Perform pre-trade risk management
- Drop copy all executions to clients over a FIX API
- Handle up to 20,000 orders per second

XTRD anticipates completion of a production multi-market FIX API for crypto execution, market data, and fund movement by Q4 of 2017.

# Roadmap

## XTRD Pro - Q2 to Q3 2018

XTRD is an advanced, multi exchange manual crypto trading platform built by traders, for traders.

XTRD principals have a combined 30 years of experience developing and administering front end systems for active traders in FX and equity, as well as creating and maintaining the back-end systems required to support front end trading. This involves a combination of extensive knowledge in market data handlers and data feed parsing, low latency execution engines, ticker plants, on-site colocation infrastructure with exchanges, advanced order types, execution reporting, database administration, and other operational requirements as well as implementation of industry best practices.

## CURRENT DIFFICULTIES WITH CRYPTO EXCHANGE GUIs AND SYSTEMS

Most cryptocurrency exchanges have an antiquated, bare bones system that is accessed through a webpage with limited functionality. It's difficult to engage in high speed, multi-exchange execution given the necessity of clicking, scrolling, and typing in updated pricing as the order books continually change. For comparison, most manual high-speed trading systems utilize keyboard shortcuts and programmed functions, as well as initial pricing for order entry automatically pegged to bid/ask or +/- a certain liquidity threshold to cross the inside quote.

The order book representation is also quite antiquated, with little to define individual market participants, incomplete representations of liquidity, and constant "bursts" of executions that come through in the aggregate because the exchange systems are too slow to pass through executions as they occur. This creates a "dam" effect where there is a burst of orders which lag by hundreds of

milliseconds, and sometimes whole seconds - a length of time that would be considered unworkable in any other active trading space.

Current crypto exchange systems are not robust enough to handle large traffic and varying order types. As an example, in late August 2017 a large crypto exchange had to disable all advanced order types for two months - including stop losses and trailing stops - to mitigate strain on their platform.

## XTRD PRO IN DEPTH - FASTEXECUTION, AGGREGATED MARKET DATA, CUSTOMIZABILITY, ADVANCED SCANNERS

### i. Fast Execution

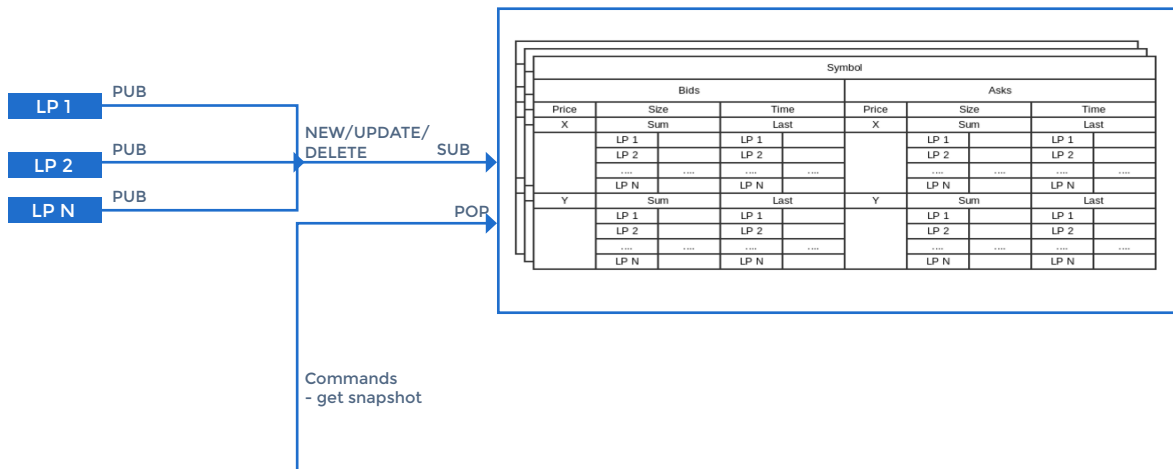
Speed is key. XTRD will keep all orders resident on our servers and pass executions to exchanges using our FIX API, allowing for faster and more advanced order types that are currently either execute too slowly due to internal network latency or don't exist natively on exchanges, or both. Orders can be routed to one or multiple exchanges to take immediate advantage of price discrepancies and arbitrage opportunities.

If a client wants to place an order to buy 100 ETH/USD, depending on his selected execution strategy, XTRD will split the order into several pieces and execute them on multiple exchanges. The client can then utilize different order types and Time In Force (FillOrKill, ImmediateOrCancel, GoodTillCancel) commands will work on a custom basis depending on available liquidity.

Advanced order types such as contingent and OCO as well as the usual Stop/Limit/Market will be fully available. XTRD Pro is being constructed for traders, by traders, with traders' feedback being the main driving catalyst for new features and advanced platform functionality.



# Roadmap



**Figure 5 XTRD Order Book Composition and Market Data Management**

## ii. Aggregated Market Data

XTRD's advanced FIX API and robust market data handlers combined with collocated hardware at exchange data centers will ensure fast, reliable data delivery to XTRD Pro clients. XTRD servers will receive raw market data feeds directly from exchange matching engines and therefore quote packet loss will be minimal once rebroadcast over the Internet, greatly minimizing stale and crossed/locked quotes.

All data quotes for the same currency pairs (BTC/USD or ETH/BTC, for example) will be aggregated to one order book from multiple exchanges. Therefore, the end user will have access to a much more liquid market in a unified fashion across multiple exchanges where he has accounts.

For example, let's assume the volume for the ask price of ETH/USD at a price of \$726.75 is as follows:

Gemini: 51.45 ETH @ \$726.75

GDAX: 25.71 ETH @ \$726.75

Bitfinex: 72.13 ETH @ \$726.75

XTRD can display this as ONE order for 149.28 ETH @ \$726.75, or multiple orders broken down by exchange aggregated by price level, similar to ECN structure in the equity markets.



# Roadmap

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### iii. Customizability

XTRD Pro will be fully customizable. All time and sale, watch lists, position data, pending orders, layouts, hotkey settings, and the general look and feel can be modified and saved freely by individual traders based on their own unique trading demands. All layouts can be saved on the cloud, so that trading can seamlessly transition from the office to the beach, and beyond.

The platform will cater primarily to institutional and active traders, but can easily be used by less demanding clientele through simple point and click interfaces and beginner-friendly preset layouts.

### iv. Advanced Scanners

Traders are always on the lookout for opportunities; XTRD Pro will provide a first look to the most viable and profitable trades. Our scanners will focus on calculating immediate spreads across multiple exchanges for the same currency pairs, spreads net of commission, volumes at different exchanges, “breakout” currencies with new highs and lows, and other proprietary filters.

Charting and studies will integrate all popular indicators, ranging from moving averages and RSI to sector analysis, volume filters and technical indicator scanners. All opportunities can be easily acted upon from the execution windows with advanced global linking and multi-exchange PNL analysis.

# Roadmap

## SPA VIA JV – Q4 2018

SPA, or Single Point of Access, will allow XTRD to facilitate execution across multiple exchanges by opening just one account.

SPA will be facilitated via a JV agreement with existing cryptocurrency exchanges. The first exchange to participate as a JV partner with XTRD is CEX.IO, with over \$400 million USD daily volume, 1.2 million active traders and 7 million unique visitors per month.

The JV agreement structure will allow XTRD to act as a technology provider/execution broker without having to assume the duties of fund custody and the requisite exchange regulatory and compliance overhead. The exchange will take custody of client funds and maintain KYC, while XTRD will act as the execution venue for the client's orders.

If an order needs to be filled outside the JV exchange, XTRD will execute that transaction using our inventory account at another exchange and move the position over to the JV exchange where the customer's account is resident. The customer will be debited for the transaction at the JV exchange and settlement will occur there. XTRD will internalize client orders via the XTRD Dark Pool – if two orders match, we will not need to go out to other exchanges to fill them, but will instead match the market participants internally.

XTRD will employ Continuous Net Settlement (CNS) to settle trades. CNS is similar to the National Securities Clearing Corporation (NSCC) settlement system in the sense that there is an automated book entry accounting system in place, except that XTRD will actually settle the trades much more quickly than T+2 or T+3<sup>5</sup> by continuously sweeping the positions between various exchanges.

**This system will shield market participants from counterparty risk by maintaining multiple accounts across a swath of exchanges.**

XTRD's centralized order management system will manage all positions for clients with a global position management system, including risk management, PNL and market exposure calculation, mark-to-market performance in real time, master/subaccount allocation, and other advanced features. Holding accounts on multiple exchanges will, in addition to facilitating better price execution, allow traders to specify a wider range of counterparties they wish to trade with. In a sense, this will create a wider range of entities with which each trader may decide to establish a credit-like facility. XTRD is filing for a patent with the US Patent and Trademark Office for the execution and settlement system logic.

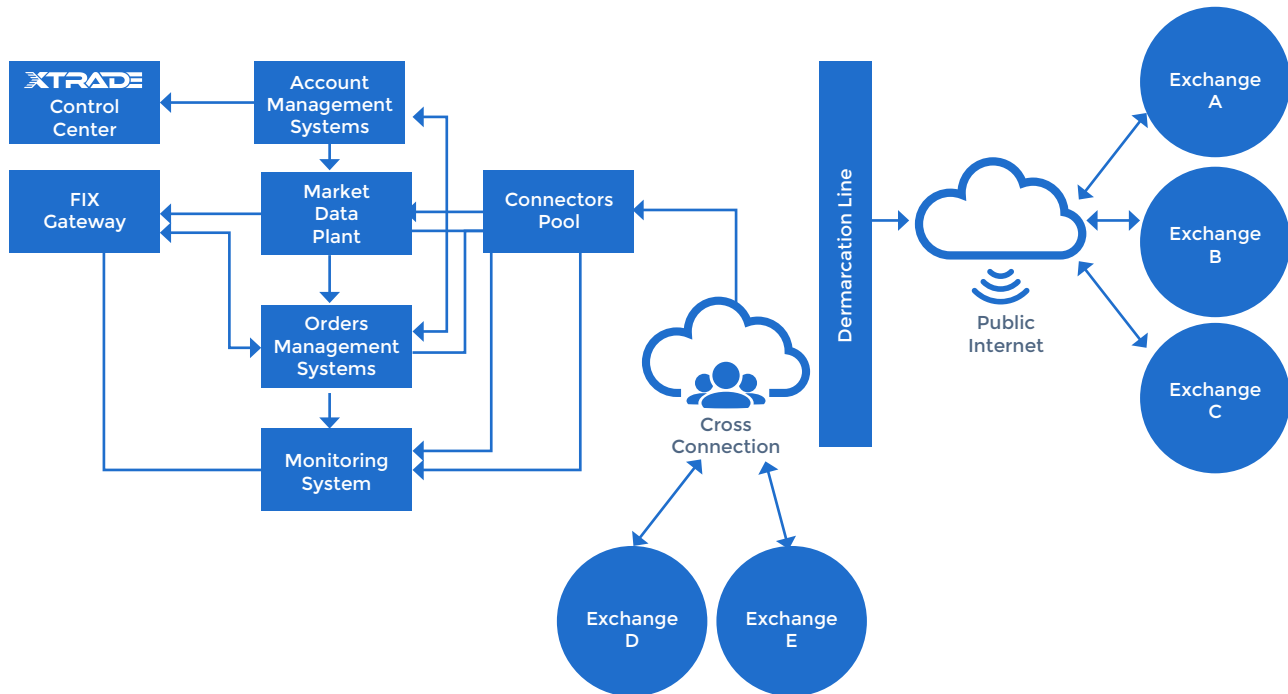
## XTRD DARK POOL – Q4 2018

Cut out the middlemen. We match sellers with institutional buyers for enormous crypto to fiat trades. Decentralized dark pools can't take fiat or complete KYC. Through our banking partners in the US, the UK, and in Hong Kong, we do KYC and enable fiat to crypto. Instead of paying the standard 12% commission, you'll pay less than 1% when working through XTRD Dark. You'll save millions.

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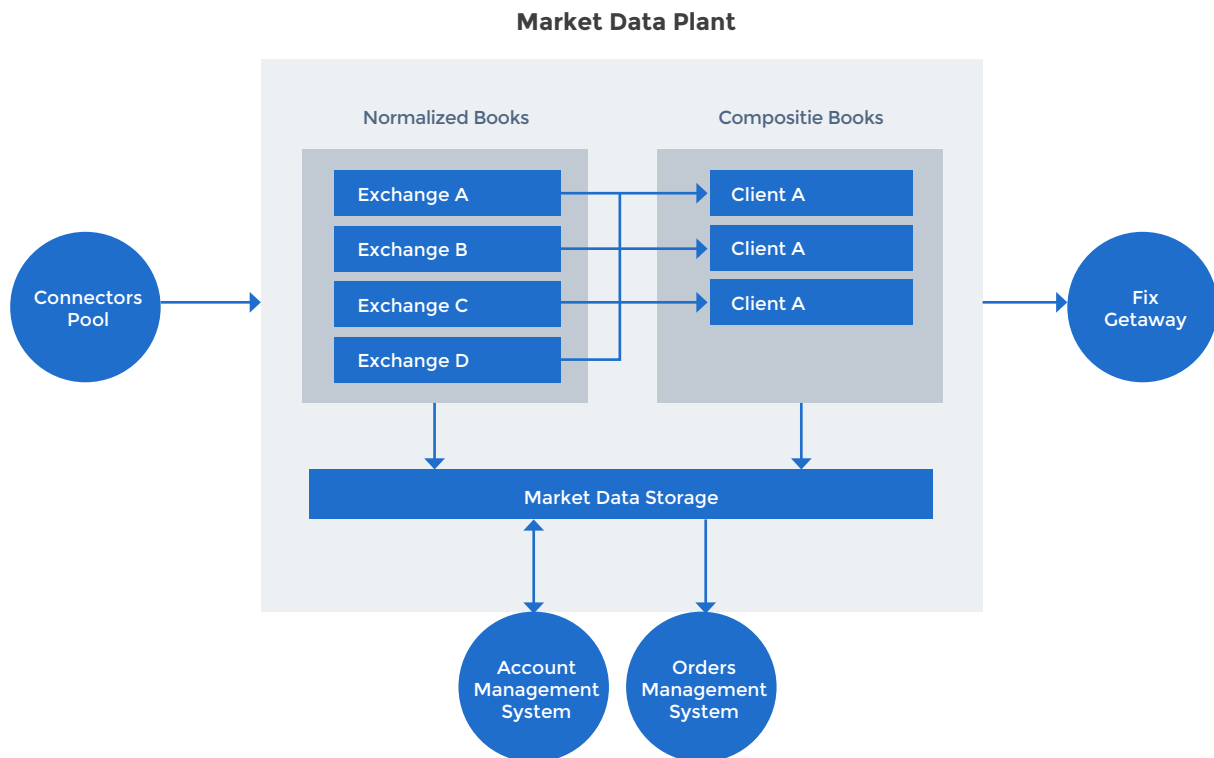
<sup>5</sup> In securities markets, trades settle T+3, or 3 days after the transaction takes place (now being shortened by the SEC to 2 days), although customers generally see the positions right away in their accounts as their clearing firm normally holds positions in "street name", or the clearing firm's account.

# XTRD Top Level Architecture



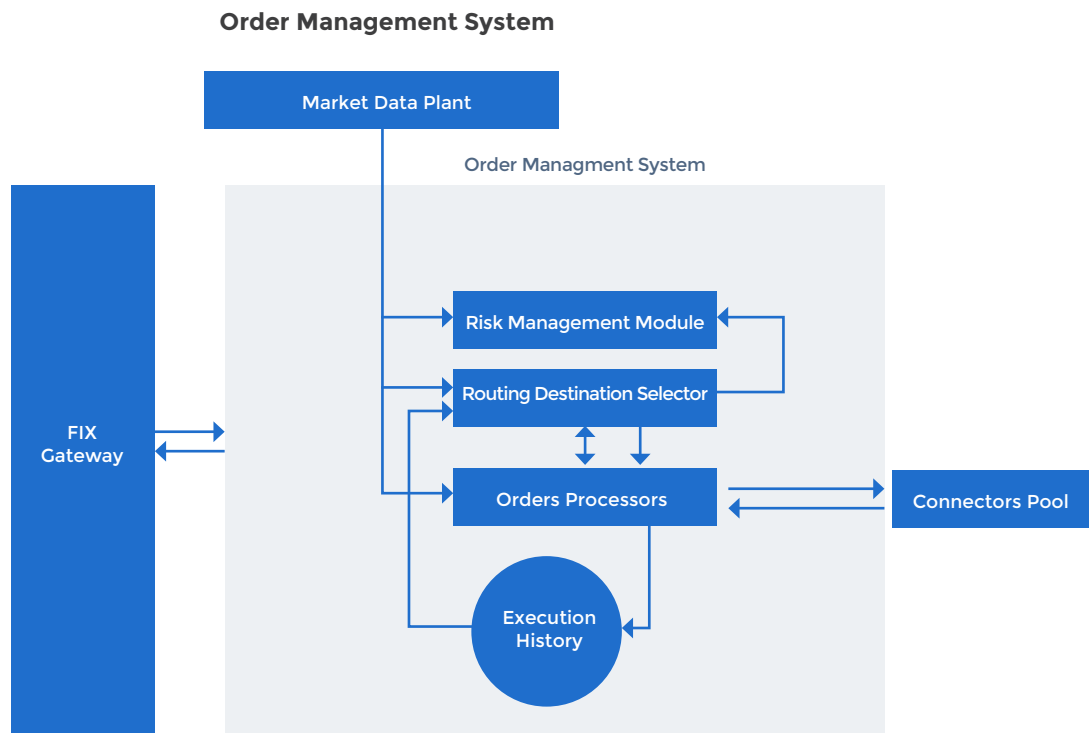
- FIX Gateway
- XTRD Control Center
- Market Data Plant
  - Exchange's normalized books
  - Composite Books
  - Market Data Storage
- Orders Management System
  - Risk Management Module
  - Routing Destination Selector
  - Orders Processor
- Accounts Management System
  - Compliance CRM
  - Platform Configuration Module
- Exchanges
- Liquidity Providers
- Risk Settings
- Connectors Pool
  - Trading Interface
  - Market Data Interface
  - Account Management Interface
  - Health Monitor Component

# XTRD Top Level Architecture



<b>FIX Gateway</b>	XTRD will perform pre-trade risk checks to avoid general (e.g. not enough money) and custom (like net exposure not more than X%) limit breaches.
<b>XTRD Control Center</b>	High-performance FIX 4.4-based gateway that will be used for orders entry and market data streaming.
<b>Market Data Plant</b>	
<b>Exchange's Normalized Books</b>	Web-based management portal to configure trading accounts, liquidity preferences and risk settings.
<b>Composite Books</b>	Composite books are constructed from normalized exchange books and based on the account's settings and preferences. For example Account A has access to exchanges A, B, and C but prefers to gather liquidity only from A and C.
<b>Composite Books (cont.)</b>	Composite books are constructed from normalized exchange books and based on the account's settings and preferences. For example Account A has access to exchanges A, B, and C but prefers to gather liquidity only from A and C. Composite book updates will be stored offline after 2 months and can always be reconstructed from raw market data. We will distribute composite books over XTRD's FIX API using MarketData-SnapshotFullRefresh and MarketDataIncrementalUpdate messages.
<b>Market Data Storage</b>	Offline storage for raw and composite market data.

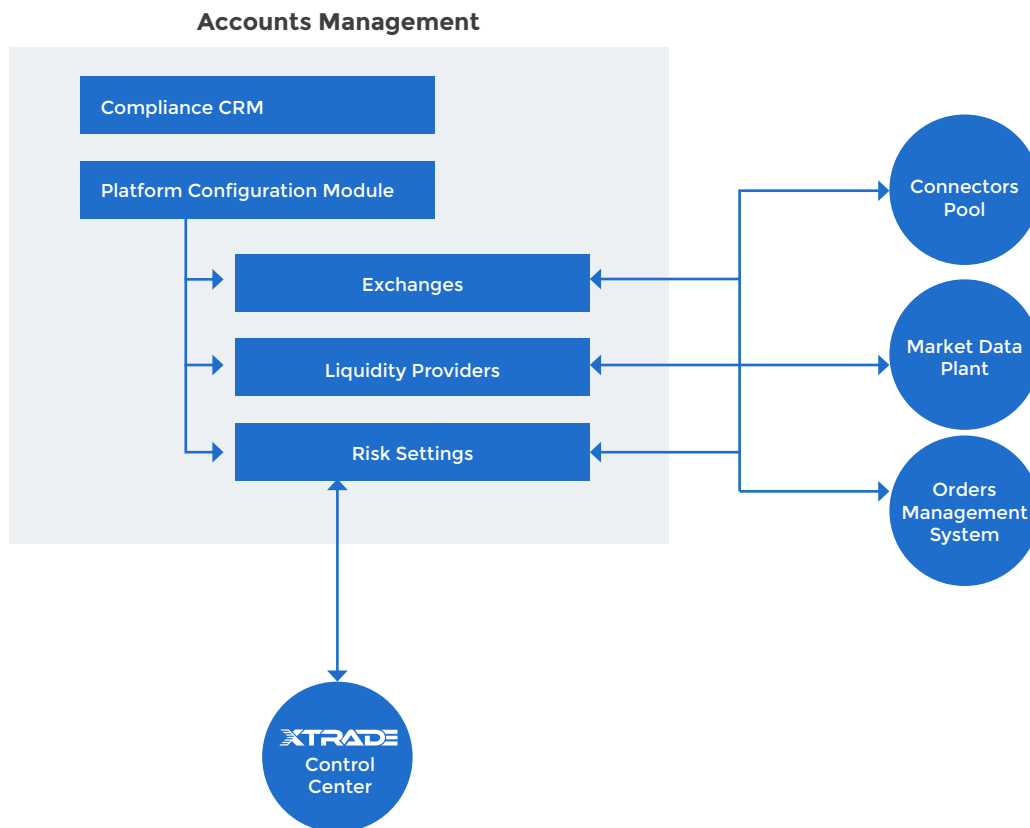
# XTRD Top Level Architecture



<b>Risk Management Module</b>	XTRD will perform pre-trade risk checks to avoid general (e.g. not enough money) and custom (like net exposure not more than X%) limit breaches.
<b>Routing Destination Selector</b>	<p>This component will build the best possible execution plan if SMART routing is requested.</p> <p>RDS can split original order in several components and send it to different exchanges based on the current market conditions like how much liquidity is available, how old the prices are, and on previous execution statistics (how likely exchange A will execute certain order types and volumes at what slippage).</p>
<b>Order Processor</b>	Order Processor is a translator between internal and external orders. It is able to manage single and composite (placed on different exchanges) orders by processing reports from exchanges and sending corresponding messages back to the FIX gateway.

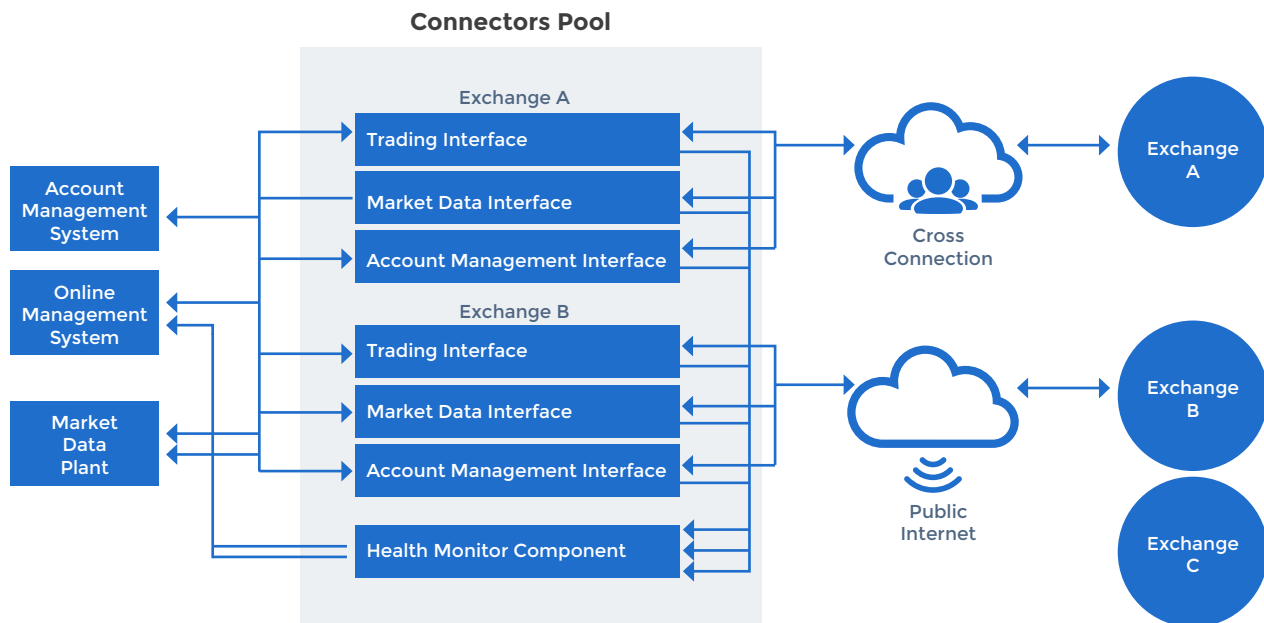


# XTRD Top Level Architecture



<b>Compliance CRM</b>	Internal CRM to automate KYC-related workflow.
<b>Platform Configuration Module</b>	Clients will have access to the platform through a web-based management portal and will be able to configure individual trading preferences.
<b>Exchanges</b>	At FIX API stage, will be used to configure access to exchanges where client has existing accounts.
<b>Liquidity Providers</b>	Composite books settings with high level of customization. Each instrument will have its' own liquidity sources. For example, BTC/USD book can be built using quotes from exchanges A and C, and ETH/USD - from A, B, and D.
<b>Risk Settings</b>	XTRD's risk system will perform basic pre-trade tests like funds availability by default. In addition, clients will be able to set their own rules like max daily PNL, net exposure, maximum number of active orders, and so on.

# XTRD Top Level Architecture



<b>Trading Interface</b>	Component that will translate internal orders-related commands into exchange-specific messages and vice versa (exchange-specific responses into normalized internal responses).
<b>Market Data Interface</b>	Component that handles all market-data related interactions (subscription, data normalization etc.) with particular exchanges. As opposed to the trading interface, market data interface can be shared across multiple clients' accounts.
<b>Account Management Interface</b>	Will be used mostly for fund-related operations like checking available balance, margin, etc.
<b>Health Monitor Component</b>	Each of the connector's interfaces will report to the Health Monitor that will track connection status and perform certain actions based on it. For example, a "market data connection to exchange A was lost" message would mean that all composite books should be updated by temporarily removing all orders from the exchange that went down in order to mitigate stuck orders and crossed/locked market data quotes.

# XTRD TOKENOMICS

## TOKEN USAGE

XTRD will generate the XTRD utility tokens via smart contract during the Token Generation Event (TGE) in Q1 of 2018. The XTRD utility token will be utilized on the XTRD network by market participants to pay for execution, VPS, market data, software licensing, and other fees. Market participants will be able to purchase XTRD tokens directly from XTRD's liquidity pool. The TGE will be preceded by a private institutional sale and a SAFT (Simple Agreement for Future Token) Platform based presale. The XTRD token will be fully ERC20 compliant to ensure that it functions properly on the Ethereum blockchain, similarly to other ERC20 tokens.

## XTRD TOKEN LIQUIDITY AGGREGATION

The XTRD token will be used to create liquidity in the overall cryptocurrency market. Along with the utility of the XTRD token to pay for fees on the XTRD platform of products, most of the XTRD token revenue will be used to increase the inventory of other cryptocurrencies that are in demand by our customers. This will create points of liquidity for our customers to access across the worldwide crypto exchange ecosystem. These liquidity points will be created using XTRD tokens that are paid back into the system for fees. 70% of funds raised in the token sale will be used for liquidity aggregation.

## XTRD STAKING

Discounts of 25% on XTRD services (execution, colocation, market data, software licensing) will be available for token holders in general and discounts of 40% on XTRD services will be available for token holders who maintain an average monthly stake of at least 50,000 XTRD tokens. Fiat will be accepted at no discount to par.

Execution fees will generally be set as a percentage of the gross trade amount, based on a combination of factors such as liquidity, the pair being traded, market conditions at the time of the trade, and so on.

All charges will be marked to market and remain constant, no matter the value of the XTRD token (a \$10 charge will be 2 XTRD if \$5 each or 0.5 XTRD if \$20 each).

## TOKEN LEGAL CONSIDERATIONS

XTRD tokens are ERC20 compliant utility tokens functioning on the Ethereum blockchain. The value of XTRD is derived purely from serving as a medium of payment for services by market participants in the XTRD trading ecosystem.

XTRD tokens confer no voting rights, profit participation, equity, ownership of intellectual property, revenue sharing, rights to dividends, transfer of ownership upon company sale, control of company assets, or any decision-making ability regarding XTRD or its' operations. XTRD tokens are not designed for speculation. In summary, XTRD tokens are not securities.

XTRD Digital Assets, Inc has obtained a qualified legal opinion concurring that XTRD tokens are not to be considered "securities" under applicable U.S. securities laws given their failure to meet all prongs of the Howey Test. <sup>1</sup>

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<sup>1</sup> In what has become known as the "Howey Test", the U.S. Supreme Court specified that an investment contract for the purposes of the Securities Act means a contract, transaction or scheme whereby a person (i) invests his/her money in a (ii) common enterprise and is led to (iii) expect profits (iv) solely from the efforts of the promoter or third party (i.e. "efforts of others"). All four of the above elements must be met for a contract to be considered a security within the meaning of the Securities Act. .

# XTRD Token Generation

## SAFT COMPLIANT PRESALE TO ACCREDITED INVESTORS

or Simple Agreement for Future Tokens, is an agreement being utilized by XTRD to allow accredited investors and institutions to participate in a future Token Generation Event. It is a token presale open to accredited investors, or those with an annual income of least \$200,000 or net assets of \$1,000,000, exclusive of their primary residence.

The SAFT is modeled after the Simple Agreement for Future Equity, or SAFE, which originated out of Y-Combinator, and when used properly is fully compliant with the Securities Act of 1933 and Regulation D promulgated thereunder. As the SEC has confirmed that the federal securities laws apply to token sales per its' recent SEC investigative report on DAO Tokens, XTRD is taking a proactive approach to the XTRD token sale by properly utilizing the SAFT and ensuring that the risks which come with early stage investment opportunities are made clear to those accredited individuals or institutions that participate.

## TOKEN GENERATION EVENT

Following the SAFT presale, if necessary, XTRD will conduct a crowd sale of the XTRD token to accredited investors under Reg D and non-US investors under Reg S. Non-accredited US investors will not be allowed to participate in the Token Generation Event to ensure proactive compliance with current US securities laws and regulations.

## TOKEN SALE TERMS

### XTRD TOKEN GENERATION EVENT (TGE)

Instead of generating a sum of XTRD tokens in a pool prior to the TGE, **XTRD will generate tokens only as funds arrive.**

For example, if 10 ETH (\$10,000 @ \$1000/ETH) arrives and generates 100,000 XTRD @ \$.10/XTRD during the public sale, XTRD will generate another 50% of XTRD on that transaction for internal use, or 100,000 XTRD, for a total generation of 200,000 XTRD resulting from the 10 ETH received.

### Timeline - Q1 2018:

Institutional Private Sale → SAFT Platform Accredited Presale → Public Pre-Sale → TGE/Public Sale

Institutional Private sales, SAFT Platform sales, and Public Presale will take place at discounts, tokens will be generated and sent to whitelisted participants at pre-agreed discounts as the TGE occurs.

As funds arrive during the TGE, tokens will be generated continuously until either 1) the hard cap is reached (hard cap amount TBA) or 2) the final sale date is reached (final sale date TBA)

No additional XTRD tokens will ever be created after the final sale date.

### Token Par Value:

\$0.10 per token, pegged to USD

# XTRD Token Generation

## Token Allocation

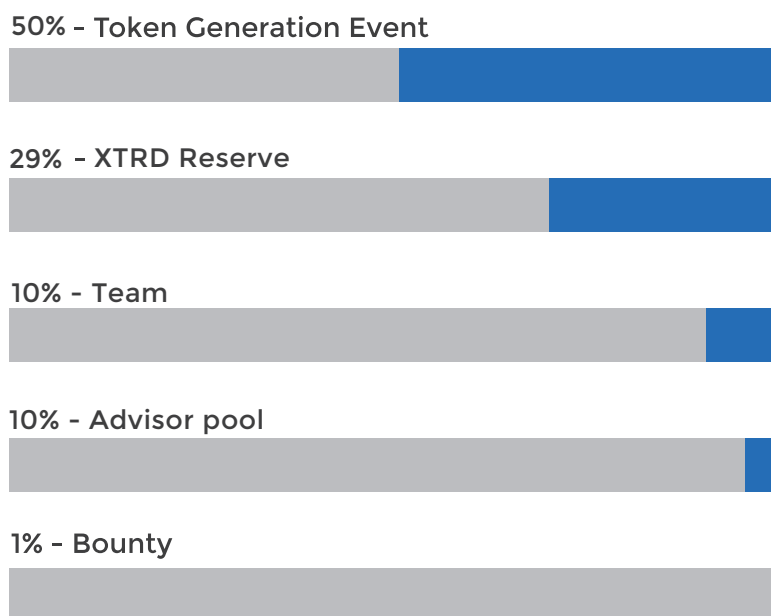


Figure 6 Token Allocation

### 50% - Token Generation Event

Token Generation Event tokens will be sold via SAFT, followed by a crowd sale if necessary. This will be the primary liquidity pool for XTRD tokens.

### 29% - XTRD Reserve

These tokens will be held in reserve by XTRD. Reserve tokens will be allocated to incentivize partnerships between XTRD and cryptocurrency exchanges, and to provide an additional pool of liquidity for tokens to be purchased by users in the XTRD ecosystem.

### 10% - Team

Team tokens will be issued to XTRD's founding team, and will also be subject to a 180-day vesting period from the date of the Token Generation Event.

### 10% - Advisor Pool

Advisor pool tokens will be issued to current and future advisors. XTRD advisors will consult on all facets of the XTRD project, such as market structure, cryptocurrency space developments, execution systems, regulations, business development, legal, and other vital matters.

### 1% - Bounty

Bounty tokens held in reserve to incentivize bug bounties for the XTRD smart contract to find potential bugs related to stealing or locking user funds, stealing the bounty, causing the "buy" function to be uncallable, and other smaller bugs. Bug bounties will also apply to public Github repositories and coding projects/challenges XTRD will publicly release to the algo trading and crypto community.



# XTRD Token Generation

## Use of Funds

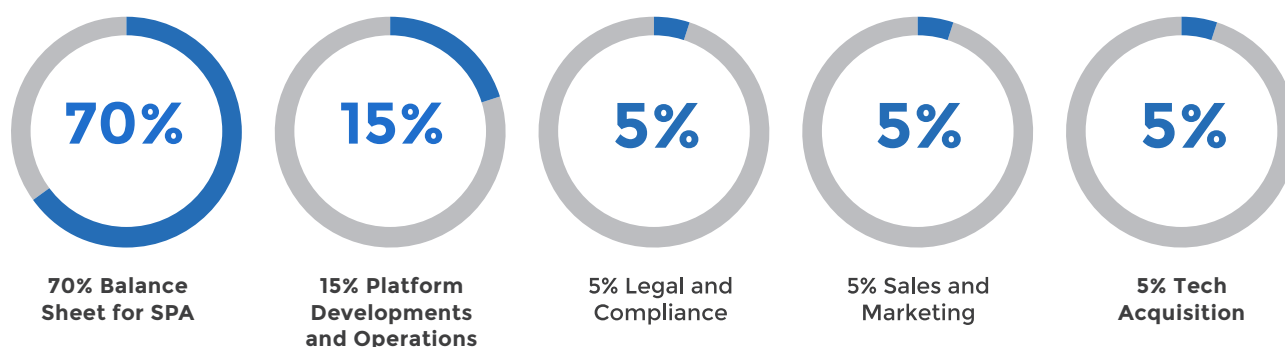


Figure 7 Use of Funds

### 70% - Balance Sheet for SPA

In order to facilitate the SPA structure, XTRD will need to allocate funds across inventory accounts in a spectrum of crypto exchanges. This will be vital to ensuring speedy cross-execution for client orders and ensuring there is enough net capital to facilitate daily trades in between cross-exchange position and currency sweeps – and to provide clients peace of mind regarding XTRD’s net capitalization.

Accordingly, most of the funds raised from the token sale will be used to maintain this balance sheet for trading capital. The balance sheet will also serve to mitigate counterparty risk for clients while trading with multiple exchanges facilitated by just one trusted account.

### 15% - Platform Development and Operations

Funds allocated here will be used for salaries, office space, sub-contractor software development work, travel, and other operational expenses.

### 5% - Legal and Compliance

As the regulatory framework around cryptocurrency coalesces in multiple jurisdictions, XTRD expects to work hand in hand with regulators and be ahead of the curve in terms of regulatory adherence, rule drafting, necessary registrations, and preemptive legal analysis. These are funds well spent.

### 5% - Sales and Marketing

While the absence of any service comparable the XTRD is likely to lower the bar for customer acquisition costs, XTRD will leverage traditional sales techniques as well as the principals’ internal network to grow the business quickly through 2018 and beyond. A sales and marketing budget is necessary to further this goal.

### 5% - Tech Acquisition

Harnessing emerging technologies in the crypto execution space is vital to XTRD’s business model. Accordingly, XTRD will allocate funds towards acquiring promising tech deemed complementary to XTRD’s core mission of delivering robust, innovative technologies and creating a higher standard of service and functionality in the cryptocurrency space”.

# Revenue Generation Models

## EXECUTION FEES

XTRD will charge execution fees for transactions effected via the XTRD platform. These fees will generally be a percentage of the dollar volume of the trade, in line with prevailing exchange charges. XTRD tokens will be accepted as a means of payment. As economies of scale increase under the SPA model and more volume is done across all exchanges, XTRD anticipates passing through the savings of low execution fees to our clients. Trade costs will vary depending on several factors, including, but not limited to, trade volume, if the order needs to be rerouted to another exchange or can be filled inside the XTRD Dark Pool, and complexity of the execution.

## MARKET MAKING

Given XTRD's balance sheet and a presence at multiple cryptocurrency exchanges, XTRD anticipates acting in a market-making capacity across numerous crypto currency pairs in different markets. Market making involves maintaining a continuous bid and ask quote within a pre-defined spread for a trading pair, and then buying and selling simultaneously by taking the other side of buy and sell orders that enter the system. Given the 24x7 nature of cryptocurrency markets and XTRD's principals' experience in algorithmic trading strategies, we anticipate market making activity to serve as a continuous and sizeable revenue stream. By acting as a market maker, XTRD's balance sheet will serve to stabilize sharp fluctuations in price caused by a lack of liquidity. If competition develops for the inside quote among other prospective

market making entities, this will only serve to increase the stability and execution quality in cryptocurrency markets and therefore benefit the community as a whole by catalyzing maturation of and growing confidence in the crypto trading space.

## XTRD VPS

VPS, or Virtual Private Server, is a service whereby a client can upload their coded trading strategy to our servers at a datacenter close to cryptocurrency exchanges, and reduce their execution time by a factor of over 100x compared to trading via public internet lines. By leveraging current virtualization technologies, many clients can utilize the same physical server, while managing their strategies securely and remotely.

This service is particularly attractive to hedge funds and institutions who will code to XTRD's universal FIX spec, as it will eliminate the need, cost, and time investment to establish a point of presence directly at the datacenter. XTRD VPS is a one stop solution – financial developers will be able to write to our API and co-locate with us for industry leading speed.

VPS services are typically charged on a recurring monthly basis with longer-term agreements and we expect exponential growth in managed services MRR for VPS beginning in 2018.

XTRD anticipates production for VPS beginning in January of 2018.

# Revenue Generation Models

## MARKET DATA

Market data is generally free over the internet from multiple crypto exchanges, but the data is 1) slow and 2) not coded to the same universal format. As a result of those two current deficiencies, to internalize multiple market data streams from multiple exchanges, one would need to code to each exchange spec within their own application, and then establish multiple physical locations at multiple data centers to collect this data quickly, for example in a simple latency arbitrage<sup>6</sup> trading application.

XTRD will obtain market data and build low latency infrastructure so that high frequency and automated trading clients can leverage our existing systems, immediately. In this scenario, with market data feeds being unified and distributed in a low latency application, XTRD anticipates that the feeds also can be monetized on an MRR basis, as with VPS services.

As crypto markets evolve, market data will begin to be sold as a commodity, like market data at all other exchanges. At that juncture, XTRD anticipates becoming a licensed data vendor in the space as we will already have an existing client base and hardware infrastructure at all relevant data centers.

XTRD principals have extensive experience administering market data vendor relationships with NYSE, NASDAQ, CME, OPRA, Direct Edge, BATS, and other market data centers in the US securities space.

Current profits for established latency arbitrage players on US securities markets total in the billions of dollars per year. As crypto markets mature, we will begin to see a movement toward increased liquidity, lower fees, lower

spreads, and an increase in automated trading; i.e. the same characteristics that define the securities latency arbitrage market. XTRD is perfectly positioned to take advantage of this enormous opportunity by establishing the infrastructure now, ahead of the curve.

## SOFTWARE LICENSING

Professional market data and trading platforms such as Bloomberg typically charge a monthly software fee for utilizing the platform, especially if the platform is licensed across a spectrum of users in an organization. Pricing gradients differ based on the functionality and type of user, ranging from free basic versions to high end, heavy duty platforms with all the bells and whistles.

XTRD anticipates leveraging the professional user adoption of XTRD FIX and XTRD Pro with a subscription software model, also on an MRR basis.

## CREDIT SLEEVE

Market participants often have credit relationships with other specific counterparties, but not with all. For instance, trader A may only want to trade with traders C and D, but not B and E. XTRD anticipates performing in a credit sleeve<sup>7</sup> capacity for multi-counterparty and multi-leg cryptocurrency transactions. For example, if trader A has credit with XTRD, and XTRD has credit with counterparty B, but A does not have credit with counterparty B, XTRD can act as a sleeve provider by cross-guaranteeing execution to trader A with counterparty B, in exchange for taking a small percentage of the trade as compensation. Credit sleeves will allow XTRD to leverage our balance sheet and act as an inter-market mediator to create liquidity in the cryptocurrency space.

<sup>6</sup> Latency arbitrage is the practice of trading the same asset, for example BTC/USD, across multiple exchanges to take advantage of different prices. The most important components here are low execution fees to ensure the trade is profitable, and high-speed market data and order entry to allow a market participant to profit from the difference in price before prices converge and the opportunity is eliminated.

<sup>7</sup> A credit sleeve cross guarantees a transaction between two parties who do not have a credit relationship by utilizing a third party which has a credit relationship with both initial parties. .



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