

# MOONX

WHITEPAPER  
VER2.0

World's First Cross Assets Public Chain



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# 1. Introduction

## 1.1 Vision

MoonX, a Public Blockchain solution is poised to revolutionize the services for investments such as cross-commodity trading, Forex, Digital Assets; Payments – Cross border payments; Fintech DApps. The advanced technology will create the fastest, safest and easy to adapt solutions for business to onboard and start capturing value seamlessly with a focus to mitigate inefficiencies and reduce associated operational and processing costs.

## 1.2 Background

The market is competitive for all products and Distributed Ledger Technology or blockchains is no exception. Bitcoin might be viewed as the chain of security, yet a strong chain is only as valuable as the business attached. Recognising this, Ethereum touted the worldwide unstoppable Turing computer, a goal that might appeal to computer scientists but has thus far been elusive to other disciplines. R3 built Corda to serve the needs of the financial institution, which is a large market but being expensive pushed this to be more exclusive than inclusive.

Bitcoin has established a general limit of about three transactions per second (TPS), post which, transactions may be severely delayed. Ethereum offers up to 15 TPS, and a recent congestion

event was marked by a \$2000 transaction fee to jump the queue. The limits on a blockchain's throughput are many: validating prior claimed blocks, processing the new block, and mining. While, Corda avoids these limits for the most part, as its consensus is via selectable, independent and localised notaries, as there is no need for wider consensus than the parties. Every system is encumbered by the physical limitation of network propagation times.

Notwithstanding the hype surrounding blockchain, there is relatively little hard evidence of successful use cases. Bitcoin establishes a single currency, but the explosion of altcoins, the failure of colored coins, and the absence of any smart contracts of interest suggest clear limits. Ethereum tried to break those limits but to date success eludes, unless one considers the somewhat circular use case of raising funds on the promise of future use cases, as marked by steady traffic in ERC-20 contracts. Perhaps surprisingly, the progenitors of EOS number are two 'interesting' use cases that have reached production and scale, being a distributed exchange (Bitshares) and a social media site (Steem). The promise of smart contracts, however, remains elusive.

The MoonChain vision is to establish a single global contracting blockchain coupled with implication engines that offers scalability to handle a long-tail of financial institutions and SME businesses via negotiating contracts that also offers custodial promises for mutual advantage in a safe and secure environment.

In more practical terms, while there is much of value on the Internet, we focus on what is mediated by the web, and leave aside mobile and applications for now. What does a builder of a web application want? We assume that the target user is the web entrepreneur, and therefore let's work backwards from that position.

MoonChain is a new approach to creating, valuing and rewarding network participation that enables rapid deployment and growth of distributed applications. With an emphasis on ownership and accountability of network coordinators in addition to transparency and immutability, this model provides a platform that fits much better with the requirements of modern enterprises than fully decentralised and permissionless systems. By providing the tools and incentives for anyone to participate and provide services to a growing ecosystem of networks, this platform will create a new economy based on participation and transparency.

### 1.3 History of Payments

There's tremendous growth in cross-border transactions over the last decade despite economic fluctuations, and it is set to continue in the same manner. However, there still exist issues that wedge the smooth functioning of this system. The current challenges in cross-border transactions can be broadly divided into the following categories:

- A. Inefficient process of transfer:** The account opening process is cited as a primary challenge by traders. Often, it is cumbersome and time consuming. This creates the demand for a user-friendly platform that streamlines the registration process for domestic as well as cross-border trade.
- B. Execution challenges:** The key issues faced at an execution level are as follows:
  - (i) Multiple levels of compliance requirements
  - (ii) Time zone restrictions
  - (iii) Redundant systems

- (iv) Human errors
- (v) Vulnerability of systems

- C. Limited to pairs:** Most trading platforms in the existing realm support limited currency formats and restrict the scope of digital asset trading. For higher returns, traders are required to transact over multiple exchange platforms for conversions into the desired currency format. However, in doing so, the trader is subjected to risks in the form of currency fluctuations and higher trading fees. For example, a trader may want to trade a commodity like crude oil with the ETH cryptocurrency, however, is unable to do so without the use of an intermediary known as a Base. This would mean higher costs associated with the delayed trades in a highly volatile price market.
- D. Legal Challenges:** The distinct parameters in legal systems across the globe is an obstacle to an effective transaction. Not only do the principles of financial transactions vary from country to country, but the difference in the underlying concepts of financial trade could go beyond legal guidelines. Also, there is a constant threat of performing financial transactions in countries with underdeveloped legal systems.
- E. Cultural Challenges:** While customary ways of resolving a dispute can help in domestic dealings, the same may not be true when it comes to cross-border transactions. Cultural differences can lead to challenges in the form of communication and understanding, which demands additional planning.

Given these shortcomings, MoonChain and its potential to transform the system of transactions is gaining momentum. Simply put, Blockchain is a universal ledger present in a distributed network which is accessible to all the participants in the network. The ledger is validated by a consensus mechanism which means that direct transfers can be initiated without the risk of manipulation. This also mitigates the need for intermediaries or correspondent banks.

Swift is a key player in the cross-border payment space and its services have been adopted by banks across the globe. With an aim to streamline the payment process, Swift launched its Global Payments Innovation (GPI) initiative in 2017. However, compatibilities issues continue to plague the local clearing systems.

To address this issue, the payment industry is exploring the capabilities of blockchain technology. Recently, JPMorgan introduced the Interbank Information Network (IIN), a permission-based network for secure exchange of information associated to cross-border payments. More than 75 banks signed up for this service within months of its launch. The world of cross-border transactions is undergoing a digital transformation to eliminate frequent delays, high transaction costs and friction at all levels.

#### 1.4 History of Investments in Commodities

Commodity markets were found in Sumer between 4500 and 4000 BCE, citizens would use clay tokens sealed in a clay vessel as a medium of exchange for goats. Clay writing tablets indicated the number of clay tokens inside each sealed vessel,

and the merchant would deliver the specified number of goats. The fact that the clay tablets included the amount, time, and date tells us that they were the earliest form of commodity futures contracts. Over the years, gold and silver naturally evolved into a medium of exchange on their own. They were used to pay for goods and commodities, for example, or to pay for someone's labor. A specific amount of gold would be measured out, and gold became an early form of money.

As time passed, regions began to make their own forms of coinage. By the late medieval times, reliable scales had been invented that allowed villagers to easily weight different forms of coinage. Instead of traveling to urban centers like Amsterdam to weigh coins or goods, villagers could travel locally. By the 1500s, stock exchanges started to emerge – including the Amsterdam Stock Exchange. Some of the major events in the emergence of commodity exchanges include:

- Amsterdam Stock Exchange in 1530
- Chicago Board of Trade in 1864
- Commodity Price Index of 1934
- Commodity Index Funds – 1990's

Today, commodities and futures markets are complex exchanges found across the world – including everywhere from the Chicago Board of Trade to the Tokyo Commodities Exchange. For these reasons – and countless others – commodities and futures markets play a crucial role in the global economy. They're not going away anytime soon – so we still have plenty more history of commodities trading to write.

## 1.5 History of Investments in Forex

The foreign exchange market is a worldwide network of banks, brokers, multinational corporation, and central banks, all of whom buy and sell currencies. Between the end of world war 2 and 1973, the foreign exchange market operated under a fixed-rate system. Since 1973, the market has worked under a floating-rate system. The abandonment of the fixed-rate system has led to increased exchange rate volatility. Market participants, including governments, have become increasingly disenchanted with floating rate system because of the volatility that it engenders.

Two major factors responsible for the expansion of the market are deregulation of local capital markets and promotion of free trade, and technological advances. The resulted deregulation and trade expansion have brought the world economies to increased state of interdependence.

Some of the major events that steered to the formation of modern foreign exchange market:

- Brentton Woods to the Smithsonian Agreement
- Growth of the Euromarkets and Offshore Centers
- OPEC in 1970s, the oil shocks
- Expansion of Telecommunication and Computers
- Global Foreign Exchange Market

## 1.6 History of Investment in Bonds

In 1688 William of Orange, the Dutch Stadholder became William 3 of England, and he brought them with him what the Tories sneeringly called “Dutch Finance.” This eventually gave birth to perpetual marketable bonds.

The international bond markets refer both to the sets of broker-dealer over the-counter debt capital markets, trading bonds issued by government, municipalities or corporate organisations and the various fast-growing electronic bond trading platforms resulting from either single initiatives or more frequently from a consortium of banks and dealers like TradeWeb, BrokerTec, Euro MTS, WebET, eSpeed, BondBook, BondDesk and many more. In the bond market, one usually also separates the primary market, corresponding to the issue of new bonds from the secondary market, trading existing bonds. In contrast to equity stock market, there is no such thing as exchanges, although the emergence of trading platform may finally lead to similar environment as electronic stock exchanges.

## 2. MoonX Architecture

### 2.1 Core

MoonX is finding solutions to problems associated with “Post-trade” phase and the risks and costs associated with the cross-border payments, cross-commodity investments, Forex, bonds, derivatives, futures, and the way data is stored and managed.

MoonX recognizes the following:

- a. The need for a central body requiring clearing transactions in a real-time basis.
- b. Unnecessary margin/collateral requirements
- c. Inefficient post-trade processing
- d. Manual approvals and contracts
- e. Mutability of sensitivity data and lack of transparency
- f. Complex fund servicing, accounting, allocation and administration

### 2.2 MoonX Blockchain

The traditional clearing houses were introduced to reduce risks associated with capital markets, however, widespread concerns with real-time liquidity continue to plague the system. There are initiatives to improve upon the existing clearing houses but will not be able to match the expectations from the trades of the future.

The current push for decentralisation has produced a variety of innovative applications to create a new vision to structure social and economic networks. However, while there is immense potential, full decentralisation of control does not cater for the natural and necessary need for ownership that is fundamental to many



businesses and organisations. Open and distributed networks with a centralised policy and legal accountability will provide a balance between decentralisation, transparency, governance and ownership while being scalable, efficient, and secure.

MoonChain is a public chain with permissioned attributed to its blockchain technology which provides transparency and immutability for coordinating participation and tracking the behaviour and performance of the network participants. In this new model, access to the network and permission to participate (i.e. to engage in the provision of a service in exchange for a payment) is administered by a central entity - the coordinator - but in such a way that all network participants can independently view and verify the global state of network participation which is governed by consensus rules.

### 2.3 Most competitive Pricing

Ever since the first machine was installed by Robocoin in Vancouver in October 2013, Bitcoin ATMs have faced several changes. The number of crypto ATMs in the world is rising steadily and is experiencing increased usage from customers. Still, the legal status coupled with high transaction fees, prevents their growth from being as impressive as it could be. As of 2016, average bitcoin ATM fee is 8.4% for buying bitcoins from machines, and 5.4% for selling bitcoins for cash. The prices are very expensive for users to carry withdrawals. Talking about the inefficiencies in Fiat Transfers in global payment system:

- Price Fluctuation - With passing years, the value of fiat money is bound to depreciate, leading to inflation pressure because of higher import prices and increased demand for exports. It becomes challenging for businesses with small capital to participate in events and be a part of the global trading market.
- Lack of Acceptability - Even with such notable advancements, presently, merely 41% of the global population own bank accounts. Rest of the population still cannot transact or trade beyond their physical borders.
- Double Spending or Double Booking - Using fiat money make online purchases expose users to online fraud as the same card (debit or credit) can be used by anyone to make payment without authorization. This is one of the critical reasons as to why users are still uncertain about adopting online payment methods.

When it comes to commissions that is being charged, there is no universal system regarding trading commissions charged by brokerage firms. Some charge rather steep fees for each trade, while others charge very little, depending on the level of service they provide. A discount brokerage firm might charge as little as \$10 for a common stock trade or even less, while a full-service broker might easily charge \$100 or more per trade. This is apparently very expensive for high volume trades and as well individual traders.

## 2.4 Revolutionary Coin Mechanism

Every user is rewarded with Moon Money and becomes a MoonX Family member. Being a part of this family means potential profit dividend, decision making and voting rights. MoonX would enable coin holders to make decision based on their own willingness via smart contracts which would be built in the future. Moon Money is mined by all community members based on their contribution to the Moon Family. They stand to benefit from the performance and appreciation of Moon Money over time and all transaction fees will be reimbursed with Moon Money.

## 2.5 Military Level Tech and User-friendly Product

MoonX technology is developed by global stock exchange leaders by giving security as one of the top priorities of the product. MoonX will offer clients an end-to-end user interface. MoonChain is built robust to not be affected by any external factors such as market crash etc.

## 2.6 Enable payment gateway and cross-border transaction

Blockchain based payment processors provide users with nearly instant and diverse means of using digital assets, which in turn enhances liquidity and reduces liability. Blockchain works on the core principle of decentralization enabling a digital payment network for a very low fee.

At present, the large amount of data and transaction volumes render the traditional payment processors ineffective, when mapped in terms of cost. The cost of point-to-point transactions is reduced by a large margin with the introduction of blockchain-based payment processors.

Say for instance, you are in Massachusetts and you'd like to buy a T-shirt from a vendor in New York. Here's how you'd buy it online – select the product, enter your card details, confirm the order, and your order is placed. While on the surface it may appear simple, but here's what really happens:

- The card info reaches a third-party payment processing vendor
- The information is sent from the third-party payment vendor to the bank
- The bank confirms the transaction
- The payment processing vendor then updates their database marking the recipient

In the above scenario, everyone involved gets their cut at every point in the transaction. With blockchain taking over the payment system, the role of middleman is completely nullified, and all the transactions are streamlined.

## MoonChain removing the myth of latency

The current scenario:

Name	TPS
Bitcoin	3-4
Ethereum	20
Paypal	193
Visa	24,000

Source: <https://bitcointalk.org/index.php?topic=4722160.0>

MoonChain's mission is to connect the world through its most innovative, fast and secure technology that is designed to cater the modern financial market. The DLT is embedded with cross-asset engine which is powered by proprietary MoonX implication engine. The **Implication Engine** of MoonX is the first-of-its-kind system which allows users to convert their base trading currency into any desired format. For instance, a user will be able to convert from THB to KRW without having to go through currency pairs. This improves liquidity and the trading volume but at the same time provides a chance for every currency to compete with the rest. By abutting spread, the implied order functionality of MoonX increases liquidity even in illiquid markets. Also, traditional models in currency transfer come with higher remittance fees to cover the expenses related to payment processing. MoonX, with its top-notch algorithm relieves users of the hefty fees levied by banks to send currencies across borders.

MoonChain supports more than 100 million accounts at peak scale with near-linear scaling architecture. The product is being built to support a larger account base with a higher transaction throughput per account. The system offers the industry's lowest latency, accommodates exceptionally high throughput, and has in-built fault tolerance, risk management and disaster recovery mode. With the throughput of several million transactions per second, ultra-lean design with advanced risk controls shall be incorporated.

### 2.7 Implication engine as cross asset consensus

Consensus ideally means a decision-making process in which all the participants develop and support a plan that best suits common interest. In simple terms, consensus can be defined as a jointly acceptable resolution which aligns with the views of the majority. The benefits of consensus are available to anyone who aligns to the common perception and it relies on below parameters:

- Cooperation
- Common points of agreement
- Egalitarian approach

- Inclusive development

Consensus and algorithm are the important aspects of a blockchain. When combined, a set of guidelines are created to enable individuals to arrive at largely accepted decisions in a group. Though the founding block of a blockchain network, Consensus Algorithm also acts as a catalyst in the formulation of network rules that guide the sequence of events. Below are some of the key points in a blockchain consensus mechanism:

- Fresh transactions are broadcasted to all the nodes
- Every node accumulates new transactions into a block
- Blocks are accepted by the nodes only if all the transactions are valid

One of the most basic and pertinent requirements, in the Cross-asset payments and trading is the client offers a large bouquet of altcoin trades and access to trade any coin to any coin. The MoonX Implication Engine is the first of a kind in the world which enables users to literally trade any asset to any asset within the platform. For Example, a user shall be able to Trade with NEO or Ripple and be able to buy ADA or EOS without having to go through the base pair (BTC, ETH or USDT etc.) conversion. This shall improve the liquidity in the market and encourages and supports the high volumes and promote every good quality Coin to compete against each other to be on the top of the world. Apart from altcoin trading, MoonX will provide support for implication engine, giving traders the flexibility to gain from relative price-volatility within crypto-pairs. MoonX intends to provide initial support for few coins as base pairs and set to remove the concept of base pairs within 6-8 months down the line.

## **2.8 Multi-Device and Cross-Platform Support:**

MoonX aims to provide multi-device and cross-platform trading clients. In a bid to improve and enhance the trading experience, constant additions to our existing platforms and devices will be supported in the future.

## **2.9 Trading Products and Services:**

MoonX will provide industry standard trading products and services including - Spot Trading, Margin Trading & Futures.

## 2.10 Extended Feature Support:



### Enterprise-Grade Security

MoonX is built with enterprise-grade security on a multi-tiered server architecture with isolated layers for enhanced security.



### Bouquet of Services

MoonX plans to offer a bouquet of professional and semi professional services on financial market, including but not limited to value creating campaigns and trading venues.



### Instant Access to Real-Time API and Historical Data

MoonX provides access to enterprise-grade feeds for individuals and Institutions



### Trigger SMS, E-Mail, and In-Browser

MoonX users will be able to set price alerts through low-latency data feed.

## 2.11 Compliance and Regulation

MoonX will adhere to compliance and regulatory requirements of the regions we operate in. While, central banks do not have clear regulations for cryptocurrencies, we plan to self-regulate by imbibing best practices across geographies. To fulfil this goal, we are designing a proprietary know-your-customer/KYC and anti-money laundering/AML Policy to safeguard our customers. The appointment of a competent and qualified team to review and update our KYC and AML policies to ensure the compliance with all relevant and applicable legislation, regulations and recommendations and monitor changes to the national compliance laws for KYC and AML policies.

## 2.12 Storage

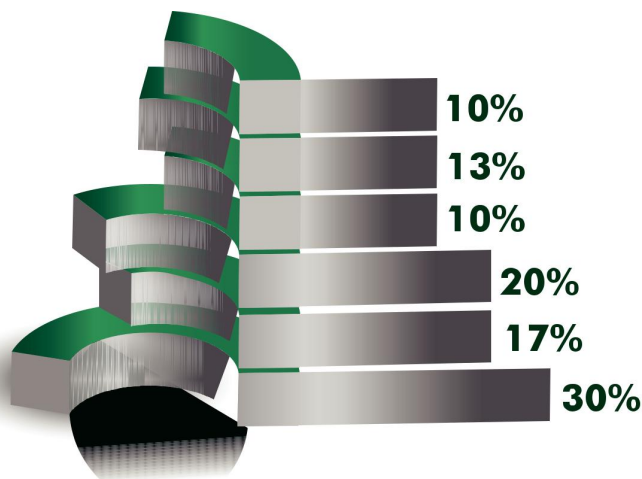
### Blockchain Storage

MoonXChain storage chooses to use LevelDB and Cold Storage. It has high performance, security features and supports arbitrary byte arrays as both keys and values, singular get, put and delete, batched put and delete, bi-directional iterations, and simple compression using the very fast algorithm powered by Cross-Asset Engine.

### State Storage

MoonChain has a KhaosDB in the full-node memory that can store all the newly forked chains generated within a certain period and supports witnesses to switch from their own active chain swiftly into a new main chain. It can also protect blockchain storage by making it more stable from being terminating abnormally in an intermediate state.

### 3.Moon Money Token Plan



#### **30% To be "Mined"**

Coins would be rewarded to the members of the Moon Family. The essence of this part is to reward the people who contribute by trading and interacting in the MoonX ecosystem.

#### **17% Sponsors and Investors**

Coins are held by early sponsors and strategic investors. MoonX sets very selective standards on early sponsors and investors. They have 1-year lockup period and 25% release on a quarterly basis.

#### **20% Family Executives**

Family Executives are the Executive Team who are the early Founders and serve the team. They have 2-year lockup period and 12.5% release on quarterly basis.

#### **10% Marketing and Operations**

Coins are prepared for expenses in the form of marketing and operations of the MoonX Ecosystem.

#### **13% Ecosystem Fund**

13% Ecosystem Fund will contribute towards the long-term growth of MoonX ecosystem

#### **10% Moon Currency Fund**

Moon Currency Fund acts as a central bank whose major role is to stabilize the price growth of Moon Money and sets currency regulations to make Moon Money sustainable in the long run. Moon Family would select several nodes and super nodes on different layers, we create a mechanism for any normal user to become a super node based on the performance and contribution to the ecosystem and all coin holders can vote on their opinions via smart contract.

### 3.1 Protocol

Our security standards protocol adds a compliance layer upon existing public blockchain technology, thus enabling the exchange of tokens only when compliance requirements are met. In other words, the security token protocol used by the MoonX platform embeds compliance requirements in the tradable tokens, making them available only to verified users. The surface layer allows the permanent address for the token to be maintained on the blockchain.

This underlying feature permits the token to be upgraded in real-time with the regulatory changes from time to time. The second layer is known as the compliance layer where rules on transfers are monitored and the regulatory requirements are updated. This layer undergoes a timely refresh to update with specific requirements issued by the regulatory bodies. The third layer, also known as the data layer, maintains the core ownership data associated with securities and instantly updates the information whenever ownership changes take place. It can be termed as the dynamic registry of the MoonX security protocol. The data layer is backed by a strong security architecture that safeguards customer data from any form of exposure on the chain.

#### SECURITY STANDARDS PROTOCOL OF MOONX

