

SMART CONSENTABLE DATA EXCHANGE WHITEPAPER

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Jupiter Chain by JEDTrade



JUPITER CHAIN

Our mission is to enable inclusive finance for the masses and channel equal opportunities to the underserved. We believe blockchain holds the key to democratizing power and resources with trust, fairness and accountability.

PRELIMINARY DRAFT AS OF 23rd July 2018; TO BE SUPERCEDED BY FINAL DRAFT

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1. Introduction

Advancements in machine learning and artificial intelligence are allowing us to understand users better, but there is an inherent problem: it is hard to get to the data and even if you do have data, it is lopsided. Data is owned by large commercial entities and may not provide a holistic view of the user. The advent of decentralization brings about the opportunity to distribute the balance of power giving data subjects control over their own data. Through Jupiter Chain, we aim to combine the latest advancements in blockchain and data analytics to forward our cause of bringing power over data to the masses. Our vision is to create a smart, consentable data exchange that is accessible to everyone.

Current financial offerings are largely commoditized to suit general needs, as a result, consumers end up with ill-fitting products. Fintech is evolving rapidly, and many innovative products and services are emerging in the market. The race to create customized financial offerings through technology is on. However, without a shift in the current paradigm, smaller service providers will not stand a chance against large incumbents who usually monopolize the data. Jupiter chain will enable smaller fintechs to compete, given that a holistic view of the user is made accessible to all financial service providers - big or small. Jupiter Chain ("Jupiter") will allow truly inclusive finance where everyone can get access to financial products and services which are tailored to best suit their needs. ***Our mission is to enable inclusive finance for the masses and channel equal opportunities to the underserved.***

i. About JED

JED was initially founded with the mission of creating an inclusive trade and finance ecosystem to benefit especially smaller companies who may not have access to financing. Our enterprise solution was launched as a trade and cash flow optimization tool for suppliers and buyers to achieve win-win outcomes in terms of advance cash flow and better yields. The financial inclusion objective is for the bigger boys to help their smaller suppliers with a cheaper and faster option to finance their working capital gaps - one that is leveraged on existing trade relationships. In Singapore, our projects include VAS provider on National Trade Platform by GovTech Singapore and joint collaborations with e-logistics providers, lenders and other service providers.

Beyond Singapore, our first markets are in ASEAN and with a focus on inclusive finance solutions for the underserved segments. Our current projects include: technology partnership with a Vietnam microlender that includes a working collaboration signed with a local NGO comprising of 400,000 borrowing member base; and technology development for one of the top five remittance players in Malaysia with 700,000 users to build identity and credit data, e-wallets and lending services on the blockchain. Similar projects in Indonesia are expected to be secured and implemented in the first eighteen months as well.

As observed, JED is a technology partner to lending and finance-related services in these markets e.g. lenders, remittance players, insurance, etc. We also discovered one commonality across these ecosystems on the ground, i.e. these institutions serving the poor or underserved segments, all have massive, unorganized data about their user base. However, with digitization, there is an opportunity to better organize this data and package an individual's credentials into a trusted asset on the blockchain. Hence the creation of Jupiter is to create a smart, consentable data exchange that allows the masses to own and control their data, to be rewarded directly for providing and to access financial products and services that are tailored to each individual. Jupiter's mission is to help the redistribution of resources and wealth to reach the underserved, and to help bring them out of poverty through inclusive finance solutions.

ii. Jupiter Chain: What are we trying to solve?

From our experience in delivering inclusive finance solutions via our various projects mentioned in the earlier section, we have identified the following key problem statements that Jupiter aims to solve:

a. Incumbents and large institutions own and control all data

In many markets, it is not uncommon for a few incumbents and large institutions to monopolize a majority share of the market. Hence for essential goods and services such as financial services, these large incumbents have significant control over the use of our data and their own discretionary decision-making. Even in less developed markets, new financial service providers just need to be a large enough or possess ample resource to monopolize an ecosystem and control all data. The resulting negative outcomes from this phenomenon is twofold: firstly, no one truly has ownership and control over her own data; and secondly, incumbents will make it difficult for competitive, inclusive solutions to thrive due to lack of direct access to the customers.

b. Data of the unbanked and underserved is fragmented and disorganized

The unbanked continue to be 'unbankable' due to inadequate infrastructure and systems to ensure accurate identity management of each individual. With fragmented identities and insufficient credit data of an unbanked person, larger financial institutions that are closely regulated by central banks are unable to extend lending to this segment. Although microlenders exist to introduce credit to the unbanked, many are still unreachable due to lack of accessible data. This results in either higher interest rates to balance the risks or more often, the proliferation of shadow lenders.

c. Traditional financial service providers assign low priority to this segment

Stemming from the above reasons that deal with higher risk profiles and lower transactional value of microlending activities, larger financial service providers thus do not prioritize the needs

of the unbanked and lower-income segments. As such, financial products and services may not cater to the needs of these people and there may be low or no motivation to provide innovative, inclusive finance solutions that can truly help improve their lives.

iii. Jupiter's First Use Case: Inclusive Finance

To validate and test Jupiter's value proposition, we will apply it to 'inclusive finance' as the first and most important use case. There are large excluded populations especially in developing countries and access to finance is one of the major pain points most in need of solutions. Thus, this is also the vertical that we can make the most difference and impact. According to World Bank's Global Findex Database¹, there are 2 billion adults without bank accounts as at 2014 - thus a huge market opportunity for innovative fintech products and services. In this same connection, financial products and services that are tailored to each individual's needs, will be key to precise poverty alleviation.

In an earlier paper titled 'Emergence of FinTech and the LASIC Principles' co-authored by Jupiter's Advisor, Prof David Lee Kuo Chuen and CTO, Dr Ernie Teo, five attributes were outlined as the basis for successful firms including Alibaba and M-Pesa. Similarly, we believe that Jupiter's mission and market strategy is also closely aligned with this same set of principles.

a. L - Low profit margin

High network effects require an initial phase of critical mass accumulation. As Jupiter will be targeting the masses and underserved segment, the emphasis will be on achieving critical mass adoption by making our solution accessible and affordable to all. As the network expands with more ecosystem partners, revenue from various channels and creation of new products can be captured in the longer term.

b. A - Asset light

The Jupiter platform adopts a mobile adoption policy. This requires minimum fixed costs and allows for the platform to scale without incurring large infrastructure costs. The Local Community Ecosystem Chain model allows for easy deployment and customization in each region without disruptions to the main net.

c. S - Scalability

Jupiter's blockchain protocol is designed to address scalability considerations in ensuring optimal efficiencies running within and across the local ecosystems. In addition, Jupiter adopts a 'Mobile First Strategy' in our technology architecture, design and implementation in order to achieve digitization and network effects. This works well even for developing markets as mobile penetration rate is already high and is anticipated to grow exponentially over the next 5-10 years. We aim to

¹ <http://www.worldbank.org/en/programs/globalfindex>

achieve true scalability by creating a platform that can benefit the masses (not just the underserved) through the smart consentable data exchange.

d. **I** - Innovative

Jupiter Foundation will support the continuous R&D and evolution of the technology and platform. The Jupiter Chain design and architecture is illustrated in the later sections of this paper. We aim to be practical in our innovation strategy, pulling together feasible technology to fit our use case and creating new technology to address any gaps.

e. **C** - Compliance easy

We believe that Jupiter embodies the right social, financial and economic inclusion agenda. We address key considerations of contemporary governments in our platform design such as personal data privacy considerations. The modular nature of the platform for third party services would make it easy for these services to adapt to any changes in regulatory requirements.

v. Implementation strategy

Especially in the less developed markets, processes are still not digitized and records are heavily manual and paper-based. Hence to achieve Jupiter's objectives, implementation will be carried out in three broad phases:

Phase I: The first step is to digitize the data and processes contributed by both users and ecosystem partners. This includes authentication of identity and credit risk profiling of existing user base to generate meaningful credentials.

Phase II: Implementation of Jupiter Chain by connecting the local databases and allowing interface of data and value across multiple locations.

Phase III: Scaling the exchange of data over a marketplace; allowing for decentralized provision of financial and data services such as machine learning and AI.

2. The Jupiter Chain Platform

i. Smart Consentable Data

A user's credentials (linked with her identity) will grow as an asset on the Jupiter network and update in real-time as the user transact on the supply chain and financing network. As the user interacts with the platform and contributes data to this trusted asset, it becomes more credible and users can be prioritized for transactions (including loan requests, sales bids) on the network. As an authenticated and trusted asset of value, this 'credit atom' becomes a commodity on the network and commanding its own price.

Capturing the data and creating a data exchange is just the first step to unshackling the marginalized. Marginalized individuals are excluded from modern society due to a lack of information. To empower data owners, they must be able to control data access at a granular level. We aim to drive information inclusion with the Jupiter Chain platform. To bring this one step further, we aim to democratize this information and empower data owners to take control over the use of their data; by making data consentable. Consentable data refers to data which is only accessible by the owners granting consent for usage. Most technology platforms control their users' data and monetize it by selling it for various uses (such as political campaigns). Even platforms that purport to be financially inclusive aim to monetize their user's data. We plan to change this with the concept of a consentable data exchange.

On a consentable data exchange managed on a distributed ledger, user's consent is required, and benefits are exchanged before any data. Smart contracts can administer such exchanges and even limit the use at a granular level; such as exposing only parts of the user's data, limiting the time period it can be used for, pricing of user's reward for consenting to data usage.

In order to ensure data integrity, mechanisms also need to be in place to verify/endorse data before committing it to the database. This is not a trivial requirement, it encompasses encryption of the source data and only allowing the specific data owner to grant access. This is challenging not only in the access control but also in using the data. There are various approaches to this, such as the use of homomorphic encryption or through an extensively managed public key infrastructure combined with a secured data store.

Once a consentable data exchange made up of users' 'credit atoms' is established, the data can be tapped into by service providers on Jupiter Chain platform. Data analytics on 'credit atoms' can be done via smart contracts on-chain to provide enhanced data privacy. There are two types of analytics:

a. Direct analysis of individual users for the provision of tailored services

When a user requests for financial services such as a loan on the Jupiter Chain platform, she can provide direct permission to utilize the data for assessment. The service provider utilizes smart contracts which will perform assessment on-chain with either their own algorithms or tap onto third party assessment services which are provided on the Jupiter Chain.

b. Big data analytics

Entities looking to analyse big data can send out smart contracts with their data requirements. This information gets propagated to the relevant data owners and consent is obtained. Data owners will be reward directly for providing their data. This data is then anonymized and aggregated by the smart contract. This sort of request can be either one-off or for continuous feed. In the continuous

feed, the smart contract will index the data to enable analysis on panel data. Through such big data requests, algorithm providers in the first case can tap onto the ecosystem and use machine learning to refine their assessment modules.

Eventually as more third-party service providers onboard to Jupiter chain, a marketplace for AI and machine learning algorithms can emerge where all users on the platform (no matter large or small) can tap on to these expert services. Ultimately, we aim to realise capabilities to collect, share and analyze massive smart consentable data; by deploying a distributed network on blockchain with a tokenized incentive structure aimed at distributing gains from data users to data owners. In the next section, we discuss how we plan to achieve our vision with the Jupiter chain platform built on blockchain technology.

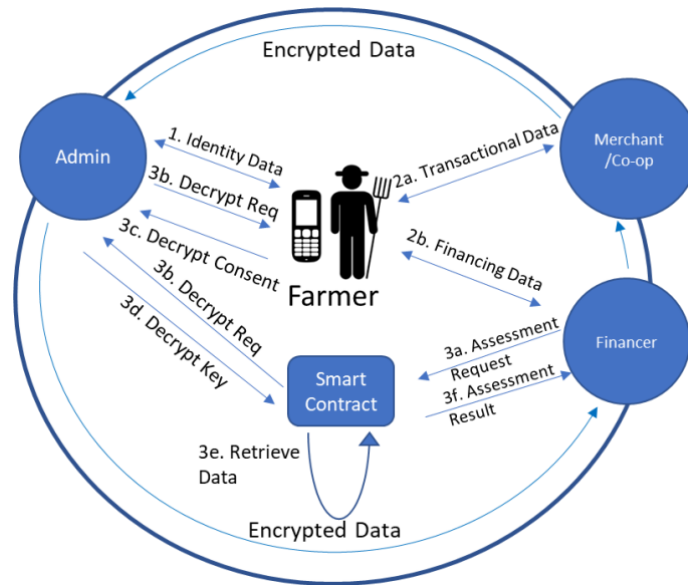
ii. Use Cases of Inclusive Finance

a. Microlending and loans to the underserved

Jupiter allows interoperability across local community ecosystem chains (LCECs) so that finance can flow freely from multiple sources, and cheaper financing options can be provided to everyone in the long run. A Jupiter user can broadcast his request for loan to network lenders, who will be able to connect to him and do a peer-to-peer loan directly. Over time, with more transparency of data provenance and new events contributing to an individual's credentials, it becomes more trusted and hence more valuable. This results in several positive outcomes:

- Lenders are able to de-risk their loan portfolios and have a better understanding of their borrowing base. It is with the intention that lenders can be more capable in assessing and rate this "higher-risk" portfolio and be able to offer cheaper financing in the long run.
- Micro and low-income borrowers have an impetus to keep improving their profiles and scores in order to gain access to cheaper financing. Hence, shaping intrinsic behavior of borrowers to be more responsible and accountable. It also encourages users to track their transactions on the network and utilize services on the platform.
- When credit scoring is applied for financing requests, the better rated credentials can be rewarded with more JUPT. Earned JUPT tokens residing in user wallets - that hold a representation of better risk profile - can also be pledged and used to lower financing or transaction fees.

The blockchain based process is illustrated by the diagram below:



Stage 1. Onboarding, the user is onboarded to the platform. Identity is established through trusted sources (such as government and utility companies) and social sources such as verification by the village head or other peers.

Stage 2. Accumulation of transactional data. As the user transacts on the platform through merchants (such as a farming co-op, equipment suppliers and wholesalers), these merchants record the data on the blockchain. The data is endorsed by the relevant merchant, encrypted and put onto the blockchain. Financing data such as loans and repayments is also recorded on the blockchain via the financer in a similar way.

Stage 3. Credit assessment request. When a user comes to a financer to request a new loan, the financer can request a credit assessment through a smart contract. The smart contract requests for the decryption key from the admin node. The user is notified, and consent is granted. The decryption key is supplied to the smart contract. The user's relevant data then gets, and credit assessment is processed. The smart contract then returns the credit assessment result to the financer. The raw data is not retained by the smart contract, the financer also have no access to the raw data.

b. Peer to peer requests within and across LCECs

A user on Jupiter holding a trusted identity and profile, will be able to broadcast its request for JUPT from other peers in the network. In fact, in the sphere of Jupiter network, it extends beyond existing trusted relationships. Take the case of Vi, who resides in Vietnam. She can also receive payments and transfers from a network peer in Indonesia, who may or may not know Vi personally.

Jupiter enables point-to-point, straight-through processing of even unrelated entities who may want to engage in a private contract and exchange of value between themselves. And they can now do so by trusting the data on the blockchain.

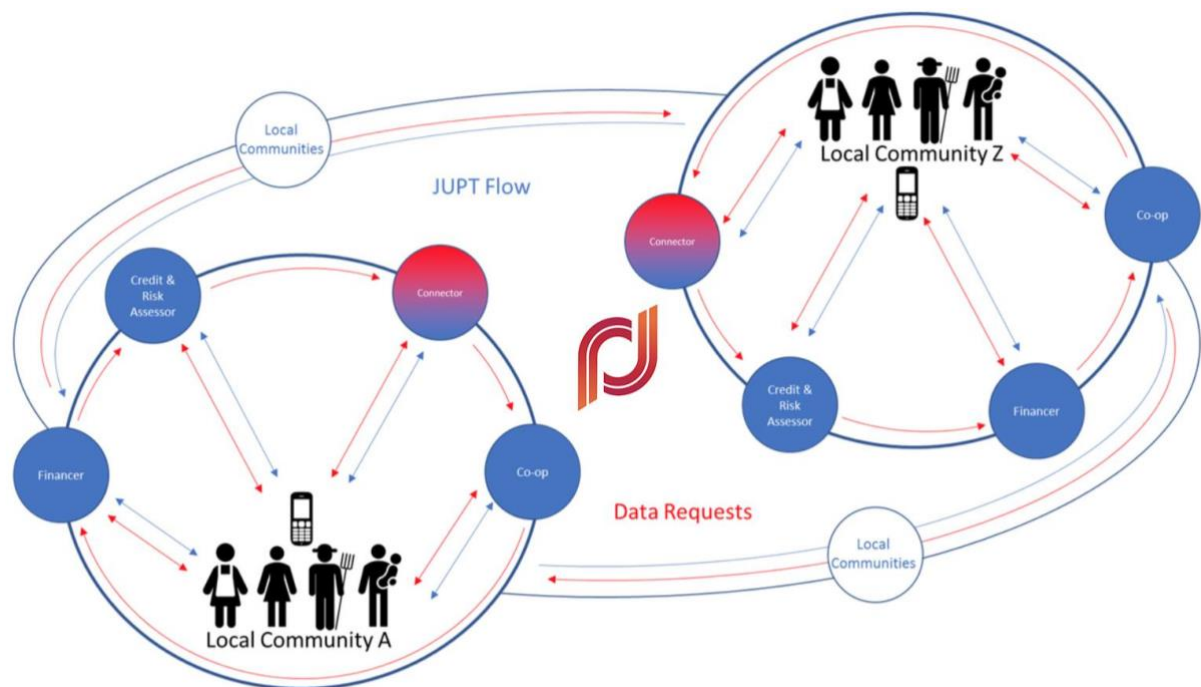
c. Supply chains - traceability and financing

Open APIs on Jupiter allows collaboration with service providers such as lenders, traceability and IOT solutions, last-mile logistics, etc. Traceability data poses valuable benefits for example agri principals who have a need to ascertain traceability of source and sustainable farming methods. For this, agri-farmers can contribute data and be rewarded with JUPT directly by the principals, without relying on middlemen. Lenders can also authenticate the transactions prior to financing and smart contracts can be created to release payment and financing against delivery of goods validated on Jupiter network. Micro supply chain financing leveraged on validation and transparency of supply chain data can help lenders de-risk and provide cheaper financing to farmers and micro-entrepreneurs in the long run. Jupiter can also bridge the web of supply chains by enabling micro-financing between trade partners leveraged on existing trade relationships and trusted, permissioned trade information shared between them.

iii. Jupiter Chain: The Smart Consentable Data Exchange

Most of a user's interactions (transactions as well as service requests) on the Jupiter Chain will occur within her local environment. Credit atoms will germinate and grow in local community ecosystem chains (LCECs) through trusted service providers and ecosystem partners. In rural communities, the LCEC would consist of a small number of nodes serving as trusted endorsers of user data. All peers on a LCEC are peers on the Jupiter Chain. A peer such as a Credit & Risk Assessor or a Multinational Manufacturer may be part of multiple LCECs.

The Jupiter Chain links up LCECs allowing for token flow and data requests across chains creating a smart consentable data exchange. Connector nodes serves as a conduit for Jupiter tokens when they flow into a LCEC. At each connector node, a smart contract will be deployed as an escrow for the native Jupiter chain tokens. This will allow issue of localized Jupiter tokens in the LCEC, these local tokens flow within the local chain and only exit through the smart contract when the token needs to go across local chains. The Jupiter Chain ecosystem is illustrated in the following diagram.



a. The Local Data Layer

The LCEC acts mainly as a store of the local community identity and transactional data. There are four categories of data that can be stored in the LCEC:

Category 1: Identity

The main identity component can be from a trusted government source data or telco/utility data and captured onto the blockchain in an uncorrupted way. In addition, we allow for network validation from linked partners. Linked partners can be the local village chief, local shop owner, other users, suppliers and buyers. The user will be given an identity score and they can be incentivized to build up their identity score through gamification. For eg, they can earn points or JUPTs by linking their account to a phone number, upload a picture and have someone endorse the picture.

Category 2: Network data

This refers to data on how nodes are connected to each other and how their interactions within the network. Interactions and actions on the network provide good insights into the nature, value and volume of exchanges between peers. In fact, the degree of connectedness amongst peers sitting on an LCEC allows a glimpse into the inter-relatedness of network relationships and potentially to match opportunities of even unrelated peers.

Category 3: Financing information

The financing structures, rates and repayment conduct are recorded on the LCEC. And because these records are unrepudiated and registered on the blockchain, it acts to a certain extent as a deterrent to poor repayment conduct and exorbitant financing rates by irresponsible lenders. Other LCECs can connect with each other and access lending and borrowing opportunities. This also means that peers (and microlenders) across LCECs can also reach each other for remit and financing purposes.

Category 4: Localized Jupiter tokens

These are localized by smart contracts at the connector nodes and records information relating to account balances, token transfers and transaction histories.

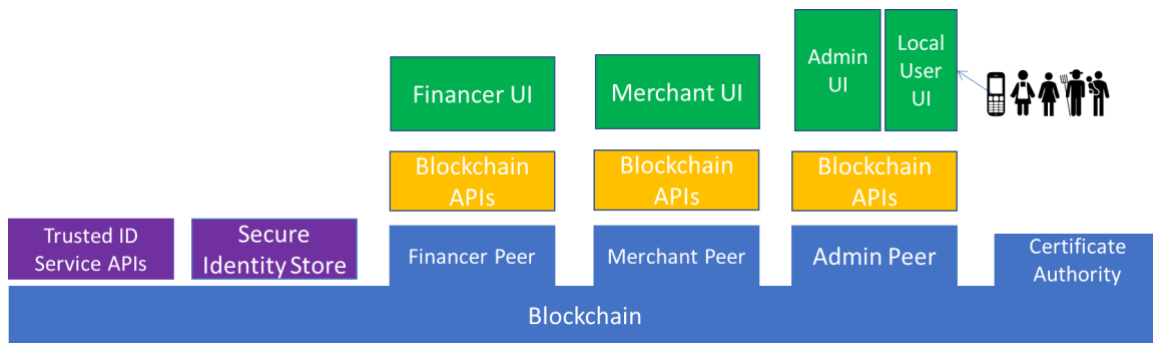
b. Data Management

To facilitate the notion of consentable data, data privacy management is key. On the Jupiter network and LCECs, data will be persistently encrypted and stored in a distributed manner. Data access is managed by a rights management model where the data owners grant consent for access to their data. Identity data which requires a higher level of protection will be held in secure off chain data stores and referenced on chain. Privacy preservation will be achieved in the following ways:

1. When an individual's data needs to be directly assessed. The assessor will deploy a decentralized application which contains the assessment criteria. The decentralized application will be given rights to access and process the data; the assessor will only see the results of the assessment. This provides enhanced privacy over the individual's personal information.
2. When data is requested for the purpose of big data analytics. In this case, the data requests are propagated to peers on the Jupiter Chain and relayed to individuals via a decentralized application. The decentralized application will then aggregate the data in an anonymous manner. The data can be indexed if required for longitudinal studies.

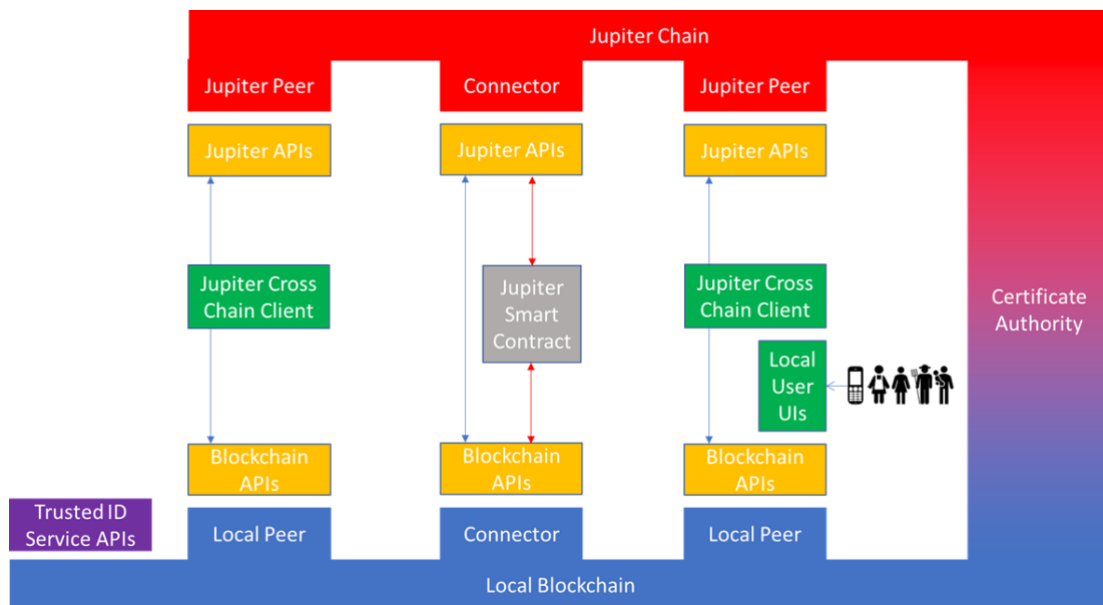
c. Network architecture

Taking the micro-financing use case as an example, there will be three types of peers on the LCEC blockchain, financiers, merchants and administrator. The blockchain will also tap onto trusted ID services through APIs and store user's identity data on a secure identity store. Blockchain APIs will be exposed to connect to the various user interfaces for each peer. The user will interact with the blockchain through Local User UI on the Admin peer. This is shown in the diagram below:



Peers on the local network will concurrently host a peer on the Jupiter chain. These peers cross both chains and interface between chains through APIs that lie in a secure environment on the peer. A cross chain client synchronises communication at all nodes. Connector nodes takes stewardship of JUPT that flows across the networks. A certificate authority manages identities such that they are consistent.

Peers that also onboard local users will do so with a local user UI that interfaces with the local blockchain through APIs. There can also be local trusted ID services such as government or utility companies that provide trusted identity information into the blockchain. This architecture is described in the diagram below.



d. Jupiter Chain Consensus

Since the LCEC only consists of trusted peers which are part of the local community, it can function on RAFT or BFT (Byzantine Fault Tolerance). Jupiter chain will consist of peers from each local community chain. The Jupiter chain is also open to non-LCEC nodes who wishes to participate and provide validation on the network.

As a decentralized network, the Jupiter Chain needs to achieve long run sustainability. There are two parts to this, one is ensuring that the network “pays” for itself with the fees it collects for the token and data transactions. The other aspect of sustainability refers to the token economics. There is a need to ensure that there is continued incentive to participate in validation on the network. The consensus protocol (code name “Jovian”) will be based on “Proof of X” protocols where peers on the network are incentivized to partake in validating transactions with rewards in the form of JUPT.

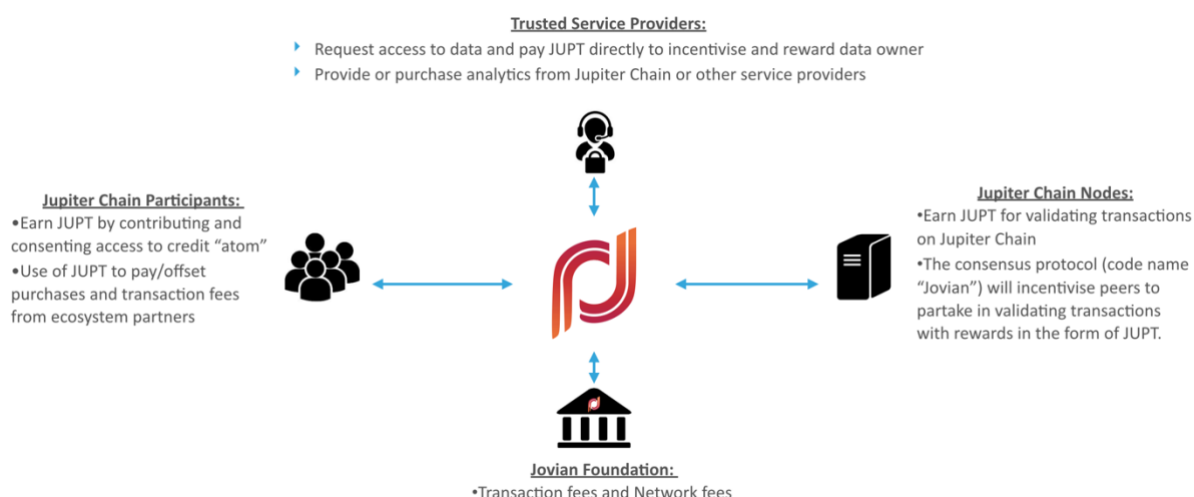
The aim of the Jovian protocol is to incentivize the following behavior:

1. Incentive for Jupiter token holders. Methods such as staking may satisfy this. Limiting the amount or time period a token can be staked and can prevent over-hoarding of the token. This also sustains demand of JUPT before the token swap.
2. Circulation of tokens in the economy. Once the Jupiter Chain is deployed and the Jovian protocol starts, the number of JUPT in the ecosystem is no longer capped. The Jovian protocol when activated will start generating tokens on the network, nodes will participate in consensus and earn JUPT as rewards. The staking mechanism used for the Jovian protocol will impose limitations on the period of time that a JUPT can be used for staking. These will boost supply in the market and encourage usage of the tokens (post token swap).

The research and development of the Jovian protocol will be part of the Jupiter Chain road map, the above outlines the requirements and are subject to refinement.

e. Token Utility

Jupiter tokens will be native on the Jupiter chain. They will be initially issued as ERC20 tokens. At a later stage when the Jupiter chain is deployed, the ERC20 tokens will be swapped into the native tokens. The initial swap will be for pre-mined tokens corresponding to the amount of tokens issued during the ICO. JUPT serves several utilities on the platform, we outline its purpose for types of stakeholders:



Stakeholder 1: Jupiter Chain Participants

General users of the Jupiter chain earn JUPT by contributing and consenting access to their credit atom. They can then use JUPT to pay/offset purchases and transaction fees from ecosystem partners. In the long run, individual JUPT token holders can also lend and transfer JUPT tokens and be part of a network peer to earn rewards for 'inclusion' and supply chain actions conducted on the network.

Stakeholder 2: Trusted Service Providers

Service providers and data companies can utilize the Jupiter Chain to understand the risk-benefit considerations of serving different LCECs and open a whole new scale of market opportunities. These companies can request access to data and pay JUPT directly to incentivize and reward data owner. To do this, they can purchase analytics from other service providers on the Jupiter Chain with JUPT or provide their own. Similarly, third party applications can be offered on the platform by such providers and JUPT used to pay for these services.

Stakeholder 3: Jupiter Chain Nodes

The Jupiter Chain will be a public blockchain where JUPT circulates to the local community ecosystem chains; it will also relay data requests across the local community chains. These interactions will be validated by peers on the blockchain through the Jovian protocol. Nodes can earn JUPT for validating transactions on Jupiter Chain.

Stakeholder 4: Jupiter Foundation

To ensure sustainability of the foundation, JUPT will be collected as fees for various transactions executed on the chain. Service provider nodes also pay network fees to access the network. This is detailed further in Section 3: Jupiter Foundation.

f. Jupiter Chain Project Roadmap

LCEC	LCEC Prototype / Demo	LCEC R&D	LCEC Testnet with JUPT	LCEC go live	Continuous onboarding of LCECs		
Jupiter Chain		Jupiter Chain and Consensus R&D	Jupiter Chain Testnet	Jupiter Chain deployed and go live			
Data Privacy		User Data Privacy R&D	Testing in LCEC	Deploy Data Privacy in LCEC and Jupiter Chain (continuous improvement on privacy model)			
Analytics		Analytics R&D	Testing in LCEC	Deploy Data Analytics Module	Develop Analytics Rating and Ranking System	Onboard Third Party Analytics provider	AI Marketplace
JUPT	Token Sales				Token Swap		
	2018	1st Half 2019	2nd Half 2019	1st Half 2020	2nd Half 2020	1st Half 2021	2nd Half 2021

As shown in the above diagram, development and implementation of the Jupiter Chain vision will take place in 4 tracks:

Track 1. On the ground deployment in local communities

This track includes deploying technology on the ground, testing and development of local community ecosystem chains (LCECs).

Track 2. Jupiter Chain

This track is for the development and testing of the Jupiter chain. It will also deploy the Jupiter Chain to connect with the LCECs.

Track 3. User Data Privacy

This track is focused on developing technology to enable the control and permissioning of user data. This includes the SDKs for decentralized applications that will conduct analytics on-chain.

Track 4. Analytics and AI marketplace

This track deals with the use of analytics on the blockchain and ultimately enabling a marketplace for AI services.

3. Jupiter Foundation

Jupiter Chain's evolution will largely be community driven and the platform will ultimately be open-sourced. The foundation is set up with the mandate to lead the stewardship of digital assets and funds raised throughout the life of the foundation and going concern of Jupiter Chain. Its role covers the following activities:

i. Governance and compliance

Appointed directors and members of the foundation will ensure the setting up of adequate governance frameworks that comply to local laws and jurisdictions that the foundation operates in.

The aim is to ensure accountability and proper stewardship of all activities run under the foundation.

ii. Technology research and development

The foundation or its appointed vendor(s) are responsible for the construction of the Jupiter platform and ongoing research and development that covers upgrades, maintenance, licensing, SDKs and other technical services.

iii. Ecosystem building and adoption

An important role of the foundation is to build and manage Jupiter's community and ecosystem efforts by encouraging adoption and providing support that helps scale Jupiter network. This includes business development activities, expanding ecosystem partnerships and providing required technological support and solutions.

4. JUPT Token Sales

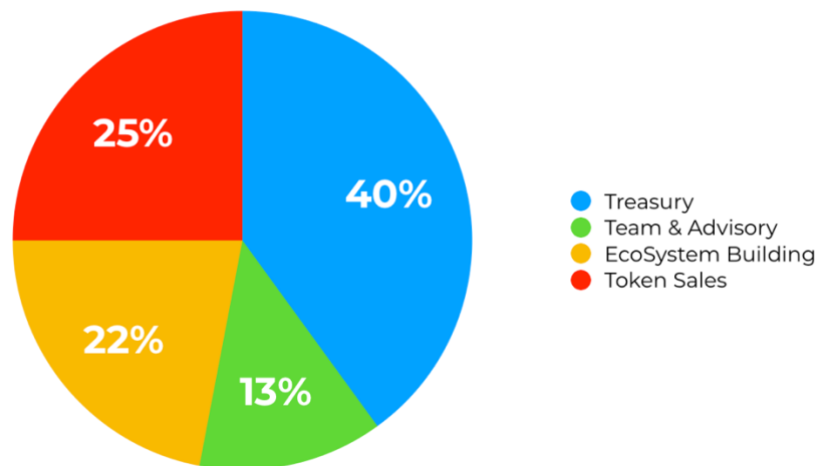
i. ICO Details

Total number of tokens	500,000,000
Total tokens available for sale	25%
Hard cap	USD 22.3 million
Token format	ERC-20 Standard
Currency accepted	ETH

The token economics of JUPT will be different before and after the token swap. Demand of JUPT before the token swap will be tied with the successful deployment and operation of LCECs. The more established the local markets, the greater the demand for JUPT tokens. The potential of reaping the benefits through the Jovian consensus protocol will also encourage demand of JUPT before the token swap. Post token swap, the token economics of the ecosystem will operate through the Jovian protocol on the public Jupiter Chain, this is explained in the previous section on consensus.

ii. Token Allocation

Token Allocation



Token Sales (25%)

A maximum of 125 million tokens will be issued for the token sales and will constitute 25% of total JUPT tokens generated. Any bonus received during the presales rounds will be subject to a vesting period of 4 months.

Team & Advisory (13%)

This is allocated to the founding team & advisors with a vesting period of 2 years for founding team (i.e. 50% vested in the first year and the remaining 50% vested in the second year) and 6 months for advisors. An option pool of up to 2.5% will be allocated for future team members, as we continually recruit new talents to join the team.

Eco System Building (22%)

Users and ecosystem adoption are essential to the success of Jupiter. Thus, this allocation is to set aside for various incentivization and reward schemes that will be deployed for strategic partnerships and effective user adoption.

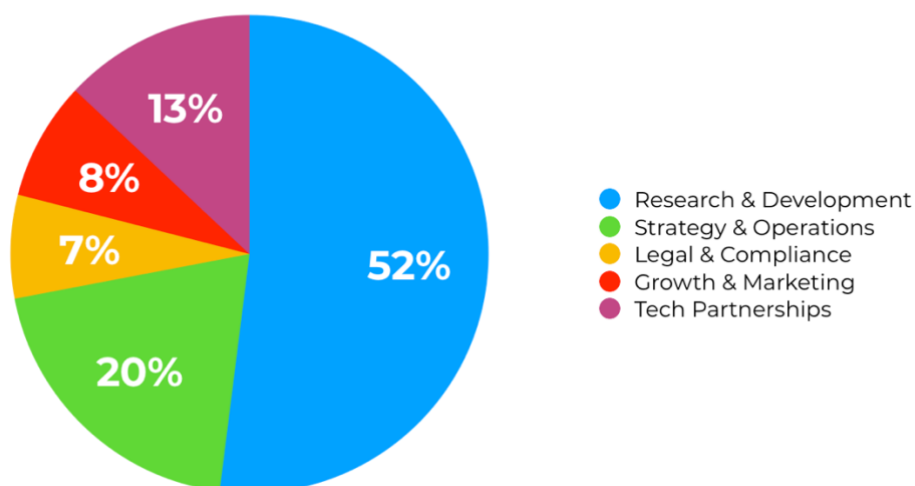
Foundation (40%)

This is reserved for continuous research and development, future fundraising, marketing initiatives and market penetration in new countries globally.

iii. Use of Funds

The funds received from JUPT token sales will be distributed based on the following five main categories depicted below.

Use of Funds



R&D, Project Implementation and Business Development (52%)

Technology innovation, development and implementation is the key to Jupiter's success and explains why the majority of the funds raised will be used for this purpose. Main R&D efforts will be applied to the area of blockchain, data analytics and AI. Project implementation will include all tasks and resources needed to roll-out projects on the ground, which includes required system integration work, training and maintenance, etc. Business development will be important in identifying the opportunities for technology enablement, as well as translating business requirements into the right technology solutions.

Business and Technology Partnerships (13%)

With the same focus on expanding our presence in ASEAN, we will continue to embark on organic growth via strategic business and technology partnerships in this region. This will include joint-venture partnerships and joint collaborations on synergistic business and technology initiatives that can achieve scale and growth.

Strategy and Operations (20%)

It is envisioned that Jupiter chain will be made up of several LCECs within the same, and across jurisdictions. Strategy and operations include all administrative, finance and operational functions required to ensure successful alignment and execution of all projects and initiatives in the countries that Jupiter will operate in. This will include setting up of local management teams, resources and offices where required.

Legal and Compliance (7%)

This will include all legal costs relating to external legal advice and documentation, as well as resources expensed to set up internal governance and compliance standards and guidelines. Regional and international expansion will also require relevant legal costs to be incurred to ensure adherence to local laws and regulations.

Growth and Marketing (8%)

In the first 24 months, marketing efforts relating to product adoption, community engagement and brand affiliation is anticipated to be more intense to prepare the headway for next phase of growth in the 3rd year. Expenses include both domestic and international marketing, roadshows, conferences and events.

5. Conclusion/Summary

i. The Jupiter Chain Vision

We hope to bring about a global data movement that transcends all economies. Everyone on the Jupiter Chain can share data with confidence that privacy can be maintained and be rewarded for their contribution. Users' interactions on the platform will endow them with a "credit atom".

Institutions big or small will find it to their advantage to embrace this data movement. Products and services such as savings, investments, insurance and e-commerce can be tailored to each consumer's unique characteristics. Opportunities to develop new products and services will surface; creating a win-win for all parties.

The Jupiter Chain is also a global network that connects local economies, creating a world federation of data. It will serve as a bridge between first and third world economies, reducing the gaps and creating an inclusive world.

ii. Future Applications - Beyond Financial Inclusion

Beyond financial inclusion, Jupiter Chain is about socio-economic inclusion and enabling everyone to be part of the data economy. Wealth management and investment products can be tailored precisely to suit an individual, considering her past, current and even future potential. Health and social assessments based on psychometric and lifestyle data serves important research and insights for new products and services that strive to promote better quality of life. Innovative and nimble technology solutions especially those with inclusion and 'tech for good' agenda can thrive against larger incumbents and bring true value to consumers.

Jupiter captures not just transactional data but also connections and interactions on the chain. An entity on network may not have direct interaction and correlation with an entity on network but will be able to trust the information and access each other for an exchange of value to take place. Jupiter thus captures supply chain internets that traverses the visibility of direct relationships and obvious lines of interactions. It supports 'networks of networks' and tells the supply chain story.

6. Team and Advisors

Key Management



Tan Ze Chong, Chairman

Ze Chong brings with him over 25 years of tech expertise in the areas of cryptography, PKI and cybersecurity, and delivery of the first public CA in Southeast Asia. He also owns an IT security software company with development offices in Singapore and Malaysia, serving and delivering customized security solutions for government and MNC clientele. He is a pioneer in the PKI space and is involved in setting up the first public CA in South East Asia. He is also involved in the design implementation of a commercial payment product for Asia Pacific.



Daphne Ng, Chief Executive Officer

Daphne leads the vision and direction of the company. She has 10 years of specialized experience in trade and supply chain finance across international banks and is a regular speaker and advisor on the applications of blockchain in this domain. She is Sec-Gen of ACCESS Singapore Cryptocurrency and Blockchain Industry Association, Exco of Singapore Fintech Association and Fellow (Fintech) at SUSS. She was also recently featured in Bloomberg, Forbes and Forbes Asia.



Dr Ernie Teo, Chief Technology Officer

Ernie leads the use of blockchain and technology applications for the company's projects in ASEAN. He is a tech economist with specializations in blockchain and fintech, and keen interest in building inclusive socio-economic systems. He is active in the blockchain community and is an adjunct lecturer at NUS on "Blockchain and DLT" course. Prior to JED, his last position was Research Scientist at the IBM Center for Blockchain Innovation.



Daniel Ling, Head - Development Operations

Daniel manages the tech development team and oversees all architecture, implementation and tech resource planning activities. He has 17 years of experience in the tech industry, with domain expertise in IT security, authentication and PKI. His portfolio includes building and integrating custom security solutions for governments, FIs, MNCs and fortune 500 companies.



Eric Wong, Head - Product Engineering

Eric leads the product and engineering work with the tech development team. This includes translation of business and user requirements and implementation of roll-out timelines. His role also involves identifying suitable tech and use case applications in the areas of identity, credit risk and big data. Eric graduated from NUS with a degree in Computational Science, specializing in Statistics and Mathematics. He currently serves as Mentor for PolyFintech 100.



Lance Low, Head - Trade & Supply Chain

Lance leads the trade product development and innovation that include applications of blockchain, cryptocurrencies and new tech in the trade and supply chain domains. He has 7 years of focused specialization in trade and receivables finance spanning across audit, operations and business development functions in HSBC and UOB. Currently, he also serves as lecturer and mentor for International Trading Institute program at SMU.



Kevin Widjaja, Head of Investments

Kevin leads all investment efforts for JEDTrade. He is also director for the company's Indonesia operations where he takes care of all Indonesia projects and ventures. He is also Managing Director of a multi-asset fund management company regulated by MAS. He has over 12 years of private banking experience managing UNHWIs across international banks. Kevin graduated from University of Michigan, Ann Arbor with a degree in Finance and Economics.



Edwan Chiam, Head of Strategy & Ops

Edwan works closely with the CEO to execute the strategy and operational requirements of the business. His prior experience also entailed him seeing through the planning and implementation of ICO and related blockchain work. He is an ACCESS member and helps drive the Inclusion Subcommittee's efforts to promote crypto content to universities, and to advocate young talents to join the blockchain community. Edwan graduated from SUSS with a Degree in Finance.

Advisors



Professor David Lee,

David is a founding investor of ZCash, Qtum and few other blockchain companies and cryptocurrency. He is a mentor to China Wanxiang's Chain lab Accelerator, a Director of the Sim Kee Boon Institute for Financial Economics at SMU. He is an author of the book titled "Digital Currency". He has been nominated by Internal Consulting Group as a Global Thought Leader for Fintech and Blockchain.



Alyse Killeen (since 2016),

Named Top 70 Bay Area Digital Leader by the United Nations Foundation and a Fintech Fellow at SUSS, Alyse Killeen is a VC investor, ecosystem development-focused founder, and #WomenWhoLead advocate. Her work and investments focus on the global significance and commercial potential of technology and business model innovation. Alyse hosts a few dozen executive women's events every year. Alyse recognized areas in which the innovation ecosystem could be strengthened by community infrastructure development.



Justin Newton,

Justin is an early Internet pioneer and startup veteran. Justin played a key role in ensuring the Internet Tax Freedom, the Communications Decency, the Digital Copyright, and the CAN-SPAM Acts that aids the Internet industry's growth while ensuring the security and privacy of its users. An advisory Council for ARIN: multinational registry for IP addresses. As CEO of Netki, Justin is working on products which foster the mass-market adoption of blockchain technology.



Chia Hock Lai,

Hock Lai has a special interest in making the financial system more efficient and inclusive. He has close to 2 decades of experience in the financial industry, having performed roles in both business and technology. Besides being the founding president of Singapore FinTech Association, he is also a Fellow of Singapore University Of Social Sciences (SUSS), advisor to Startups and mentor to student in FinTech projects.