



LSX white paper

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Abstract

Alternative finance has been enjoying growth at a breakneck speed. In five years, the industry (excluding China) provided \$50B (2016) annually compared to \$1.5B of total volume in 2011. China, with almost 4,000 operators, added another \$93B in 2016.

Today the industry is regarded not as an alternative, but as a mainstream source of finance.

The accelerated growth has caused problems. Marketplaces grew demand faster than supply. Long term, there is a shortage of available liquidity to fund new projects. There are more mouths to feed than money available.

Direct P2P, crowdfunding, and invoice financing marketplaces are each having problems with the liquidity as loan, and invoice or project (crowdfunding) cannot be sold before maturity. The problem can be likened to an investor who buys stock in a company, and after purchasing the stock, is told they have no option to sell the stock on a stock exchange. It's ludicrous.

We concur. In a forecast produced by our investment advisors, we forecast that by 2020 the LendingStar marketplace will have a liquidity problem. Even with careful planning, every customer we add in 2019 will create a supply deficit. We expect the recent spate of invoice crypto marketplaces to encounter a similar problem.

The LendingStar marketplace and third-party marketplaces share a common problem. Investors cannot sell these assets. Once bought, the asset must be held to maturity and cannot be exchanged either through the marketplace that sold them the security, or via an independent exchange. The investor is required to buy the asset and hold it until maturity.

This limits the number of investors who can participate, either because they have no risk appetite to commit more funds, or because they lack the funds to make further investments. Given a chance to sell these assets, they could perform more transactions, increasing the volume.

We have decided to solve the problem with LendingStar Exchange, or LSX. LSX is the world's first invoice exchange built on the blockchain. It is an I2I (investor-to-investor) platform where investors can trade any cryptoassets backed by invoice or other trade receivables. LSX will provide a greater number of investors and liquidity, and permit all kinds of investors to trade cryptocurrency—from day traders to institutional investors taking a longer position.

These cryptoassets recognize the underlying asset traded, and can be traded in any fiat and cryptocurrencies, not limited to bitcoins and ethers.

Introduction

The emergence of virtual currencies has been made possible by the advances in encryption and network computing which has been deemed as a primary variable responsible for the transformational changes in the global economy with regards to how goods, services or even assets are exchanged. Unlike traditional currency, the most unique aspect of the virtual currencies construct is the fact that they belong to private independent systems that facilitate peer-to-peer exchange and bypasses traditional central clearinghouses.

The concept of digital currency and correlated technologies which mainly refers to distributed ledgers based on blockchains have evolved with such rapid speed that regulators are being compelled to respond to the challenges that virtual currencies bring about which is an exceedingly complex task as regulating virtual currencies involves cutting across responsibilities of different agencies at national levels and merging policies in the international trade arena. The driving factor behind the initiative to regulate these virtual currencies by legislation is due to the rapid 'absorption' of these digital currencies by businesses across industries.

These factors became the final determinants in LendingStar's objective towards solving the capital 'glut' and liquidity issues faced by investors on invoice exchange platforms that have also been experiencing tremendous growth since their emergence in the global financial arena as a supportive dais for small business owners.

Built on blockchain, LSX uses its own token, called the LendingStar Token (LST). LSTs will be used to facilitate LSX, and confer the right to carry out operations and activities on the LSX. The number of LSTs required for each operation and activity on the LSX shall be determined by a method of computation to be determined by LSX. This method utilizes the proportion to the amount of the operation, converted to LSTs at the prevailing exchange rate between LSTs and Ether. Any given LST will be issued only once and, once used, subsequently burned.

We will introduce LST in the crowdsale. At that time, 100M LST tokens will be issued once, with up to 70% available to crowdsale contributors. More information about the LST token and its application can be found in the document below.

Purchase, ownership, receipt, or possession of an LST carries no rights, other than the right to use the LST as specified in this document. LSTs do not represent or confer any ownership right or stake, share, security, or equivalent rights, or any right to receive future revenue shares or intellectual property rights, and only carry rights relating to their use in the LSX. LSTs are not and are not intended to be a currency, security, commodity, or any kind of financial instrument.

Business concept

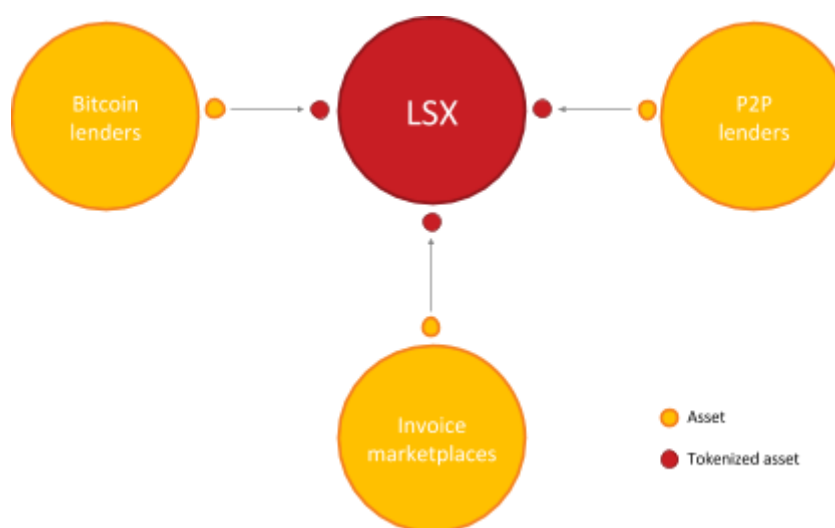
LSX is the world's first invoice exchange platform built on the blockchain. LSX is an i2i (investor-to-investor) platform where investors are given the opportunity to trade any crypto-assets that are backed by invoice or other trade receivables which will also open new pathways towards reaching 'market equilibrium,' as LSX will open the floodgates that would allow a greater number of investors to participate and increase available capital while simultaneously increasing liquidation levels.

In essence LendingStar exchange and 'crypto economy' open up a new 'habitat' for alternative financing to thrive upon by enhancing trust and raising the levels of liquidity. Currently (as of the date this paper is written) no other organisations are believed to be in existence that have provided a solution to the problem of liquidation within these 'crypto based exchanges' despite the fact that cryptocurrency and invoice trading platforms are regarded as 'exchange'.

An exchange typically refers to a marketplace where assets and financial instruments are allowed and encouraged to be bought and sold, however this mechanism does not exist for invoice exchange neither in conventional invoice trading platforms or the blockchain build. Currently, once the investor buys an invoice, the investor is bound to the invoice until maturity.

LSX redefines invoice trading as SME invoices purchased on primary platforms can be traded on LSX. Built on blockchain, LSX provides new opportunity for initial invoice or loan originators to obtain access to liquidity apart from acting as a beacon for attracting new investors. LSX employs a 'tokenization system' and only tokens that have tangible underlying assets are allowed to be placed on the LSX trade-block such as trade receivables, inventory, business loans and other tangible business assets available for trade. LSX provides new way of assets digitalization.

P2P lenders, invoice financing platforms, crowdfunding participants and recently emerging crypto funding players can all benefit from the liquidity that will be offered by LSX for invoice exchange trader. By plugging into LSX, those with higher investment capacity will be drawn towards both ROI and the liquidity offered by LSX. LSX would also appeal to Bitcoin lenders such as Bit-bond and blockchain invoice marketplaces such as Hive and Populous as these factions will be able to trade their already tokenized assets freely with millions of other investors.



LSX will move to publish an API to establish integrations with third party marketplaces in order to enhance trade volume which is among the reasons behind LendingStar's Marketplace intention to list their assets on LSX which would be a critical success factor towards accelerating the market.

LSX architecture

Assets

The ETRA (Exchange trade receivables agreement) is an agreement between the SME that issued invoices (or other trade receivables) and the investors who purchased them, and represents the ownership of the asset (invoice or other trade receivables).

ETRA represents the example of an asset that will be tokenized and circulating on LSX.

The ETRA is nominated in local currency for domestic trade and in international currency for international trade. Since it is fully backed by a confirmed obligation to pay for purchased commodities or services, it could also be a secure, very robust, and convenient mechanism for international contractual settlement purposes.

Last user

Each ETRA remains in circulation until the invoice is paid by the buyer, and as long as its various users continue to use it. The circulation (and existence) of a particular ETRA comes to an end when one entity (designated the “*last user*”) decides to cash in (redeem) part or all of its ETRA after the maturity date.

Asset types for trading at LSX:

- invoices (trade receivables)
- inventory
- purchase orders (P.O.s)
- approved accounts payable
- trade contracts
- warehouse receipts/bills of lading/bills of manufacturing
- other groups of assets that we plan for future release (shares, bonds, derivatives).

Asset origination

Crowd buying of assets at primary platforms

Invoice ownership is transferred according to the legal framework set out by True Sale. Each country has laws that dictate how True Sale works and how to accomplish the legal transfer of ownership of an invoice.

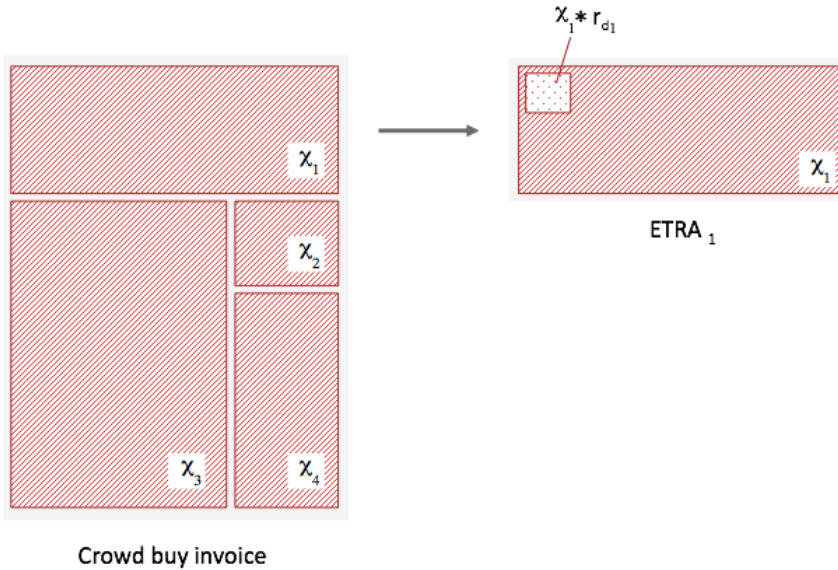
We have solved two problems.

Ownership. In the past, legal transfer of an invoice was expensive and time-consuming. ETRA simplifies the legal procedure. ETRA is documentary proof that an investor owns all or a fraction of an

invoice, and is stored on the marketplace as a PDF, automatically created and signed with an audit trail.

Crowd buying. Also referred to as “fractional buying”, crowd buying increases the chance that the investors and sellers are equally matched and more invoices will be purchased.

The fractional buy is mandated in the ETRA. ETRA recognizes both the part and the whole invoice.



$$A = x_1 + x_2 + \dots + x_m$$

where

A – Value of invoice

x_i – Amount of the part of the invoice that i -investor buys

Each Investor buys x_i amount with r_{Ai} expected annualized income rate.

Business can see this as x_i amount with r_{di} discount rate.

$$r_{di} = r_{Ai} * \frac{T}{365} \text{ where } T \text{ is term of invoice}$$

Total discount for the invoice can be calculated as

$$r_d = \frac{x_1 * r_{d1} + x_2 * r_{d2} + \dots + x_m * r_{dm}}{A}$$

The price at which the business will sell the invoice can be calculated as

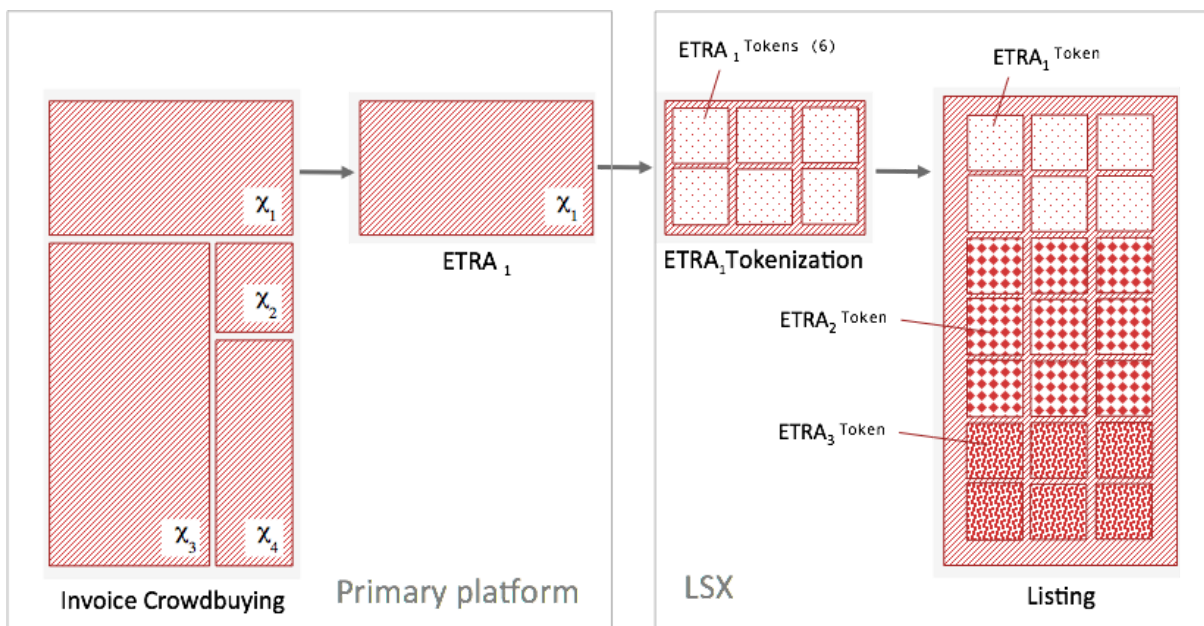
$$P = A * (1 - r_d)$$

Each Investor pays for his part of invoice price

$$P_i = x_i * (1 - r_{di})$$

Assets tokenization on LSX

After origination at primary platforms like <http://lendingstar.com>, ETRA sends to tokenization. Tokenization is the process of transformation of the asset's accounting and management infrastructure to represent each asset by a digital token (tokenization is not an assets securitization). ETRA Token (ETRA token is an example of digital asset circulating inside LSX and is not the matter of LendingStar Crowdsale campaign) is an account that contains entire or fractional balance of invoice or other asset listed in previous section. Transformation is a shift from order execution to direct asset management in account and a process of transition of depository, exchange, payment systems to the uniform decentralized infrastructure.



Assets circulation

Tokenized asset transaction on LSX

ETRA (and other tokenized assets), transacted through updates to a series of ledgers. An asset ledger enables prompt confirmation that a party owns ETRA. A cash ledger linked to digital wallets confirms that funds exist to complete an agreed exchange. Through signing individual private keys, the Delivery-Versus-Payment transaction takes place instantly, broadcast through the node network and chained to previous transactions through cryptographic hashing. All confirmation and validation is performed over the protocol, and settlement time is reduced to a near-instant.

Events and distributions. Handled through smart contracts or alternatively issued directly onto the distributed ledger as assets, with consensus provided by the peer group.

Contractual agreements. Such agreements, for example derivatives, are executed over the protocol, enabling automation as external sources are accessed and cross-referenced against clauses, and providing visibility over exposure and variable margin requirements.

Data management and insight generation. Improved, as visibility and transparency of capital flows increase, and as all transactions are executed on the ledger with full data provided.

LST tokens. LSX uses LSt tokens to fuel the operation. All chargeable transactions on LSX utilise LST token as gas.

LST token

LST tokens give the right to carry out operations on the LSX. Platform users or investors in the company can own LST by purchasing during a crowdsale campaign or on exchanges.

Each operation on LSX uses a certain number of LST tokens. The number of tokens used for each operation is determined in proportion to the amount of the operation, converted to LST tokens at the current exchange rate and type of operation (tokenization, trading).

$$Usage\ of\ LST = \frac{k_1 * Fee_1}{Price_{LST}} * S_1 + \frac{k_2 * Fee_2}{Price_{LST}} * S_2$$

where

k_1 – Coefficient of mandatory usage of LST for tokenization operations

k_2 – Coefficient of mandatory usage of LST for trading operations

Fee_1 – Fee for tokenization operations

Fee_2 – Fee for trading operations

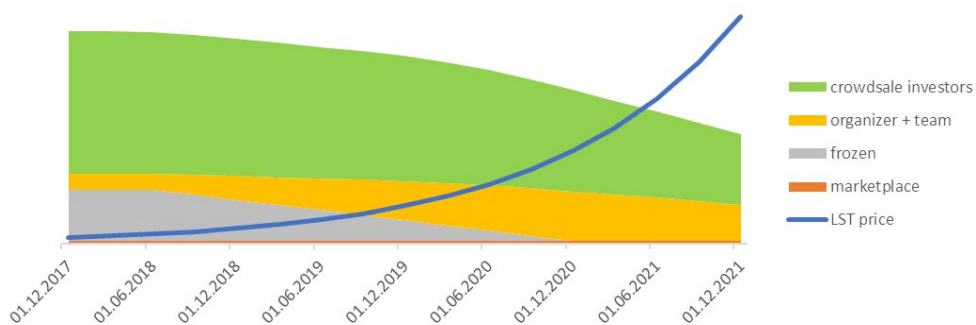
S_1 – Sum of tokenization operation

S_2 – Sum of trading operation

$Price_{LST}$ – Actual market price of LST token

The volume of operations on the platform will grow every year, increasing the demand for LST tokens from the company and platform users. Additionally, the number of tokens will be reduced due to the burning process.

LST amount and price (forecast from business plan)



Tokenization sample: Issuing LendingStar ETRA on LSX

ETRA is one of many kinds of financial assets that can be tokenized and traded as a cryptoasset on the LSX.

The asset is tokenized in a few seconds and held on the blockchain, available for trading on LSX. Instead of every account holder keeping a record of the blockchain, the records are held by a few stakeholders, who are elected by the blockchain based on the predefined algorithm.



1. ETRA can be tokenized for ETRA tokens, at an agreed rate between the marketplace and LSX.
2. The tokenized ETRA are converted to ETRA tokens, which store all the details of the ETRA, including the small business name, value of the invoice, expiry date, and name of the debtor.
3. When issuing tokens, the marketplace agrees to pay issuance fee in LST. These LST tokens are subsequently burned.
4. Issued ETRA tokens are transferred to the investor's wallet, which is held on LSX.

LST use case scenario 1

Lendingstar Marketplace issues ETRA tokens for an invoice amount of US\$10K. Let $k_1=100\%$, $Fee_1=0.2\%$, and LST price=US\$0.5.

In this case Lendingstar Marketplace should pay 40 LST to LSX; subsequently LST will burn them.

Trading sample: ETRA tokens - firsts tokens to be traded

The first tokens to be traded are ETRA tokens, derived from LendingStar marketplace. Subsequently other kinds of tokens are created from other marketplaces.

If you as holder of some tokenized assets with expiry period T decide to sell them on LSX platform to another investor after ΔT period of holding you will get profitability that will be calculated as:

$$\frac{\left(1 - \frac{T_0 - \Delta T}{365} * r_{A_1}\right) - \left(1 - \frac{T_0}{365} * r_{A_0}\right)}{\left(1 - \frac{T_0}{365} * r_{A_0}\right)}$$

or

$$\frac{T_0}{\Delta T} * (r_{A_0} - r_{A_1}) + r_{A_1}$$

where

r_{A_0} – Annualized income rate of the tokenized assets when Investor buy this asset

r_{A_1} – Annualized income rate of the tokenized assets when Investor sell this asset

LST use case scenario 2

Investor 1 bought US\$500 part of some invoice with Term 90 days and expected an annualized income rate of 8.5%. After 20 days he sold this asset to Investor 2 with an expected annualized income rate of 7%. The annualized profitability of this transaction is 10.8% after payment of the transaction fee.

Investor 1 bought the US\$500 part for US\$489.74. Let $k_1=50\%$, $Fee_1=0.15\%$, and LST price=US\$0.50.

In this case, Investor 1 should pay 0.73 LST to LSX; subsequently, LSX will burn them.

Investor 2 bought the US\$500 part for US\$493.38. Let $k_1=50\%$, $Fee_1=0.15\%$, and LST price=US\$0.55.

In this case, Investor 2 should pay 0.67 LST to LSX; subsequently, LST will burn them.

Reward and reputation sample: LST tokens will be used to pay rewards to LSX users

A lead investor is an investor who has other investor followers on the LSX who copy his or her actions on the LSX. Each investor can set up rules to trade like selected investors, following their strategies. This functionality is planned for development in 2019.

LST use case scenario 3

A reward to the lead investor can be calculated as 10%. Platform fees have been paid by followers. This reward will be paid in LST. After this, the lead investor can pay platform fees for his or her own transactions using LST and get a 50% discount. So if he or she has followers who invest five times more than he or she does, he or she will get enough rewards from the platform to cover 100% of the platform fees for his or her own transactions.

Technical architecture

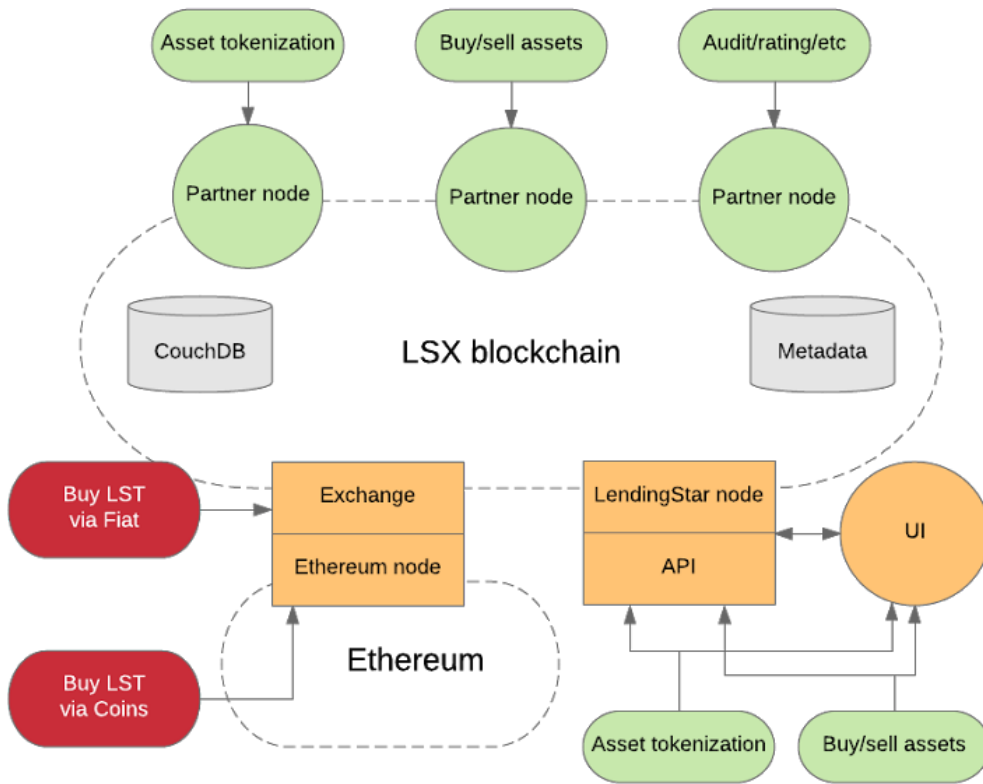
LendingStar and its partners will host the permissioned consortium blockchain nodes and provide APIs and a user interface for interacting with the DLT. There are three major components in the LSX DLT: regular peers, endorsed peers, and orderers. These components work smoothly together to ensure that the data is confidential and immutable, and to establish a basic technology-backed trust within the partner network.

A pre-approved list of nodes will be selected as endorsed peers and will reach consensus via a quorum voting mechanism. A set of channels will be utilized to ensure confidentiality and enforce the communication policy.

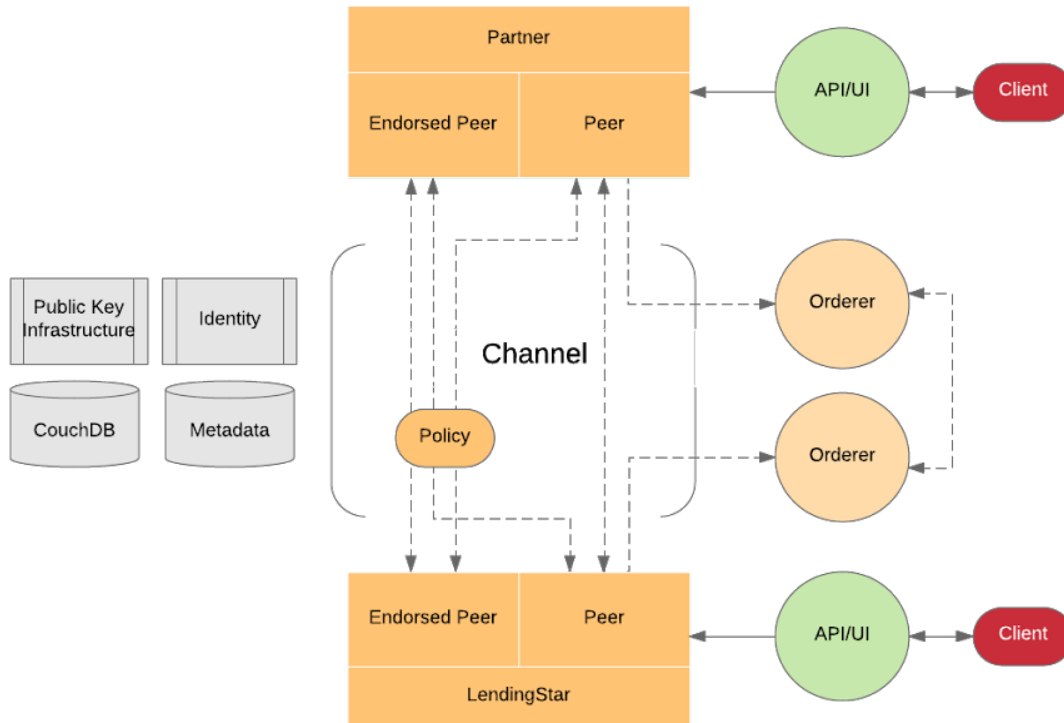
The DLT will also feature an additional partition-tolerant state datastore that supports interactive structured querying to provide quick round-trip time (RTT) for common read-only queries. The platform will utilize public key infrastructure (PKI) to distribute signing certificates and provide identity verification, working in collaboration with a custom identity provider. Due to a short transaction cycle and lack of reliance on a proof-of-work algorithm for consensus, the LSX DLT platform will be able to support hundreds of transactions per second and ensure that the transaction is either committed or rejected within 10 seconds. The platform will feature a Turing-complete VM for smart contracts that will

be used to automatically and autonomously perform cryptoasset transfers between accounts based on a set of predefined conditions.

The LSX may use different consensus systems (e.g., PoS, PoW, PBFT, Raft). We chose PoS as the basic consensus for the POC model. Using authorized peers combined with decentralization/consensus will not allow transformation of a non-permissioned blockchain into a permissioned blockchain.



The nodes' software will feature a versioned protocol that will allow nodes to be independently upgraded without service disruption.



The LST that is used to fuel platform operations will be based on the widely adopted ERC20 standard and will be issued via a smart-contract-based reserve management system on the Ethereum platform, ensuring a limited supply of tokens.

Current development

LSX is currently at prototype development stage. LendingStar in collaboration with its partners, like Deloitte, Microsoft and Ethereum Enterprise Alliance work on the project. We plan to launch prototype by the 2017 end or 2018 Q1 as a latest.

The prototype will be based on Ethereum network infrastructure.

The first productive release of LSX we are going to launch before Q4 2018.

Data protection

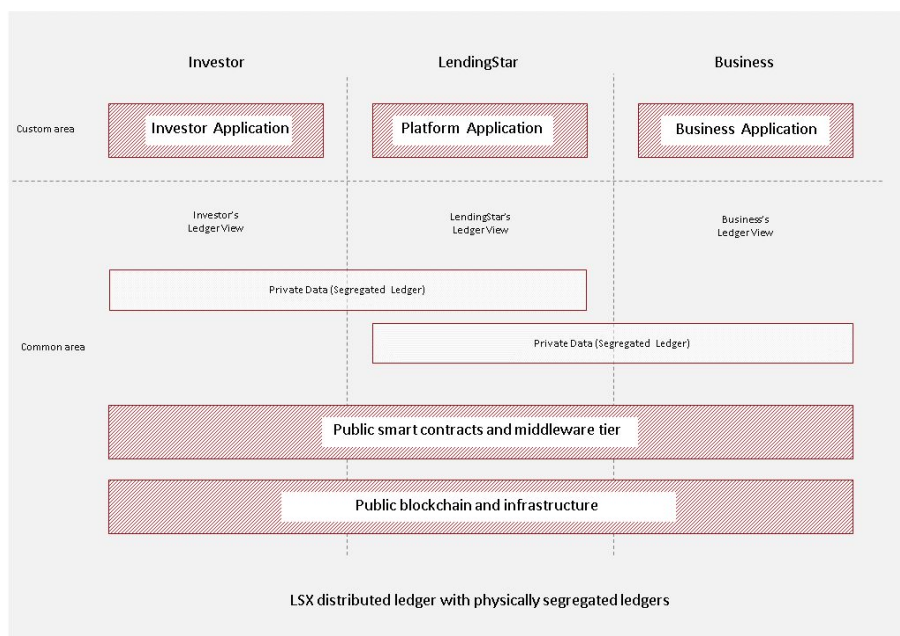
One of the critical objectives and high priorities for LSX is to provide personal data protection and security, as well as complying with the current regulatory requirements, particularly on AML/KYC procedures.

Given the nature of a public blockchain, there seems to be a risk of introducing identity information and contract conditions. LSX DLT architecture consists of the whole spectrum of components that address not only the decentralization features, but also the confidentiality and compliance requirements.

Components include blockchains, public key infrastructure and cryptographic signing, hash functions, modeling and automation of business logic, and consensus algorithms, among other features.

LSX has been designed to maintain the same confidentiality guarantee as physically segregated ledgers, while also allowing for the same data integrity assurances of typical blockchain solutions. This

is achieved because the parties involved are physically segregated and locally store confidential personal and contractual information. They only share globally replicated “marks” of the sensitive data.



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Smart Contracts

LSX's underlying architecture is based on a smart contract. This architecture yields full transparency of events along the supply chain, increased process efficiency, a reduced risk of fraud, and dramatically lower costs.

A smart contract is a process computation that is stored as a programming code on the blockchain and automatically carries out predetermined functions once a triggering event has occurred. The LSX smart contract design follows a modular contract structure, making it highly reusable and easy to upgrade.

Smart contracts ensure that the conditions agreed on between the parties are executed flawlessly. All these factors guarantee the full and irreversible traceability of the invoices submitted to the LSX (including ownership, due date, payment, and counterparty), making them tradable assets.

A smart contract can include multiple parties, such as buyers, sellers, and others. Once tokenized, it cannot be altered. For example, if a smart contract is entered into between a lender and a seller, which indicates that both parties have agreed on the borrowing conditions, the smart contract will automatically disburse a payment event that requires action to be taken by the bank. The payment is automatically remitted once confirmation has been entered into the system. With a smart contract, legal terms and conditions are embedded in the computer code, which enables the automatic execution of functions defined by the contract itself.

Smart Oracles

Smart Oracles are off-chain data sources that a smart contract uses to modify its behavior. LendingStar is going to use this concept in order to capture events around published invoices and beneficiaries. Smart Oracles contain all the information related to the invoice factoring deal, including block signature, and direct invoice smart contracts to change/update beneficiaries contact info with investor information.

Data privacy

Data privacy is ensured by utilizing tokenization as a form of cryptography, giving parties access only to the information they have been given rights to. Uniqueness inherent to blockchain technology ensures that values are transferred securely.

LSX has been designed to maintain the same confidentiality guarantee as physically segregated ledgers while also allowing for the same data integrity assurances of typical blockchain solutions. This is achieved because the parties involved are physically segregated and locally store confidential personal and contractual information. They only share globally replicated “marks” of the sensitive data.

Currently, financial market players often transact through a central, trusted party that guarantees contractual performance for each party. The LendingStar platform on DLT enables the replacement of the trusted counterparty with an incorruptible, distributed record of transactions, verified by network participants.

Legal and compliance

Our legal partner made the following statements [AAA1] [AAA2] about Crowdsale and LSX compliance and the regulatory framework. “LendingStar activities and Crowdsale are governed by and interpreted in accordance with the laws of Singapore. For the purpose of Crowdsale and as a matter of LSX transparency and openness, LendingStar intends to incorporate LendingStar Foundation (“**LSF**”) in Singapore, a not-for-profit entity wholly owned by LendingStar. LSF will issue, manage, control,

distribute, and regulate the amount of LST, which will be available for circulation in the LSX, and manage and control all proceeds from the Crowdsale.”

LST token

For reference, “securities” is defined under the the Securities and Futures Act (Cap. 289) (“SFA”) to include (amongst others) debentures, shares and units in a collective investment scheme (“CIS”). LST Tokens do not appear to be debentures, shares or units in a CIS.

LST Tokens do not appear to be a “debenture” within the meaning of the SFA. The SFA defines “debenture” to include debenture stocks, bonds, notes and any other securities of a corporation. Notwithstanding the broad definition, we note that LST Tokens do not appear to (i) represent a debt of LSF, (ii) carry an obligation, covenant, undertaking or guarantee to pay or any acknowledgement thereof, or (iii) carry an obligation for LSF (or such other person) to repurchase the LST Tokens.

Holders of LST Tokens do not possess any ownership right or stake in LendingStar or such other persons. It therefore appears that LSTs are not “shares” within the meaning of the SFA (i.e. shares in the share capital of a corporation).

LST Tokens do not fall within the definition of a “CIS”. Holder of LST Tokens would not enjoy any profits, income or other payments or returns arising from the proceeds raised during the Crowdsale.

LSX and ETRA

In the event that the ETRA (or other similar assets) is construed to be a debenture and hence falls within the definition of “securities” under the SFA, the LSX may also be regarded as dealing in securities by being the platform facilitating such trading of the ETRA, as well as other assets or tokens with underlying assets. As such, LSX may be required to obtain a CMS licence for dealing in securities with respect to the operation of the LSX or may apply to be a recognized market operator under the SFA. LendingStar closely works with the Monetary Authority of Singapore on the matter of licensing requirements. We will update you regularly about any changes.

Integrate LSX with LendingStar Marketplace

The primary interface to the LSX will be a REST API and its variations. The API will allow applications to register users, query the blockchain, and issue assets and issue transactions. Specification of the API will be finalized after POC modeling.

In 2018 we plan to implement the feature that enables external digital token issuers to issue their assets using the LSX blockchain infrastructure and trade their digital tokenized assets on LSX. The Malaysian LendingStar Marketplace will be the first platform that we will connect to LSX and tokenized ETRA assets will be the first tradable assets on LSX.

During 2018–2020 we plan to connect LendingStar Marketplaces from other countries to the LSX and will work to connect third-party platforms (invoice trading, P2P lending, and others).

Looking ahead we plan to create integration opportunities for external parties to take part in trading at LSX, for example, traders, auditors, rating agencies, business intelligence data providers (analysts), blockchain cryptofunds, underwriting organizations, and FX rates and currency exchange providers.

LendingStar primary marketplace

How it works

The process consists of a few steps: registration, invoice uploading, underwriting, funding, and (re)payment.

1. The registered business user creates a new project at <http://lendingstar.com> and uploads invoices for sale.
2. LendingStar underwrites the project and receives payer acknowledgement. During the underwriting procedure the invoice is graded and a recommended price is set. A final discount will be either fixed or based on the bidding.
3. The Exchange Trade Receivables Agreements (ETRA) are issued on the amount that is equivalent to the total invoice amount.
4. The ETAs are released when the invoice is verified. The invoice is available for purchase on the primary marketplace in local currency and can be traded on LSX with any available currency.
5. Funding is based on the crowdfunding model, splitting the invoice amount to smaller parts.
6. After successful funding, the investor signs an ETRA. Funds transfers to small and medium-sized enterprises (SMEs) and platform fees for SMEs are charged (the proposed platform fee for an SME is up to 4%).
7. When the buyer pays the invoice to the marketplace escrow account, the amount is distributed among investors and a 1% platform fee is charged to investors.

Identity and invoice verification

1. The platform verifies the user's phone number, email, passport or ID, bank account, and address. For companies, it verifies company details.
2. We periodically check all users with anti-money laundering (AML) procedures.
3. All invoices uploaded to the marketplace are checked for fraud and confirmed by the customers marked on the invoice as legitimate.

Marketplace accelerator

LendingStar plans to ensure liquidity by buying up to 30% of invoices listed by small business owners. The marketplace accelerator will stimulate trade, create interest among investors, and help get invoices fully funded.

During a single financial year, the marketplace accelerator can be reused four times. This is because the maturity of an invoice is typically 90 days, providing a 1:4 leveraged investment. The SoFi, Earnest, and Avant marketplaces also use some of their cash reserves for this purpose.

The marketplace accelerator operates on a set of rules. This is similar to UberX, which seeks to add vibrancy to the existing marketplace.

Collection and the trust account

The beneficiary bank account for each invoice that is traded on the marketplace is already transferred to the LendingStar Marketplace escrow account. The desire or potential to pay is no longer dependent on the small business owner. The customer marked on the invoice pays the amount to the escrow account at maturity. The escrow account is managed by a well-known international trust company, providing an additional guarantee to investors.

Likewise, investors cannot make bids or try to buy invoices without holding sufficient capital in the trust account. As soon as the invoice is fully funded, the funds are transferred to the small business owner immediately, as the funds are held in trust.

Documentation required

There is no real incentive for companies to reveal their live financials to the public. It is commonplace for financial reports posted by smaller companies to be outdated by over a half a year, and the reports do not really reveal enough quality data to obtain an accurate appraisal of the company's financial health.

User personas

Different personas take different roles in the LendingStar marketplace. The participants include:

- Business – small business owner who has decided to sell their invoice on a given day. The business can upload invoices and decide which invoices to sell, either at a fixed price or by inviting bids.
- Investor – makes investment decisions and sets auto-invest profiles.
- Verifier – checks for authenticity according to internal procedures (ID verification, bank account verification, first check of projects).
- Underwriter – underwrites the projects.

- Risk manager – adds new and manages existing company buyers to the platform, including their risk grades and other parameters.
- Administrator – creates, manages, and disables back end user accounts.

Credit scoring algorithm

We do not believe automated blind scoring models work. Neither we nor early stage investors in LendingStar are willing to stake our reputations on such models.

First, our business model does not require analyzing tens of thousands of small businesses for successful investment. Second, there are too many variances to create a single model.

We will deploy a credit score, assigned manually by credit risk analysts in each country.

Discounting

Discount rate vs annual rate

Investors will work with short-term instruments with high profitability.

For example, an invoice from an A grade buyer with a 60-day term that the investor can buy with just a 1% discount will yield a 6% annual return.

How it works:

$$r_A = r_d * \frac{365}{T}$$

where

r_A – Annualized income rate

r_d – Discount rate for invoice

T – Term of invoice

If the investor buys a short-term invoice with a discount of 3%, that can also be acceptable for the business, and he will earn an 18% annual return.

Effective rate

We will show investors the real effective income. To calculate the effective rate, we solve the following equation for each investment:

$$0 = \sum_{i=1}^N \frac{PA_i}{(1+r_{ef})^{\frac{D_i-D_0}{365}}}$$

where

PA_i – Payments ($i \in \{1, \dots, N\}$)

PA_0 – Initial amount of the buying invoice

D_0 – Bidding date

D_i – Dates of payments

r_{ef} – Effective annualized rate

N – Number of different payment related to the current invoice and investor's bid

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