



300cubits

Whitepaper

TEU Token Sale.

Email info@300cubits.tech
Website <https://300cubits.tech>



Contents

1.	Executive Summary	3
2.	Industry Pain Points	4
3.	300cubits' Answer	6
4.	Token Mechanism	10
4.1.	Distribution	10
4.2.	TEU Token Price Discovery & Supply	11
4.3.	Operating Costs of TEU Tokens	11
4.4.	Usage of the TEU Tokens	12
5.	TEU Ecosystem	14
5.1.	Foundation Layer: Ethereum	15
5.2.	Intermediate Layer	15
5.3.	Application Layer	15
5.3.1.	Smart Contract Builder Module:	15
5.3.2.	Booking Module:	16
5.3.3.	Market Place Module:	16
5.3.4.	Positive Credit Agency Module:	17
6.	Roadmap	17
6.1.	Current State	17
6.2.	Token Sale	18
6.3.	Token Promotion and Early Adoption	18
6.4.	Product Development	19
7.	Use of Token Sale Proceeds	20
8.	Token Sale	20
9.	Leadership	21
9.1.	Executive Team	21
9.2.	Advisory Board	22
10.	Legal Considerations	23
10.1.	Landscape for Cryptocurrencies	23
10.2.	Other Issues	23
	Appendix I: Container Shipping Market	25
	Appendix II: Shipment Booking Process	27

Please read this document together with Terms and Conditions regarding TEU and this Token Sale.



1. Executive Summary

[300cubits¹](#) is a blockchain initiative, looking to fundamentally change the container shipping industry through the creation of a de facto industry-focused cryptocurrency called **TEU tokens** supported by a TEU Ecosystem.

TEU is an industry acronym for Twenty-foot Equivalent Unit, a standard unit for containers. A TEU token is an ERC20 compliant digital token distributed on the Ethereum network and will be tradable on various cryptocurrency exchanges globally.

Near-term, both container liners and their customers can use TEU tokens to reduce counterparty risk of default of a cargo shipping agreement, i.e. booking. Default occurs when the customer does not turn up with the cargo according to the confirmed booking, or the container liner does not load the cargo delivered by the customer to the loading port. The TEU tokens will be provided by both counterparties during shipment booking process. Hence, the TEU token acts as a form of digital collateral, or booking deposit, payable per agreed terms by the defaulting party. Note that the proposed solution does not require the exchange or safe-keeping of cash. We believe a booking deposit in the form of cryptocurrency is the solution to one of the biggest pain points in the container shipping industry – trust, or its lack thereof

As booking deposits, the TEU tokens' value will naturally be linked to the value of actual freight rates. Hence, the trading of the TEU tokens will become a leading indicator for freight rates, serving much like a peer-to-peer crowd prediction platform for the container shipping industry.

Longer-term, we see the TEU tokens being adopted as a settlement currency for the container shipping industry, which could move the whole industry's transactions, including the entire logistics industry's transactions, onto the blockchain. What does it mean in numbers? Container liners alone generate about \$150bn revenue a year.

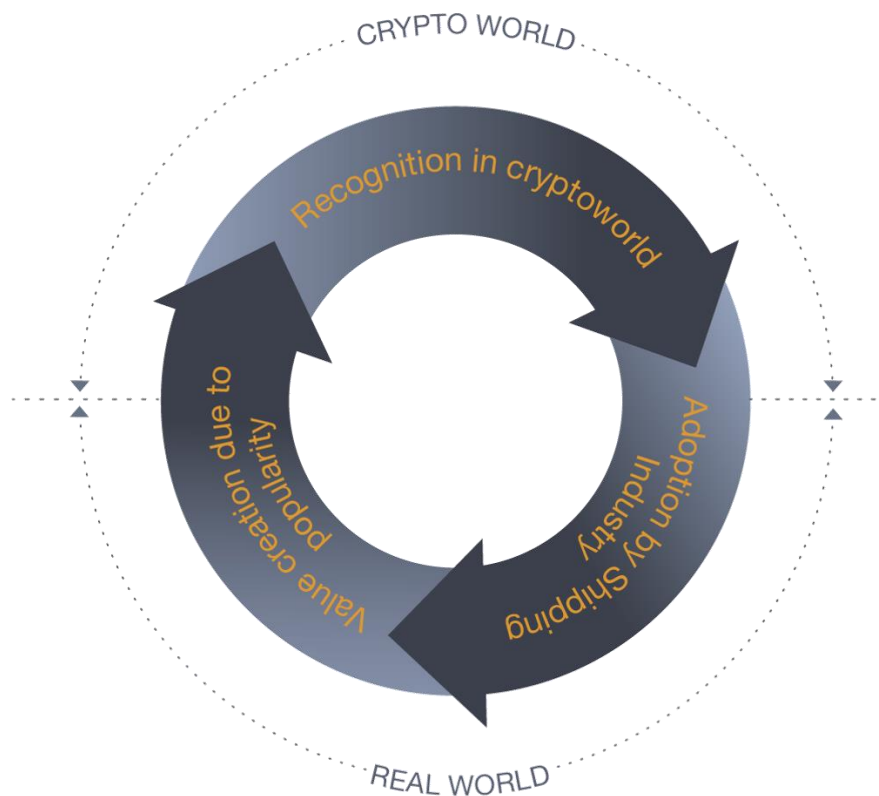
The introduction of the TEU tokens could be a paradigm shift for the container shipping industry. Unlike other solutions that may improve an isolated area of container shipping transactions or operations, the TEU tokens could eventually change how all transactions are conducted.

¹ "And God said to Noah: "I have determined to make an end of all flesh; for the earth is filled with violence through them; behold, I will destroy them with the earth. Make yourself an ark of gopher wood; make rooms in the ark, and cover it inside and out with pitch. This is how you are to make it: the length of the ark **three hundred cubits**..." (source: Genesis 6:13-15)



We believe the TEU tokens will instantly add monetary value to the industry, much like a capital injection. How? A certain percentage of our tokens will be given out for free to the container liners, their customers² and those who actively promote the tokens for early adoption. A successful Initial Token Sale (ITS) will automatically monetize the TEU tokens. Use of the TEU tokens by industry players will validate and enhance the value of the TEU tokens. The adoption of the TEU tokens in the container shipping industry, in return, will influence its trading activities at cryptocurrency exchanges.

Figure 1. TEU Tokens' Value Creation: The crypto world will first create value while use of the tokens in the industry will feedback to the crypto world, like a cycle of value creation.



Source: 300cubits

2. Industry Pain Points

In recent years, container liners have been incurring chronic losses. This led to some of the largest bankruptcies the industry has ever seen. Many of the container liners

² The customers of container liners are usually called shippers, consignees or, in the Trans-Pacific trades, BCO's, the beneficial cargo owners.



suffered losses in 7 out of the last 10 years. Radical re-structuring shook up the industry in 2016 - most could see that the industry was suffering chronic overcapacity.

However, the root of the problems, in our view and admitted by many industry executives, is that the industry is unable to (1) execute agreements in its daily operations; and (2) forecast for future business cycles or hedge the cyclical nature of the industry.

The trust issue

We know from first-hand experience that shipment agreements in container shipping are often not honored. Service contracts get re-opened when the market going freight rates deviate significantly from the contracted freight rates. And it has happened so often in recent years that freight rates could swing 50-100% within a year or even within a month.

Such loose attitudes toward fulfilling agreements has produced a common pain point for the industry - the “no-show” problem. This is a situation where a customer books³ a shipping slot for container space but does not show up with the cargo. Shipping capacity is like a perishable good, in the sense that a shipping slot not used today is a revenue opportunity lost. In order to avoid such revenue short falls, container liners often overbook container space on their own ships (not unlike the airline industry). So during busy seasons, customers with a confirmed booking could be crowded out and may not get their cargoes on board. Therefore, customers often suffer from “cargo rolling”⁴ while container liners suffer from “booking short-fall”⁵. Subsequently, a vicious cycle is created with both customers and container liners overbooking.

In a presentation given by Professor Michael Erlich from New Jersey Institute of Technology early this year, he stated that the impact of “booking short-falls” is quantified as 5mn TEUs a year, which costs the entire industry \$23bn, including the freight revenue losses for the container liners, additional inventory cost for the customers, etc. [See video here](#).

Can't make forecasts and can't hedge against the cyclicity

The overcapacity problem in the industry could have been avoided or mitigated if container liners had a better handle of their forecasts in a couple of critical junctures

³ Please read Appendix II for detailed container shipment booking process

⁴ Rolling is an industry term where a customer's shipment could not get on the sailing as per booking.

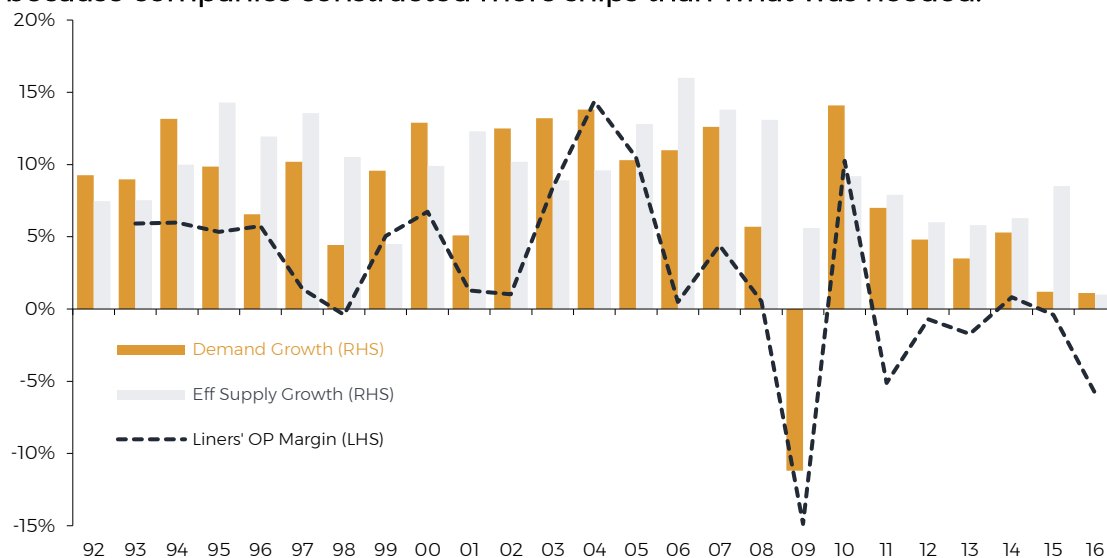
⁵ Booking short fall is another industry term that refer to a situation that liners missed a booked revenue opportunity.



during the past 10 years. The first juncture came during 2007 when container liners bid up shipbuilding prices on the assumption that shipment growth would stay at 10% CAGR, as it was at the time. However, growth in the 10 previous was only about 3% per year on average. The second and third junctures came in 2011 and the period between 2013 and 2015 when container liners rushed to the shipyards under the mis-conception that large container ships were the ticket to survive in the long term. Once delivered, those large ships created a capacity glut that led to massive exits and bankruptcies among the container liners starting in 2016.

Other industries that are cyclical and capital intensive, e.g. infrastructure and utilities, would resort to securing long term cash inflow as a hedge. In fact, many shipping segments often use long term service contracts to hedge. While ships depreciate over 25 to 30 years, container liner's service contracts are mostly less than a year. The mismatch in time horizon between fixed costs and secured income is a structural headache for the container liner industry. Expenses associated with ship investment, e.g. depreciation and interest payments, are sunk costs. When competition intensifies, the container liners struggles to recover those sunk costs.

Figure 2. Container Shipping Cycle: Capacity chronically outstripped demand because companies constructed more ships than what was needed.



Source: 300cubits estimates

3. 300cubits' Answer

“Ethereum is a decentralized platform that runs smart contracts – applications that run exactly as programmed without any possibility of downtime, censorship, fraud or third party interference. These apps run on a custom built Blockchain, an enormously powerful shared global infrastructure that can move value around and represents the ownership of property. This enables developers to create



markets, store registries of debts or promises, move funds in accordance with instructions given long in the past (like a will or a future contract) and many other things that have not been invented yet, all without a middle man or counterparty risk". (Source: www.ethereum.org).

We will issue ERC20 compliant TEU tokens in the Ethereum network and promote them as the de facto cryptocurrency for the container shipping industry. We believe the TEU tokens are what the industry needs to ensure shipment agreements get honored, use crowd wisdom for more accurate forecasts and potentially hedge against the industry's cyclical nature.

Use the TEU tokens as booking deposits

Unlike the existing service contracts in the container shipping industry, the smart contracts governing the transactions of the TEU tokens are coded with a set of immutable conditions. Once committed, neither party can alter what has been agreed. Both the container liners and their customers will be given valuable TEU tokens that will be held as deposits with conditions, and paid out later upon the execution of the shipment booking. The container liners will be compensated with the TEU tokens if the customers do not turn up with cargoes. Likewise, the customers will be compensated with the TEU tokens if their cargoes are rolled. The smart contracts that govern the payout of TEU tokens simply execute according to the coded conditions based on the actual outcome, i.e. whether a shipment booking is fulfilled or not. So regardless of whether there is trust or not, the contract mechanism of the token will incentivize counterparties to honor their commitments.

A host of applications to make the usage of TEU tokens seamless

To promote the usage of TEU tokens, we will foster development of an industry community with an IT infrastructure, which we call the TEU Ecosystem. This community will be composed of interested industry participants, application developers etc., to establish the TEU tokens as the de facto cryptocurrency for the container shipping industry. The TEU Ecosystem will include Smart Contract Builder Module, Booking Module, Market Place Module and Positive Credit Agency Module.

- The **Smart Contract Builder Module** is a web-based Dapp (decentralized application) that allows corporations or persons without any prior blockchain or smart contract coding knowledge to tailor a smart contract using the TEU tokens according to the commercial terms of each shipment booking.
- The **Booking Module** is a web and mobile based Dapp platform, much like the existing on-line services of the container liners but will be an aggregator website that collects all schedules, quotations and shipment status from the container liners who use the TEU tokens. The module will become an industry



booking aggregator, much like Booking.com for vacation travellers, for container shipping. Customers can look up schedules and quotations, either based on existing agreements or walk-in requests, choose and book the best quoted routes.

Counterparties will use TEU tokens in this module. Smart contracts governing the token transactions will be based on the actual outcome, such as booking confirmation, cargo receipt and cargo loading, to decide whether a shipment booking has failed or not.

Following is an example of how the smart contract may decide whether a shipment booking failed, due to either “booking short-fall” or “cargo rolling”. In the example, both the shipper and the container liner have each provided 5 TEU tokens as their respective booking deposits.

Table 1. Shipment booking’s TEU token reward scenarios

	Scenario A: Booking Short-Fall	Scenario B: Cargo Rolling	Scenario C: Booking fulfilled
Process check points:			
Booking confirmed: booking number given	Yes	Yes	Yes
Cargo received: cargo receipt number given	No	Yes	Yes
Cargo loaded onboard: loading confirmation	N/A	No	Yes
Outcome (# of TEU tokens received)			
Shipper	0	10	5
Container Liner	10	0	5

Note: The remarks Yes, No and N/A refer to the process check points

- The **Market Place Module** is a web and mobile based Dapp platform that provides a market place for the users to trade the TEU tokens against Ether (ETH) as well as their confirmed bookings using TEU tokens. Unexpected incidents may still happen even with the booking deposits. Ships could miss a port call while factory could miss its production schedule due to unforeseeable events. The Market Place Module would allow users to recover their potentially lost tokens once a confirmed shipment booking is traded with other users. This facility will be a true peer-to-peer and trust-proof trading environment where smart contracts provide a far surer way of settlement than clearing houses in the conventional markets.
- The **Positive Credit Agency Module** will be a web-based research database Dapp, containing all the past transaction records stored in the smart contracts



which are publicly auditable. This searchable history is a feature of the blockchain. The module will automatically distinguish the more credit worthy customers from the lesser ones. Moreover, the customers embracing the TEU tokens as booking deposits will most likely honor a booking – a signaling effect, similar to the fact that more credit worthy companies are usually more willing to invite credit agencies to issue a publicly available credit assessment.

More details of our TEU Ecosystem will be set out in the TEU Ecosystem section.

Open-sourced consulting services for users who wish to remain independent

Container liners and their customers could also use our TEU tokens in their existing IT infrastructure, i.e. independent of 300cubits' TEU Ecosystem. We will make our source code, blueprint etc., available to the container liners who intend to develop their own blockchain based systems to use the TEU tokens. When needed, we could provide programming and consulting services to help develop these liners' proprietary systems so that these systems could be linked with Ethereum to monetize the TEU tokens.

TEU token trading may provide more reliable foresight

Once the TEU tokens are adopted as booking deposits, they will become the freight rates proxy because they are taken as compensation for potential freight payment lost. The value of the TEU tokens will rise and fall with freight rates. Furthermore, traders can transact these TEU tokens in the same way as they trade container freight rates. We expect a great majority of the token trading to be done by financial players initially, which, as proved in the capital markets, often has better views about the future than many experts. Moreover, when industry players such as container liners, freight forwarders and their customers also trade their TEU tokens on various cryptocurrency exchanges, the additional liquidity will pool together a large and global community that is interested in the development of freight rates. This could help form a crowd prediction platform for the global container shipping cycle.

There have been plenty of anecdotes that suggest many are smarter than few and even smarter than the experts. Elections in democracies and the market efficiency hypothesis in the capital market are both based on the belief in the power of crowds to predict correctly. Crowd wisdom is at its best when it is diverse, independent, decentralized and aggregate as per James Surowiecki's seminal book [The Wisdom of Crowds](#). TEU tokens will be traded not only by industry players using TEU tokens in their daily operations but also by a large number of pure traders or financial investors, who are diverse, independent, and decentralized.

TEU tokens as long-term pledge for new ship investment

Forecasts aside, container liners could seek long term commitments in the form of



TEU tokens from customers for their investment in new vessels. A container liner could make an agreement off-chain with a customer on the incremental volume and continuing volume to which the customer could commit with varying levels of confidence. The aggregated gradient of these commitments could provide a basis for capital allocation decisions with respect to additional capacity and renewal capacity. Those terms could be written into a smart contract, which would then be actualized through TEU tokens agreed with the customers. Over time, the pledge tokens would gradually return to customers much like an amortization schedule. If a customer provides sufficient bookings as per the agreement over the lifespan of a ship, all pledge tokens would be returned to the customer.

4. Token Mechanism

4.1. Distribution

The tokens sold during the Token Sale are known as TEU (twenty-foot equivalent unit) tokens. A TEU is a standard unit of a shipping container.

The TEU token is ERC20 compliant. The TEU token Total Supply is limited and fixed at 100,000,000, which ensures the long-term value of the tokens. These tokens are created during execution of a TEU smart contract, are transferrable, cannot be minted again but can be burned when 300cubits deems necessary.

Forty percent (40%) of the TEU tokens will be sold to the public during different Tranches of Token Sale. The proceeds from Token Sale will be used primarily to develop the TEU Ecosystem and to make the TEU tokens marketable in the container shipping industry.

A percentage of the TEU tokens will be given out for free to a selected group of container liners and their customers, or employees of the shipping industry to promote the use of TEU tokens as shipment booking deposits, and for generic use as the de facto industry cryptocurrency. Six percent (6%) of the tokens will be reserved for the founding team with a disposal restriction (“lock-up”) for 2 years starting on 16 August 2017.

Table 2. Token Distribution

Pre Initial Token Sale (“Pre-ITS”)	2,000,000 TEU	2.00%
Initial Token Sale (“ITS”)	18,000,000 TEU	18.00%
Second Token Sale	20,000,000 TEU	20.00%
Marketing & Development	54,000,000 TEU	54.00%
Founding Team	6,000,000 TEU	6.00%



4.2. TEU Token Price Discovery & Supply

The number of TEU tokens to be given out to the industry users will be based on the market value of the tokens discovered after the Token Sale is complete, as well as their trading activities on cryptocurrency exchanges. In our view, the market value of the TEU tokens shall reflect a value in its fiat currency equivalent. According to our estimates, the global container freight rate is about \$750 – 800 per TEU on a blended average basis⁶. But ultimately, the crypto world will likely have the first say of the value of TEU token. Based on the value reflected in TEU token trading, industry users shall determine how many TEU tokens to be used for each shipment booking in order to provide an adequate but not excessive economic incentive to both parties to honor the shipment booking.

We will also take into consideration global container shipping capacity when deciding how many TEU tokens should be live in the market. Today globally, total container shipping capacity is about 20mn TEUs on 5,129 container ships. Annual container shipment volume amounts to about 190mn TEUs (*source: Clarksons*). In other words, every container shipping slot turns over about 10 times per year. Forty percent (40%) issuance during the public sales amounts to 40mn TEU tokens. We estimate that the market may need TEU tokens to cover about 12mn TEUs or 3 weeks equivalent of shipment volume, if TEU tokens are used for every single shipment booking.

4.3. Operating Costs of TEU Tokens

The TEU token is by design like money that performs as a store of value, medium of exchange and, when established as the de facto cryptocurrency for container shipping industry, unit of account. Like the use of money, the use of TEU tokens is nearly free except for the gas payment in ETH for miners⁷ in the network who ensure the integrity of the public ledger.

300cubits will operate on fees generated from the use of TEU Ecosystem, namely the Smart Contract Builder Module, Booking Module, Market Place Module and Positive Credit Agency Module. Except for the Positive Credit Agency Module, all modules must be deployed to execute smart contracts at different stages of the booking cycle, during which some TEU tokens will automatically be exchanged into ETH to cover the gas fees.

⁶ Based on all container liners' revenue divided by the global container shipment volume at 190mn TEU per year.

⁷ Gas is price of running a transaction in Ethereum. Miners are parties validating and adding transaction records to the blockchain.



4.4. Usage of the TEU Tokens

In general, like ETH, the TEU tokens are freely transferable on Ethereum or any other user interface, from one user's wallet to another's based on the smart contracts governing the transactions.

The TEU tokens will also be listed on all the cryptocurrency exchanges. So users could buy or sell the TEU tokens pseudonymously around the world through these exchanges.

The detailed mechanism for use of the TEU tokens as a long-term pledge for new ship investment is still to be formulated. The usage of TEU tokens as booking deposit are set out in the following section.

The shipment booking process with TEU tokens

When using TEU tokens as deposits for shipment booking, shippers and container liners will have to agree, in their service contracts, on how many TEU tokens will be needed as booking deposits in addition to the other commercial terms, such as origin/destination ports, period, freight rates, volume etc. Service contracts usually only specify a period when the cargoes will be shipped without identifying the specific ship name and sailing, which are provided later at the actual booking stage.

When a shipper (i.e. customer) enters a shipment booking request either through a container liner's proprietary booking website or our Booking Module, he/she will have to input all the agreed commercial terms, including the TEU tokens to be pledged, into a specific smart contract that governs the service contract. The agreed number of TEU tokens serves as a kind of digital escrow account.

Upon receiving the booking request, the liner would cross-match with their service contact database to identify the agreed commercial terms as well as the TEU tokens being pledged. Once matching is established, the container liner would confirm the booking by way of providing a booking number and TEU tokens in the same quantity as the customer as a guarantee for the shipping slot. If the container liner cannot confirm the booking, the smart contract would allow the shipper to take back the deposit TEU tokens provided by the shipper himself.

Once the cargo has been sent into the loading port or any container liner's cargo receiving facilities, i.e. under the custody of the container liner, the shipper will be allowed to take back the TEU tokens provided by itself. If the cargo does not arrive ahead of the cut-off time for the sailing booked, the container liner will take the TEU tokens provided by the shipper, which have been held by the smart contract.

If the container liner fails to load the cargo on the ship booked, the shipper will



receive the deposit TEU tokens provided by the liner. Once the cargo is loaded onboard, the container liner would have fulfilled its obligation and hence will be allowed to take back the TEU tokens provided by the liner.

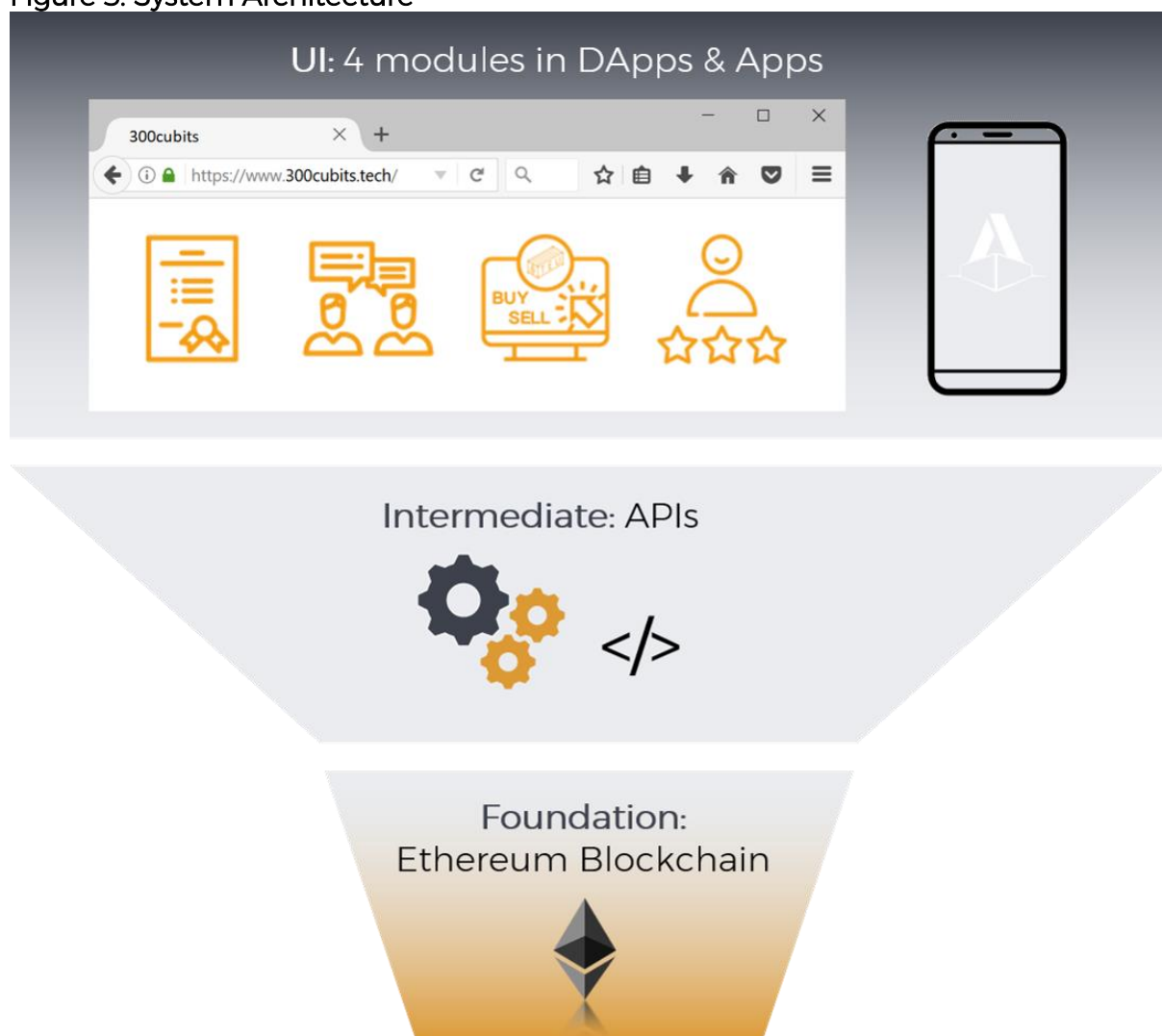


5. TEU Ecosystem

300cubits intends to cultivate a community of both token users and the TEU Ecosystem itself for the TEU tokens to thrive.

The TEU Ecosystem will be composed of three primary layers namely Application Layer that hosts the applications, an Intermediate Layer that performs the translation function and Ethereum as the Foundation Layer that executes the smart contracts. Outside of the TEU Ecosystem, we will also provide support for container liners that wish to apply TEU tokens on their proprietary platforms, i.e. outside of the 300cubits system.

Figure 3. System Architecture



Source: 300cubits



5.1. Foundation Layer: Ethereum

Ethereum is an open-source, public, blockchain-based distributed computing platform featuring smart contracts developed either by us to facilitate TEU token usage or by other independent developers. Ethereum is and always will be free and open for all to use, and has proven to be robust and secure. TEU token transactions could be done on or near zero marginal cost i.e., except for the gas payment in ETH to the miners. All shipment bookings are deployed through smart contracts in the Ethereum network. Smart contracts enforce the terms and conditions of shipment bookings and each smart contract is secured, publicly examinable and auditable. The underlying smart contracts also function as escrow digital wallets that hold the deposit TEU tokens. These TEU tokens will be released to either the container liner or the shipper according to the outcome of a shipment booking, e.g. cargo received and loaded, as defined in the smart contract and deployed in the Ethereum Virtual Machine (EVM).

5.2. Intermediate Layer

Smart contracts are based on a programming language called Solidity developed by the Ethereum network under open source license. Application modules in the Application Layer use a different language other than Solidity. The purpose of the Intermediate Layer is to transform the real-world business logic captured in the Application Layer into smart contracts with proper coding under Solidity and to deploy the smart contracts into the Ethereum network. This layer should be organized in the form of modular Web3 JavaScript Application Programming Interface (API) in communication between the Foundation Layer and User Application Layer. We will develop the API in the form of open source license available in GitHub.

5.3. Application Layer

The Application Layer essentially provides the TEU Ecosystem to enable TEU tokens to become the de facto cryptocurrency for the container shipping industry. This layer provides user-friendly front-end interfaces to shipping industry participants. There is no difference in user experience when using other shipping applications most users are familiar with and the deployment of blockchain technology is transparent to them. The Roadmap section will outline the development plan of each module. At this stage, we envision four main modules that could form the core foundation of the TEU Ecosystem for TEU tokens.

5.3.1. Smart Contract Builder Module:

This Module will be delivered in the form of a web-based Dapp.



This module allows corporations and persons without any prior blockchain and smart contract coding knowledge to tailor smart contracts according to the commercial terms of a shipment booking request. The users can specify, add or remove fields and enter parameters to ensure all the conditions of a booking are fully reflected. For example, users can specify under what conditions the TEU tokens held by the smart contract may be released. Those tailored conditions could be in addition to the common conditions, such as the cargo being delivered to the loading port or the cargo getting onboard.

5.3.2. Booking Module:

This Module will be delivered in the form of a web and mobile based Dapp.

This module contains the common functionalities of shipping service websites, such as booking, schedule searching/selection, quotation and shipment status tracking. This interface would allow users to send the TEU tokens to Ethereum, take back the TEU tokens once a user's obligation has been performed, or receive TEU tokens as compensation when a booking agreement is breached. Adding TEU tokens in the booking process is an extra step compared to the current industry process but the application shall populate default token values in the system based on historical entries, which would save one step for the user when submitting a similar booking request next time. Otherwise, the user experience on our Booking Module should be similar to the experience on most liners' proprietary booking websites except that the users would get an additional pledge of booking fulfilment based on the TEU tokens. The process is simply a click on "booked by TEU token" at the bottom of the screen before final confirmation of the booking.

5.3.3. Market Place Module:

This Module will be delivered in the form of a web and mobile based Dapp.

First, this module would allow users holding a confirmed but un-used shipment booking to trade in a marketplace for TEU tokens. For example, if a shipper knows the factory will miss the booked sailing, the shipper may risk losing its TEU tokens in deposit to the liner. The shipper could sell this booking in the Market Place Module for TEU tokens in order to cover the token loss. Since the booking will be traded on TEU tokens governed by the smart contract in the Ethereum network, the transaction will be an immutable peer-to-peer process that does not have any counterparty risk or require a clearing house to ensure the completion of the transaction.

Second, users could trade TEU tokens in the Market Place Module. The transaction



would come with functionality and user experience similar to any other cryptocurrency exchange.

5.3.4. Positive Credit Agency Module:

This Module will be delivered in the form of a web-based Dapp.

All the smart contracts for shipment bookings are immutable, publicly examinable, and auditable, due to the attributes of blockchain technology. We aim to develop a user-friendly and intuitive credit record database; and a credit rating system based on past performance. For example, the scoring system could use grades A to F where grade A would constitute best credit risk, suggesting that the percentage of honored contracts exceeds 95% or, based on statistical modelling, scores in the 95% percentile.

Over time, we would have collected a set of performance records for each Ethereum wallet address in our system. We can construct the database with the wallet address' frequency of performing or defaulting on the bookings. Due to the pseudonymous attributes of the blockchain, we would only see a user's address but not their actual identity. But the liners dealing with such user would know the actual user's identity based on the address. This module therefore can rank or give scores on the creditworthiness of a counterparty, which would help the container liners to deal with those counterparties.

While a customer with a great credit record naturally would not change its Ethereum address, one with a poor credit record could potentially change its Ethereum address to disguise its identity. Because of that, this Module is primarily good at identifying those with positive credit records and rewarding trust-worthy shippers and liners.

6. Roadmap

6.1. Current State

The concept of 300cubits has been under development since December 2016 when the founders teamed up to seek technological solutions for pain points experienced in their respective careers. Extensive research has been done on various technological solutions available for shipping, artificial intelligence and blockchain technologies in general over the past 6 months. Our evaluation concludes that distributed ledger technology ("DLT") or blockchain technology, and specifically the Ethereum network, provides the best solution to deal with some commonly known pain points in the container shipping industry. The founders believe the project has reached the implementation stage that requires funding to move ahead.



Steps accomplished so far include:

- Selected Ethereum network as the Foundation Layer of the solution
- Completed coding of a set of core smart contracts using Solidity, including the ITS, ERC20 compliant TEU tokens and various shipping prototype smart contracts, etc.
- Started to test the smart contracts in a testnet environment and live chain of the Ethereum.
- Formulated the IT infrastructure, which is called TEU Ecosystem, for TEU tokens.
- Completed concept development of various application modules.

6.2. Token Sale

Aug 2017: Token Sale begins

We intend to start issuing our TEU tokens on 16 August 2017. The pre-Initial Token Sale (pre-ITS) will be held over a period starting on 16 August 2017 and closing on 20 September 2017.

Our Initial Token Sale and Second Token Sale will be held tentatively in mid-November 2017 and early 2018 respectively. More details of the issuance terms are set out in the following Token Sale section.

Interested parties could subscribe to TEU tokens through our website:
www.300cubits.tech.

6.3. Token Promotion and Early Adoption

Aug 2017: Marketing campaign initiates once whitepaper is published

Target: non-industry users

Promotion of Token Sale will be conducted through typical cryptocurrency websites, social media, etc.

Target: industry users

Once the whitepaper is published, we will reach out to the entire shipping community to promote the TEU tokens. We aim to complete all our one-on-one marketing campaigns targeting the largest container liners, freight forwarders and beneficiary cargo owners before our TEU Ecosystem launch in the beginning of 2018. However, the marketing campaign targeting the industry users will be an on-going process that goes beyond our TEU Ecosystem launch.

One of the founders, Johnson Leung, has extensive experience with the container



shipping industry. Through him, we will be able to make direct contact with senior executives inside the container shipping industry. The TEU token will be a novel idea but likely very well received since it requires minimal process change and application of the TEU tokens will generate value for the industry users. How? A percentage of TEU tokens will be given for free to the industry users. Once these tokens are received, the industry users will be incentivized to use these tokens because their usage will enhance their value. In other words, we are effectively injecting capital into an industry in distress. Johnson will be charged to lead the implementation of the TEU tokens as the de facto cryptocurrency for the container shipping industry.

6.4. Product Development

Aug 2017: Recruitment of programmers, marketing executives and engagement of additional third-party solution providers.

Jan 2018: Booking/Smart Contract Builder Module Alpha launch

Mar 2018: Booking/Smart Contract Builder Module Beta launch

Apr 2018: Booking/Smart Contract Builder Module live launch

Jun 2018: Market Place Module Alpha launch

Sep 2018: Market Place Module Beta launch

Oct 2018: Market Place Module live launch

Jan 2019: Positive Credit Agency Module Alpha launch

Mar 2019: Positive Credit Agency Module Beta launch

Apr 2019: Positive Credit Agency Module live launch

Jonathan Lee will lead and oversee the product development of 300cubits. His proven track record in starting the Treasury functions of a bank in Hong Kong, and another bank across Hong Kong and Singapore, which involved extensive IT infrastructure set-up and digital solutions development and implementation, will be instrumental to our success. His treasury expertise in fiat currency will also help facilitate bridging cryptocurrencies into the financial world. Jonathan Lee is proficient in various programming languages like Solidity, Visual Basic, SQL and python.

Our product development involves separate plans progressing in parallel. The development of our four application modules together with the website and mobile APP will be done at the same time as we program the general infrastructure such as the Foundation and Intermediate Layers. We will also fine tune and complete various smart contract programming to ensure seamless transactions of the TEU tokens.

We will recruit programmers to develop the TEU Ecosystem and container shipping industry executives to provide business logic as well as to lead and promote our TEU



tokens.

7. Use of Token Sale Proceeds

Likely over half of our proceeds will be spent on product development such as programming, which includes all the technological and programming outsourced work, computer systems, hardware procurements, etc. A significant portion of our proceeds will be used in marketing to the key industry players through company visits, industry conferences, and various social media tools. Operating expenses will be another area to deploy our ITS proceeds. Our TEU Ecosystem will launch in the beginning of 2018. It will take time for the usage of our application modules and fees to build up as we encourage users to switch from using our TEU tokens on their proprietary channels to our application modules. We will need capital to maintain offices, payrolls, travel and utilities etc., for the first two years of our operation during the build-up phase.

8. Token Sale

The Token Sale is based on a free market valuation methodology which is equitable, transparent and low impact to the Ethereum network. **Please read Terms and Conditions together Term Sheet for detail of each Token Sale Tranche.**



9. Leadership

The leadership of 300cubits is composed of an executive team and an advisory board.

9.1. Executive Team

The two main founders of 300cubits are Johnson Leung and Jonathan Lee. The two come with a combined 50 years' experience in the shipping and banking industries. Johnson has extensive experience in the container shipping industry, including Maersk's eCommerce project. Having been a regional treasurer within the banking industry, Jonathan will leverage his 20-plus years' experiences in dealing with fiat currency and banking settlement to make TEU tokens the de facto cryptocurrency in the container shipping industry.

Both Johnson and Jonathan have substantial experience in starting up new businesses. Jonathan started the treasury and dealing front-office operations for two major banks, namely Shanghai Pudong Development Bank, entering into the Hong Kong market, and UBP into the Hong Kong and Singapore markets. Johnson led the start-up of Damco Brasil (previously known as Maersk Logistics Brasil) and the start-up of Hutchison's Oman International Container Terminal in Port of Sohar.

Johnson Leung, Co-Founder

Johnson comes from a traditional shipping background where he spent the first seven years of his career with Maersk Line in Denmark, Brazil and China before working for Hutchison Port Holdings as an Investment Manager specializing in acquiring and negotiating port concessions in the Middle East. Johnson's last assignment with Maersk was the eCommerce project at headquarters, where he provided business logic for the development of Maersk Line's on-line platform, similar to our TEU Ecosystem. Moving from industry to finance, he was the regional shipping analyst at JP Morgan and then a senior shipping analyst for Tufton Oceanic, the largest shipping hedge fund, before joining Jefferies as their Head of Regional Transport and Industrials Research for the Asia Pacific region. Johnson is a graduate of Maersk Shipping Academy and HKUST, and holds an INSEAD MBA.

Jonathan Lee, Co-Founder

Jonathan Lee is a Banking and Finance professional who spent over 20 years of his career with private, commercial and investment banks. In the last 4 years, he held managerial positions with 2 European private banks, namely Union Bancaire Privée (UBP) and Coutts & Co, overseeing Asian Treasury, Trading and Dealing functions. He was the Head and Deputy Head of Treasury in 2 Chinese commercial banks, Shanghai Pudong Development Bank and China Construction Bank, respectively for 5 years. Prior to that, he developed his diverse banking competence in various



functions, including sales trading, settlement operation and risk management in Bank of NY Mellon, Standard Chartered Bank, JP Morgan and the clearing house of HK Futures Exchange over 13 years. He has unique experience in setting up the Treasury, Trading and Dealing functions for newly established banks, e.g. UBP and Shanghai Pudong Development Bank in 2016 and 2010 respectively, in Hong Kong. Jonathan graduated from HKUST and holds CFA, FRM and CFP qualifications.

9.2. Advisory Board

David Yeung

David has over 20 years of experiences in managing private equity and infrastructure investment funds, and previously managed a \$1 billion ship and aircraft sale-and-leaseback portfolio. He currently serves as the independent investment committee member of the \$1.2 billion IFC Global Infrastructure Fund. He spent 17 years with AIG Global Investment and retired in 2012 as President and CEO of AIG Capital Partners, overseeing a \$7 billion portfolio of AIG sponsored PE/infrastructure funds in emerging markets. Prior to joining AIG in 1995, Mr. Yeung was Vice President of Bell Canada Ventures, engaging in technology investment in North America. Prior to that, he managed a \$1 billion large ticket lease financing operation for Xerox Canada focusing on ship and aircraft leasing. Mr. Yeung is a Certified Public Accountant of the State of Indiana and a Chartered Accountant of Ontario. He received an MBA degree in Finance from University of Chicago and a B. Sc degree in Marketing from Indiana University.

Kai Lung Hui

Kai Lung Hui is a Chair Professor in the Department of Information Systems, Business Statistics, and Operations Management at the Hong Kong University of Science and Technology (HKUST). His research interests include information privacy and security, IT policy, FinTech, and electronic commerce. His research has been published in scholarly journals including Management Science, MIS Quarterly, Information Systems Research, and Journal of MIS, among others. He is currently serving as a senior editor for Information Systems Research and an editorial board member for Journal of MIS, two of the top information systems journals. Professor Hui has provided expert advice and consulting services on copyright and digital piracy to various government and non-government organizations. He frequently speaks in conferences and forums on digital piracy, information privacy and security, FinTech, and technology policy. Professor Hui has taught undergraduate, MSc, MBA, EMBA, PhD, and executive courses. He obtained his BBA and PhD degrees from HKUST.



10. Legal Considerations

10.1. Landscape for Cryptocurrencies

The legal definition and treatment of cryptocurrencies is still ambiguous. We see increasingly that governments of developed economies, like Japan, have accepted bitcoin as a legal method of payment, and show inclination to accept bitcoin as a form of currency. However, there are also governments, including Hong Kong and Singapore, which identify bitcoin as a commodity.

But being decentralized by design, cryptocurrencies pose a challenge to any authorities trying to lay down a regulatory framework. Unlike other currencies, a cryptocurrency, e.g. bitcoin, does not belong under the remit of any country's central bank. Governments mostly are still juggling over issues such as user protection, anti-criminal activities (e.g. money laundering), promotion of innovation, etc.

However, an early adoption of DLT technology by central banks is seen in other parts of the world. The Singapore Government has started Project Ubin, which is an initiative in issuing digital Singaporean Dollars⁸ based on DLT architecture in a private chain. Likewise, the SEC in the United States is currently also reviewing an Ethereum ETF proposal, filed by the backers of the EtherIndex Ether Trust.

US: Treasury classifies bitcoin as a convertible decentralized virtual currency while the CFTC classifies bitcoin as a commodity.

China: There is no regulatory framework for dealing in bitcoins. Individuals have been allowed to trade cryptocurrencies but financial institutions have been instructed by the Central Bank not to take part in cryptocurrency transactions. Since the beginning of 2017, there have been occasional rumors of authorities regulating bitcoin transactions. We believe the main concern of the government is not dealing in cryptocurrencies per se, but the exodus of hard currency where bitcoin is perceived as a way for the mainlanders to send money out of China.

Hong Kong: The government notes that cryptocurrencies are not regulated in Hong Kong. In fact, the HKMA has stated that cryptocurrencies are a commodity, not money.

10.2. Other Issues

Proceeds of the Token Sale will be used on product development, marketing and 300cubits' operation expenses, etc., including compensation for the team involved

⁸ <http://www.mas.gov.sg/Singapore-Financial-Centre/Smart-Financial-Centre/Project-Ubin.aspx>



in the project. The TEU tokens, in our plan, are designed to be used as the de facto cryptocurrency for the container shipping industry. Being the largest token holder post the ITS, 300cubits will be highly motivated in successfully implementing the project and enhancing the value of the TEU tokens. However, successful implementation of the project will depend on the acceptance of TEU tokens by the cryptocurrency community and the container shipping industry. Hence, we cannot guarantee the future performance of the TEU tokens nor could we guarantee that the TEU tokens could hold any value in the future despite our belief that the cryptocurrency community will accept and assign value for the TEU tokens and the container shipping industry will adopt the TEU token first as their booking deposit.



Appendix I: Container Shipping Market

Marine shipping is vital to the global economy, being the transportation means for over 90% of the global trade volume. Container shipping is the sub-segment that carries manufactured goods primarily. The whole container shipping industry carries about 190mn TEUs (twenty-foot equivalent unit) shipments per year through a capacity of about 5,129 ships with 20mn TEUs. Annually the container liners alone produce about \$150bn revenue (in 300cubits estimates). We aim to make TEU tokens the de facto cryptocurrency for this market of container liners and their customers. If we consider the entire value chain of container transportation - trucking, railway, warehouse and the logistics management services - the industry's revenue could be some multiples of the \$150bn revenue that container liners themselves generate each year.

Today, container ships usually carry containerized cargoes from developing regions to the developed ones. The ships are sailing on a multiple-stop, fixed routes with a fixed schedule - a liner trade, which is comparable to bus operations. In order to maintain weekly sailing, each container shipping service has to operate a fleet of ships and container boxes instead of an individual ship. This accounts for the capital-intensive nature of the shipping business.

The most dominant trades are the Westbound Asia-Europe and the Eastbound Trans-Pacific trades, which are considered the main hauling routes and hence the focal points of the container shipping industry. Although the intra-regional trades such as Intra-Asia trades may constitute the largest volume, the intra-regional traffic distances are short. So, on a ton-mile basis, Asia-Europe and Trans-Pacific are still the largest trades where over 40% of the global capacity is employed.

Unlike the airline industry that operates on a bilateral system due to the Chicago Convention of 1944, container liners are free to call any port in the world, e.g. a Chinese container liner is free to pick up Europe-bound cargoes in Singapore, which makes the container shipping industry highly competitive as capacity is free to be deployed to where profit can be made.

The container ships are the cargo ships with a cellular design to carry cargo inside container boxes. Container ships have cellular segmentation inside the holds of the vessel body so that the containers can be stacked inside the holds. Hatches are used to cover the holds and allow more containers to be stacked on deck.



Figure 6. A typical container vessel



Source: iStock

The containerized cargoes are typically furniture, auto parts, garments, footwear, toys, electronics etc., that we usually see in the department stores and the non-food section of supermarkets. The aforementioned cargoes are usually referred to as 'dry cargo' in the industry as opposed to 'reefer cargo', which are the perishable goods such as meat, poultry, seafood and fruits. Dry cargo is the predominant cargo type in the east-west trade while reefer cargo features prominently in the south-north trade, e.g. agricultural exports of Brazil, Argentina, South Africa, Australia and New Zealand. The backhaul routes in the east-west trades such as the Trans-Pacific westbound and Asia-Europe eastbound, involve shipping a fair amount of scrap material, dry agricultural products and machinery.



Appendix II: Shipment Booking Process

In terms of business transactions, container shipping shares some similarities with airlines in the sense that customers book transport service in advance and then show up on the booked date to use the service. However, the transaction of these two transport modes are also very different in many ways, e.g. one being for passengers with the other being for cargo. But the most interesting difference, which is also the pain point for container shipping, is that the airline customers have paid for the ticket before they use the airline service while the container shipping customers only pay after the shipment is loaded onto the ship or even after the shipment is delivered at destination.

A typical container shipment today going from China to the US is still done on FOB (Free on Board) terms. The consignees (e.g. Walmart) in the US are the main contract counterparties of the container liners. The commercial transaction process starts between the consignees and the container liners' agent at the destination.

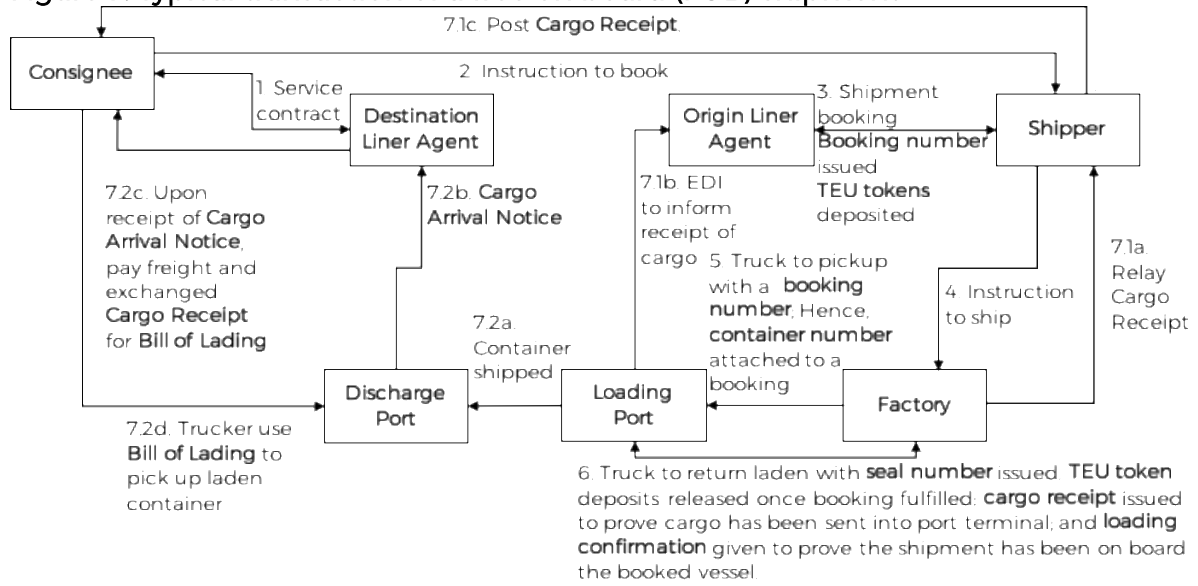
Then, a transaction instruction is given by the consignee to the shipper (cargo sender), for example, in Asia, which is usually a factory or a merchandising firm. Actual shipment booking, which is a request for shipping the cargo, is usually sent by the shipper to the container liner. The container liner will match the booking request with the contracts signed at the destination. Once a match is found, a booking confirmation will be formed and sent to the shipper. The factory is supposed to send in the cargo while the container liner is supposed to load the cargo onto a vessel as per the booking.

As aforementioned, there is always some "booking short-fall" or "cargo rolling", i.e. bookings not being honored. A ball park figure for the industry for "booking short-fall" or "cargo rolling" is at least about 5% of the total volume. The TEU token is designed to be used as a booking deposit to compensate the contractual party if the other side fails to honor the booking.

Please see the flow chart below that illustrates the process of a typical FOB shipment transaction.



Figure 7. Typical transaction of a free on board (FOB) shipment



Source: 300cubits



Copyright © 2017 300cubits

Without permission, anyone may use, reproduce or distribute any material in this white paper for non-commercial and educational use (i.e., other than for a fee or for commercial purposes) provided that the original source and the applicable copyright notice are cited.

DISCLAIMER: This 300cubits White Paper is for information purposes only. 300cubits does not guarantee the accuracy of or the conclusions reached in this white paper, and this white paper is provided “as is”. 300cubits does not make and expressly disclaims all representations and warranties, express, implied, statutory or otherwise, whatsoever, including, but not limited to: (i) warranties of merchantability, fitness for a particular purpose, suitability, usage, title or non-infringement; (ii) that the contents of this white paper are free from error; and (iii) that such contents will not infringe third-party rights. 300cubits and its affiliates shall have no liability for damages of any kind arising out of the use, reference to, or reliance on this white paper or any of the content contained herein, even if advised of the possibility of such damages. In no event will 300cubits or its affiliates be liable to any person or entity for any damages, losses, liabilities, costs or expenses of any kind, whether direct or indirect, consequential, compensatory, incidental, actual, exemplary, punitive or special for the use of, reference to, or reliance on this white paper or any of the content contained herein, including, without limitation, any loss of business, revenues, profits, data, use, goodwill or other intangible losses.

300cubits is a trademark under ETH Smart Contract Tech Limited, a limited company incorporated in the Hong Kong Special Administrative Region of the People's Republic of China.

Please also read Terms and Conditions for details regarding TEU and this Token Sale.

Email info@300cubits.tech
Website <https://300cubits.tech>