



OBORTECH
SMART LOGISTICS HUB

Whitepaper

November 2020

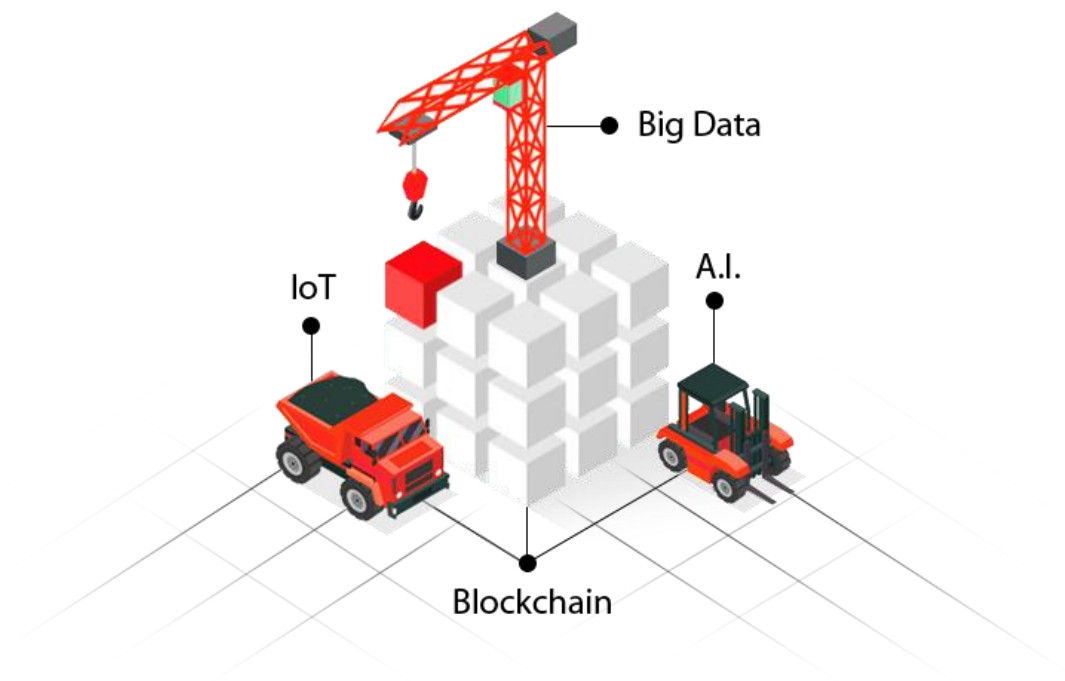


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1. EXECUTIVE SUMMARY

Cross-border containerized supply chains are some of the largest and most complex business ecosystems in the world today. Accessing and sharing information among supply chain actors require laborious communication procedure involving peer-to-peer messaging, manual and paper-based processes, and expensive legacy systems for the interaction with others. In addition, the lack of visibility cripples supply chains, reducing their responsiveness.

The issue is more acute in Euro-Asian and European inland transport routes. Many of countries in the region are landlocked developing countries. Transportation through inland routes is particularly important for Small-Medium Enterprise (SME)s of this region because of its moderate cost and logistics flexibility since air transport is expensive and sea transport is too slow to them.

Aiming to help those countries in overcoming their supply chain constraints, OBORTECH started development of a smart hub. Based on effective combination of Blockchain, Internet of Things (IoT), Artificial Intelligence (AI), and Big Data, the Smart hub will revolutionize current logistics systems into simple and fully digital place. It brings together exporters/sellers, importers/buyers, freight-forwarders, transporters, regulators, financial institutions and end-users, and enable their supply chains with real-time shipment visibility, unified information exchange, data analytics, validation of product provenance, and open networking marketplace.

As of today, the Smart hub's prototype was developed and tested on one of Mongolia's biggest meat exporters' inland export shipment to China. OBORTECH is planning to start its full Smart hub operation from the second half of 2021. Its goal is to serve 5 % of selected perishable products transportation between Europe and Asia, and intra-Europe by 2025 in addition to meat, cashmere, copper concentrate, and coal exports and pharmaceutical product import from/to Mongolia. Being a front-runner in its market to take off–Mongolia, OBORTECH has established partnerships with transportation companies and governmental institutions in Mongolia. It also has partners in Netherlands and Australia.

Until today one of the biggest logistics companies in Mongolia invested in OBORTECH to fund the prototype development. The OBORTECH Foundation will raise initial funds to build the infrastructure and scale the Smart hub application through a private placement of OBOT tokens with SAFTs. The token sale stages and fundraising targets comprise of (1) Early Investor Sale – USD 200,000, (2) Private Placement – USD 1,500,000, (3) ILO (IDO,IEO) – USD 7,500,000.

OBORTECH's service has become more in demand under current global situation of COVID-19 pandemic. Industry professionals have concluded that supply chains are going to need to be more flexible and resilient, and able to shift sourcing and distribution in days or weeks, instead of in months or years. Additionally, fully digital and remotely controlled smart system will greatly reduce contamination risk by limiting physical interactions in supply chain.

2. DESCRIPTION OF BUSINESS

Vision, Mission statement and Values

- Vision
Seamless supply chain and easy to participate trade system connecting Europe and Asia.
- Mission statement
Providing simple and one-stop solution of seamless supply chain communication and data to SME participants on inland transportation in Euro-Asia and intra-Europe, particularly suited to perishable freight transportation participants.
- Values
Simplicity done with excellence

Ownership and Management

OBORTECHglobal OU is a start-up company with the goal to renovate traditional logistics complex communication and data exchange system into an advanced smart hub.

The company is registered in Estonia. It is a parent company of OBORTECH Mongolia LLC, which is the Asia market implementation arm of the business.

OBORTECHglobal OU's transformative project started in 2018. As the founders had seen constraints in transport and shipment flow and development opportunities for inland transporters between Europe and Asia, they established OBORTECH Mongolia LLC in November 2018. OBORTECHglobal OU was established in Estonia in May 2020 to expand the project into European market and will acquire the OBORTECH Mongolia LLC in 1st Quarter of 2021.

Company's day-to-day management is run by Mr. Tamir Baasanjav. He is a founder and one of the major shareholders of the company. He also designed the Smart hub concept and its business strategy. He had worked in managerial and expert positions of prestigious international development, government and business organizations such as an agency funded by Government of the United States, Swiss Agency for Development and Cooperation, and the biggest corporate bank of Mongolia. He has 10 years of experience in project development and UX/UI design.

Head of Partnership development in logistics sector is Mr. Enkhbat Dorjsuren. He is also a co-founder and one of the major shareholders of the company. He has 20 years of experience in transport logistics sector and extensive network in Mongolian transportation sector. He is a CEO of Mongolian Express LLC, one of the leading freight forwarders in Mongolia.

The team consists of other members who are IT, finance, investment, and legal experts, and they are all internationally accredited. Know more about the members from the Team section.

Business highlights

OBORTECH founders approached Mongolian Customs Office in October 2018 with their ideas of the Smart hub. Mongolia is midpoint location for inland trade and transportation between Europe and Asia as well as one of the potential biggest exporter of meat and mining products. The Customs Office liked the ideas and expressed their willingness to collaborate with OBORTECH once the project is fully developed.

In December 2018, Mongolian Transport Corporation, an organization to support transport and logistics development in Mongolia also started partnership with the project and expressed its interest to join the Smart hub after its full development.

The project concept was developed and formulated in June 2019. Getting committed to the development of the Smart hub, the founders moved to the prototype testing stage in 2019.

An alpha version of the prototype system was developed in August 2019 and was tested in a terminal yard of Mongolian Express LLC. In October 2019, a management of Mongolian Express LLC invested in the project and became a shareholder and strategic partner of the project.

In September 2019, Intermodal Solutions Group, a global company supplying next-generation container rotation system for the mining, grain and ship loading industries partnered with the project and expressed its interest to promote OBORTECH system through its global client network.

In December 2019, a beta version of the prototype system was developed and tested on a cross-border shipment from Mongolia to Germany. In May 2020, Dutch Mongolian Trade Office started partnership with the project and expressed interest to pilot the Smart hub on trade logistics between the Netherlands and Mongolia.

In August 2020, a final version of the prototype system was developed and tested on export shipments from Mongolia to China and Australia.

3. PROBLEM

Cross-border containerized supply chains are some of the largest and most complex business ecosystems in the world today. Exporters/sellers, importers/buyers, freight forwarders/third-party logistics(3PL)s/transporters, regulators, ports/terminals, and financial institutions need consistent, reliable and real-time data from multiple sources to effectively manage their supply chains and keep client relationships strong. It is not uncommon for 30 independent parties, 100 people and up to 200 exchanges of information to be connected to a single shipment¹.

Accessing and sharing those data often requires laborious communication procedure, which involve cumbersome and costly peer-to-peer messaging, manual, time-consuming, and paper-based processes, and expensive legacy systems for the interaction with other systems. Some of the systems even lack capabilities to interact with other systems. A customer support agent for a freight forwarder may have to make up to five calls to different parties to answer a simple location question including carrier, trucking operator, and rail operator. The World Economic Forum estimates that document processing accounts for 20% of the total transportation costs within global trade. And those situations cause inconsistency of information throughout the supply chain frequently hindering the efficient flow of goods.

In addition to above, the lack of visibility cripples supply chains, reducing their responsiveness. Lack of visibility also diminished supply chain ability to improve long-term operational and cost efficiencies. According to TradeLens's study, 63% of shippers say that visibility was the most needed IT capability of their 3PL partner in 2018.

In the food and biologics industry, temperature excursions or the theft of products is rarely detected in real-time. In fact, an estimated 20% of temperature-sensitive products are damaged during transport due to cold chain interruption alone, according to several of Asian shippers. BSI Group's Global Supply Chain Intelligence Report, 2015 reveals global cargo theft is currently estimated at upwards of USD 25 billion worldwide. The full magnitude and economic impact of cargo theft worldwide is relatively unknown however, because not all of it is properly reported.

Mining export logistics, particularly exporting minerals like coal has serious economic and environmental problems stemmed from its current logistics procedure. For instance, in Mongolia, coal transporters need to transship their cargo nearby port area for customs inspection and clearance due to fragmented information sharing and mistrust among the supply chain actors. Because of the transshipment, coal dust heavily pollutes the surrounding area and creates negative health impacts to the drivers. Additionally, an external cost is implicated due to the transshipment process.

¹ TradeLens (another logistics platform jointly developed by IBM and Maersk) Introductory leaflet, 4 Sep, 2018



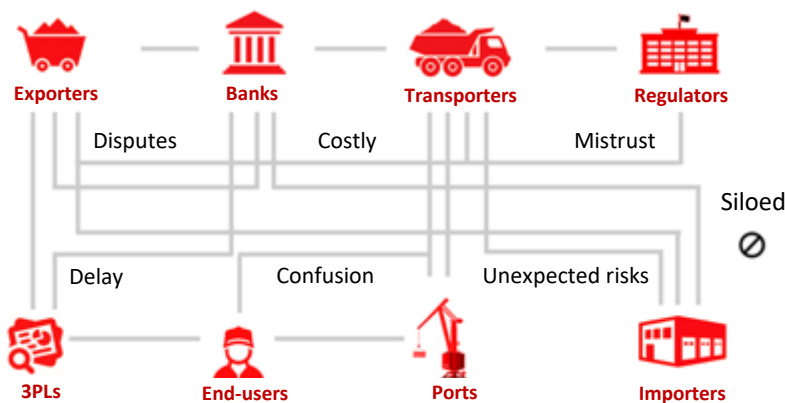
Picture 1. 160km queue of trucks near Mongolia-China border due to inefficient logistics system in 2017. Source: Reuters



Picture 2. Environmental pollution in area of 1 km due to transshipment of complex coal logistics procedure.

Nowadays in food supply chain, consumers have numerous options when it comes to where to buy their food. With such a competitive food industry, brand differentiation is important to remain top of mind for buying decisions. International Food Information Counsel estimates currently, 59% of people think it's important for food to be produced in a sustainable way, up from 50% in 2017. PWC study reveals 32 % of consumers are willing to pay more for a truly transparent product, particularly regarding origin and manufacturing methods. According to Sainsbury's, 84% of shoppers consider the impact of how and where food was produced when making a purchase. Also fresh food purchases have steadily outpaced other food and beverage departments, making up a third of all supermarket purchases. Yet, properly controlled transportation is still an issue. USD 7 billion worth of fresh food still spoils before ever reaching a consumer in North America alone, according to IBM Food Trust available statistics. Because of the complexity of global food system, food fraud is a global business exceeding USD 10 billion dollars annually today².

Picture 3. Existing legacy systems for communication and control in supply chains



² IBM, Food Trust Report, 2018

4. SOLUTION

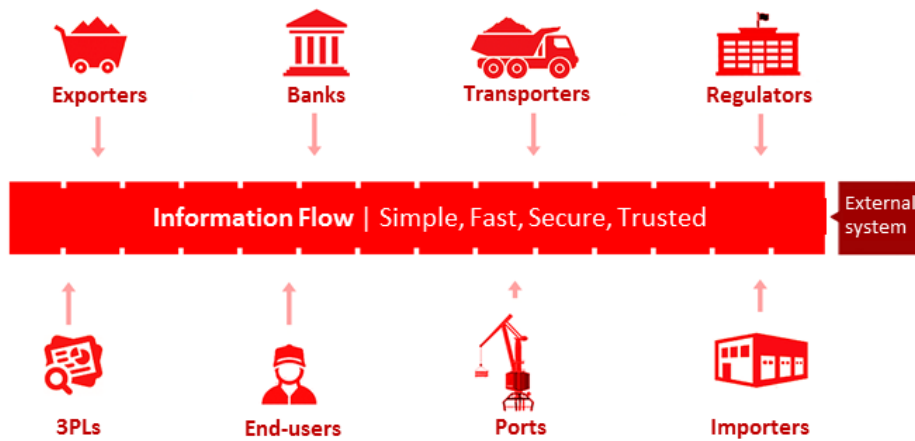
OBORTECH's founders started development of the Smart hub with integrated information ecosystem that include an access to real-time data and analytics and a greater shipment visibility. Based on effective combination of Blockchain, IoT, AI, and Big Data, the Smart hub will revolutionize current logistics system into simple and secure mechanism introducing streamlined communication, better tracking methods as well as more transparency.

The Smart hub function is comprised of the following parts:

- **Blockchain and cloud powered communication hub.**
Accessible via easy to use web and mobile user interfaces, and an open API, the Smart hub brings together exporters/sellers, importers/buyers, freight forwarders, 3PLs, transporters, ports/terminals, regulators, insurance and financial institutions, and end-users, and enable their supply chains to share information, collaborate, conduct data analysis, and validate product provenance in real-time on a trusted platform.
- **Tamper-proof, unified and online document exchange.**
The Smart hub allows secure sharing and exchange of documents with supply chain partners using blockchain powered version control. Authorized parties to any shipment can immediately see when changes have been made, and by whom, along a shipment journey. Moreover, authorized parties review the status of the critical shipping documents to advise customers on progress and any actions needed to maintain required delivery date.
- **IoT based real-time visibility and tracking.**
IoT sensors are installed on containers/trucks and transmit data to the Smart hub dashboard to track valuable shipments, monitor their key physical measurements, and protect high-value products against theft. A client gets positioning data for shipment in real-time, irrespective of the shipping carrier they choose. Any deviation from conditions specifications of shipment such as temperature, humidity, shock, and altitude will result in an alarm providing with an opportunity to salvage goods and maintain its quality. Use of a tamper light sensor protects high-value products against theft. If a container is "Opened" during a shipment before arriving at its destination, the system transmits an alert to a client.
- **Open and decentralized networking marketplace.**
Based on the blockchain based trusted network established among the Smart hub participants, a transparent and fair marketplace will be created. The marketplace ecosystem will enable verification and rating of stakeholders in supply chain without the need for third-party credentials. It would be done automatically based on their supply chain provenance data and shipment histories registered on the network. Buyers and

suppliers would make better informed decisions filtering out risky participants based on the automatic scoring/rating system analyzed their past performances and transaction histories. Moreover, the marketplace welcomes third party developers and service providers for delivering fit-for-purpose products and services to the Smart hub users. OBORTECH expects the marketplace to be the birthplace of further innovations.

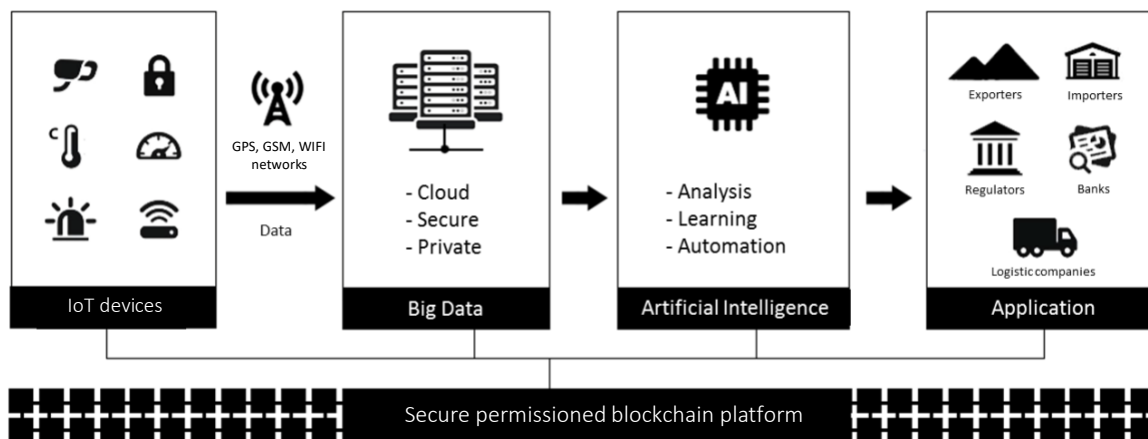
Picture 4. Communication and control through the Smart hub



Key technological solutions

The Smart hub is a fully integrated system for shipments in supply chain, from the time they leave production site or warehouse until they get delivered to importers' hand. The Smart hub will greatly impact fulfillment of Seven Rights of logistics - right product, right customer, right time, right place, right condition, right quantity and right cost through the following technologies.

Picture 5. Core technologies



Blockchain

Blockchain is a distributed ledger that records transactions in a series of blocks that are linked with cryptography, forming a chain of immutable records. Blockchain enables multiple stakeholders to share information in a secure and confidential manner without the need of intermediaries. Below are key components of blockchain:

Shared Ledger

Immutable distributed system of records shared among the network participants.

Cryptography

Ensures authenticated, secure and verifiable digital interactions over an unsecured network.

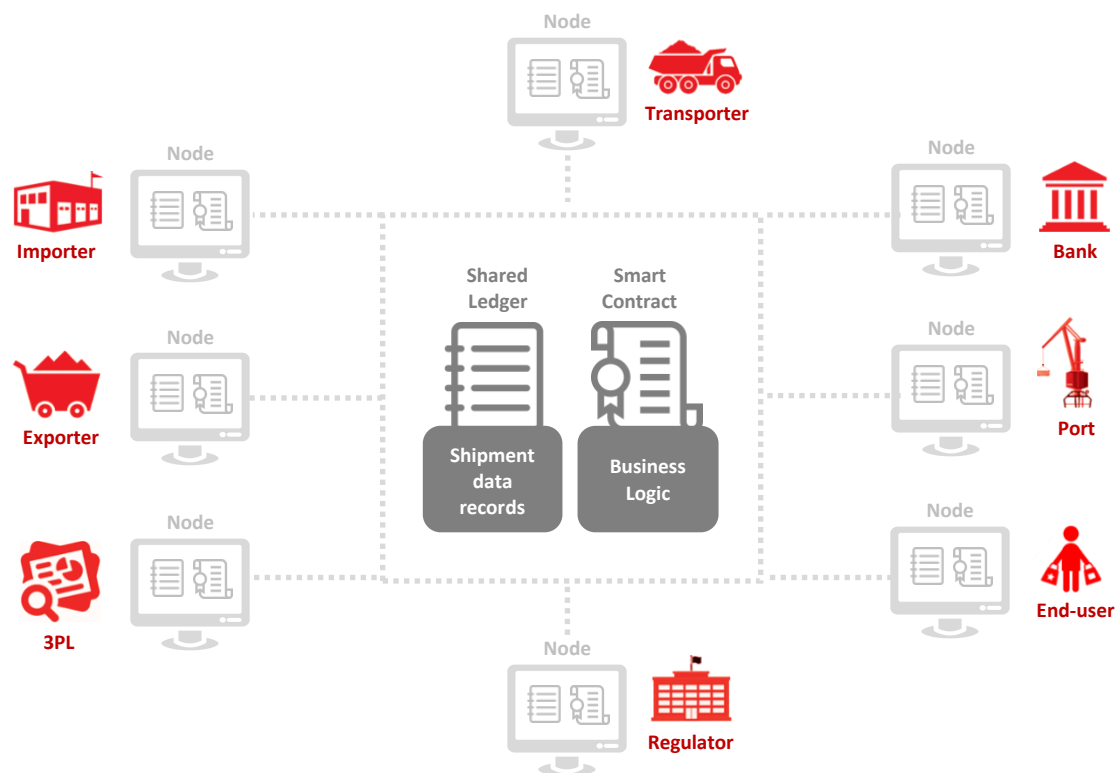
Smart Contracts

Self-executing code consisting of embedded business terms that is stored and executed on the blockchain.

Consensus

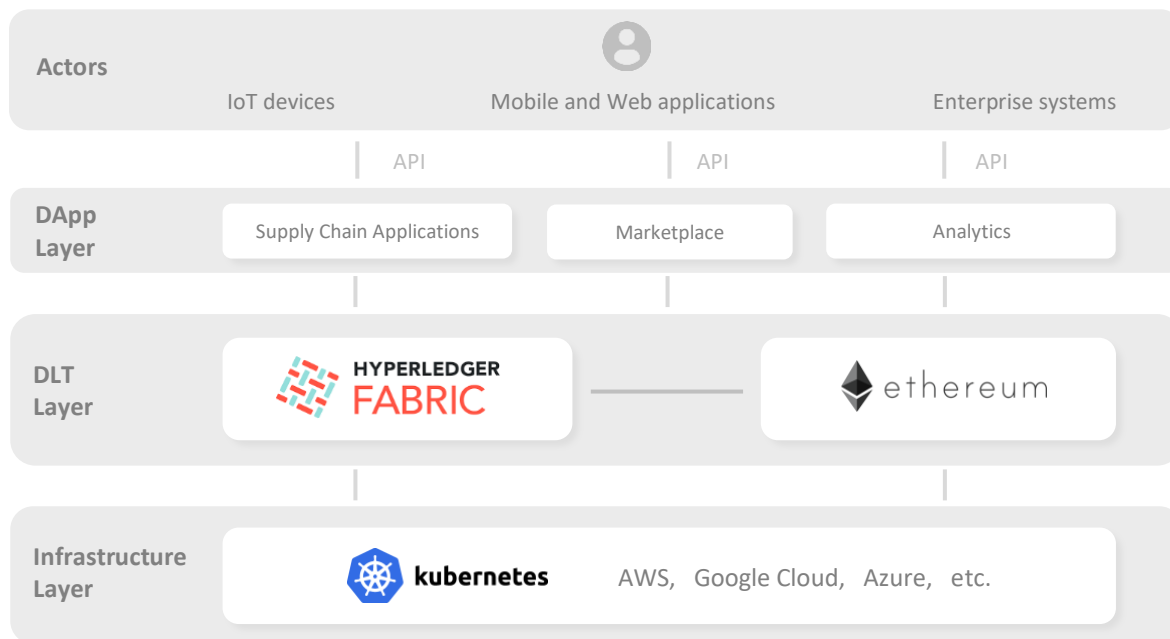
A mechanism to achieve agreement between the transacting parties.

Picture 6. The Smart hub blockchain network



The Smart hub platform is comprised of Private Hyperledger Fabric Blockchain & Ethereum Public Blockchain. Supply Chain & Marketplace DApps are built with Hyperledger Fabric, whereas Ethereum is used for tokenomics and processing token payments.

Picture 7. The Smart hub platform

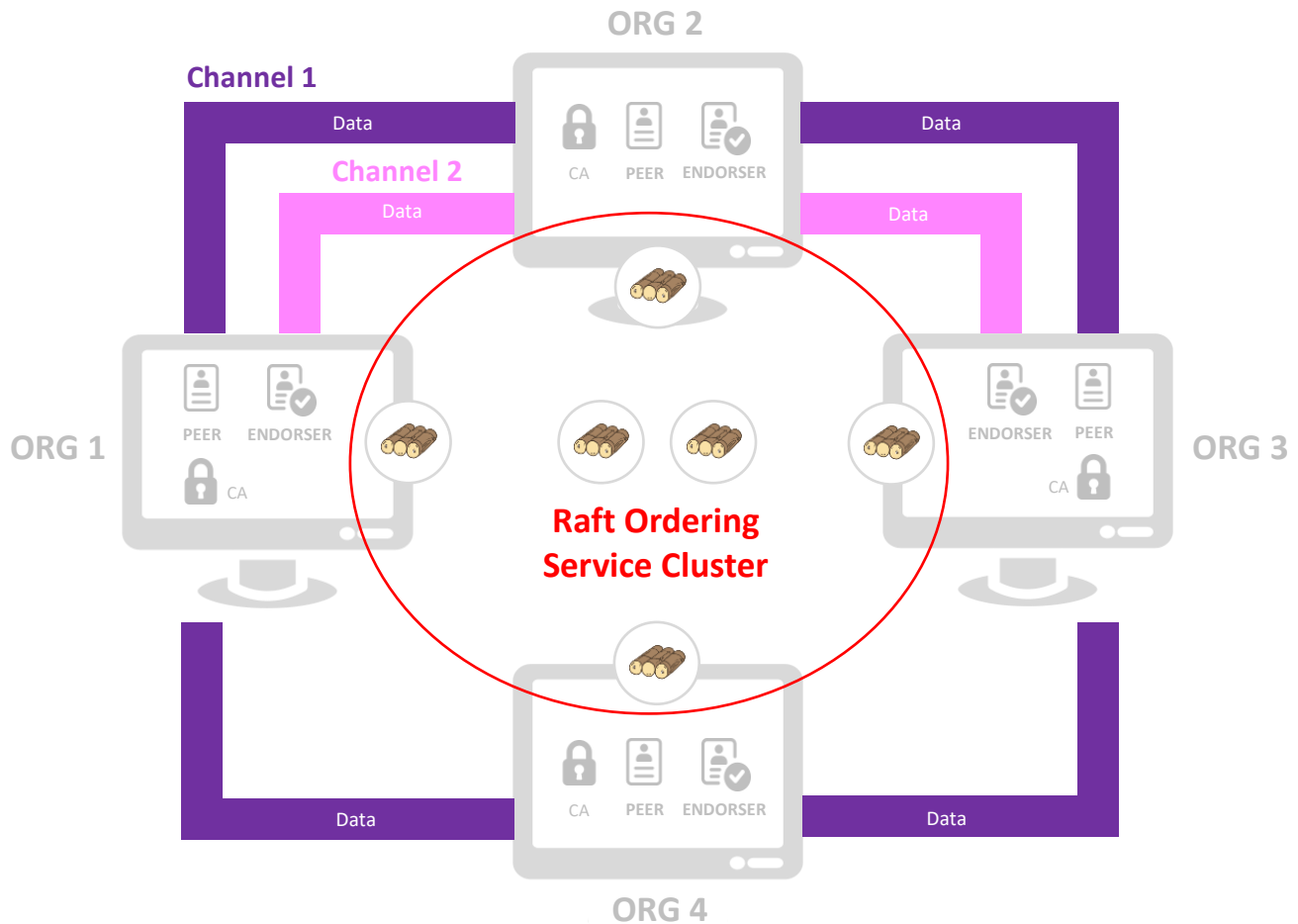


The Smart hub enables the permissioned blockchain-based consortium of exporters/sellers, importers/buyers, freight-forwarders, 3PLs, transporters, ports/terminals, regulators, insurance and financial institutions, and end-users. The Smart hub allows nearly real-time information sharing among the actors. Any authorized business network participant can review and update information only if the network consensus algorithm validates it. Information stored in the blockchain ledger can never be deleted, thus blockchain serves as accurate, immutable, and verifiable record ensuring transparent and fair trade.

What is Hyperledger Fabric:

Hyperledger Fabric is an enterprise-grade, distributed ledger platform that offers modularity and versatility for a broad set of industry use cases. The modular architecture for Hyperledger Fabric accommodates the diversity of enterprise use cases through plug and play components, such as consensus, privacy and membership services.

Picture 8. The Smart hub Hyperledger Fabric Architecture



Features:

Easy onboarding

New members of the network are enrolled through a *Membership Service Provider* with a few simple steps. New organization can Signup by submitting their company information. Stakeholders can verify the information & approve (endorse) the new member. Once sufficient endorsements are received (satisfying the underlying endorsement policy), the new organization will be added to the business network.

Integrated IoT

By its intrinsic properties, an IoT enabled blockchain can overcome visibility and traceability challenges of supply chains. All the shipment data is stored into the undisputed and immutable blockchain shared ledger, thus making the system transparent, reliable and efficient.

OCR and Document Sharing

The Smart hub leverages Optical Character Recognition (OCR) to convert immutable hard(scanned) copies of documents into editable and searchable text documents. Scanned documents of any format are converted to structured data that accelerates the entire supply chain. Digital documents are securely stored in the encrypted storage and the document details and the hash of the document are stored into the immutable blockchain ledger. All the intended users can access, update and share the shipment documents. Authenticity of the document can be easily be verified by matching the hash of the document stored in the blockchain ledger. Whenever a document is updated, the new hash of the document is stored in the blockchain. Participants are notified whenever a document is added or updated. All involved participants may request change(s) in the shared documents via the Smart hub chat module before accepting the document. The document is saved when a majority (or all) of the participants accept the document satisfying the consensus algorithm. Participant reviews the status of the critical shipping documents to advise customers on progress and any actions needed to maintain required delivery date.

Distributed Marketplace

The Smart hub marketplace is a blockchain based decentralized system that enables buying, selling and exchange of services without the need of intermediaries among the marketplace participants. All the function of the marketplace will be governed by the Smart contracts. The Smart contracts will embed business logics described below:

Marketplace Contract - The marketplace contract will provide the business logic which orchestrates the process of listing, browsing and purchasing/exchanging of services.

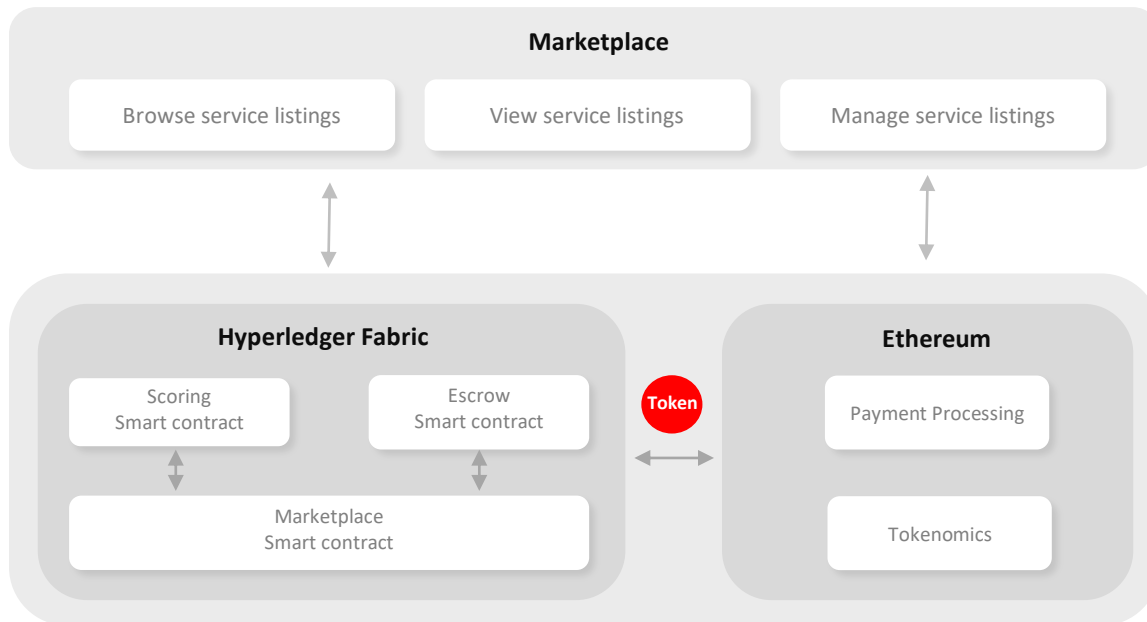
Escrow Contract - The escrow contract will contain the business logic to reduce and mitigate risk for both buyers and sellers. This logic will form an escrow between the buyer and seller that is paid out automatically in the event that both the buyer and seller approve the escrow.

Scoring Contract - The scoring contract will implement dynamic algorithms to calculate score/rating of the stakeholders based on the following immutable data stored in the blockchain ledger:

1. Supply chain provenance data and shipment histories.
2. Verified reviews and ratings of the stakeholders.

Based on the score, the stakeholders will also be rewarded with the tokens. The logic to calculate the rewards will be written in the Smart contacts and will be governed by the marketplace stakeholders. See more from *Tokenomics* section.

Picture 9. The Marketplace highlevel architecture



Privacy:

Members of the business network work together, but some of the organizations maintain separate relationships so they need information to be private and not visible across the entire network. The Smart hub utilizes the Channels feature of Hyperledger Fabric for keeping the data private to a specific group of participants. Rather than an open, permission-less system, Fabric offers a scalable and secure platform that supports private transactions and confidential contracts.

Performance & Scalability:

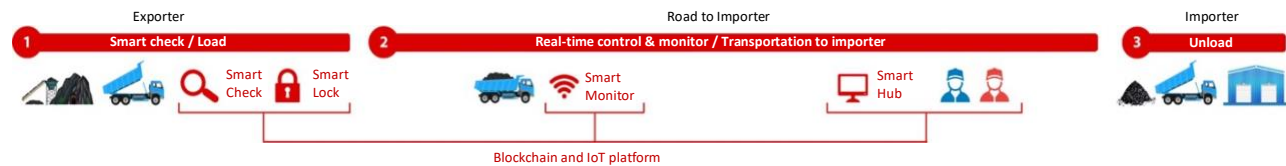
Transaction processing is done in 3 phases: *endorsement*, *ordering*, and *commitment*. This separation confers several advantages: Fewer levels of trust and verification are required across node types, and network scalability and performance are optimized.

Decentralized governance for the Smart contracts:

The Smart hub leverages decentralized governance of Hyperledger Fabric for the Smart contracts, with a new process for installing a chaincode on your peers and starting it on a channel. The new Fabric chaincode lifecycle allows multiple organizations to come to agreement on the parameters of a chaincode, such as the chaincode endorsement policy, before it can be used to interact with the ledger.

Smart devices to enable IoT

Picture 10. Smart devices



The Smart Monitor is IoT sensors installed on containers/trucks and aimed to transmit various data to the Smart hub dashboard. Smart Monitor can monitor location, sealing, temperature, humidity, and shocks of a container during transportation process in real-time.

The Smart Lock is remotely controlled digital lock system installed on each container transporting cargo. The system will lock cargo container once it is checked by relevant parties. The locked container can only be unlocked by the Smart hub after being validated by relevant parties in the Smart hub. The validation process will be done on a blockchain platform.

AI and Big Data

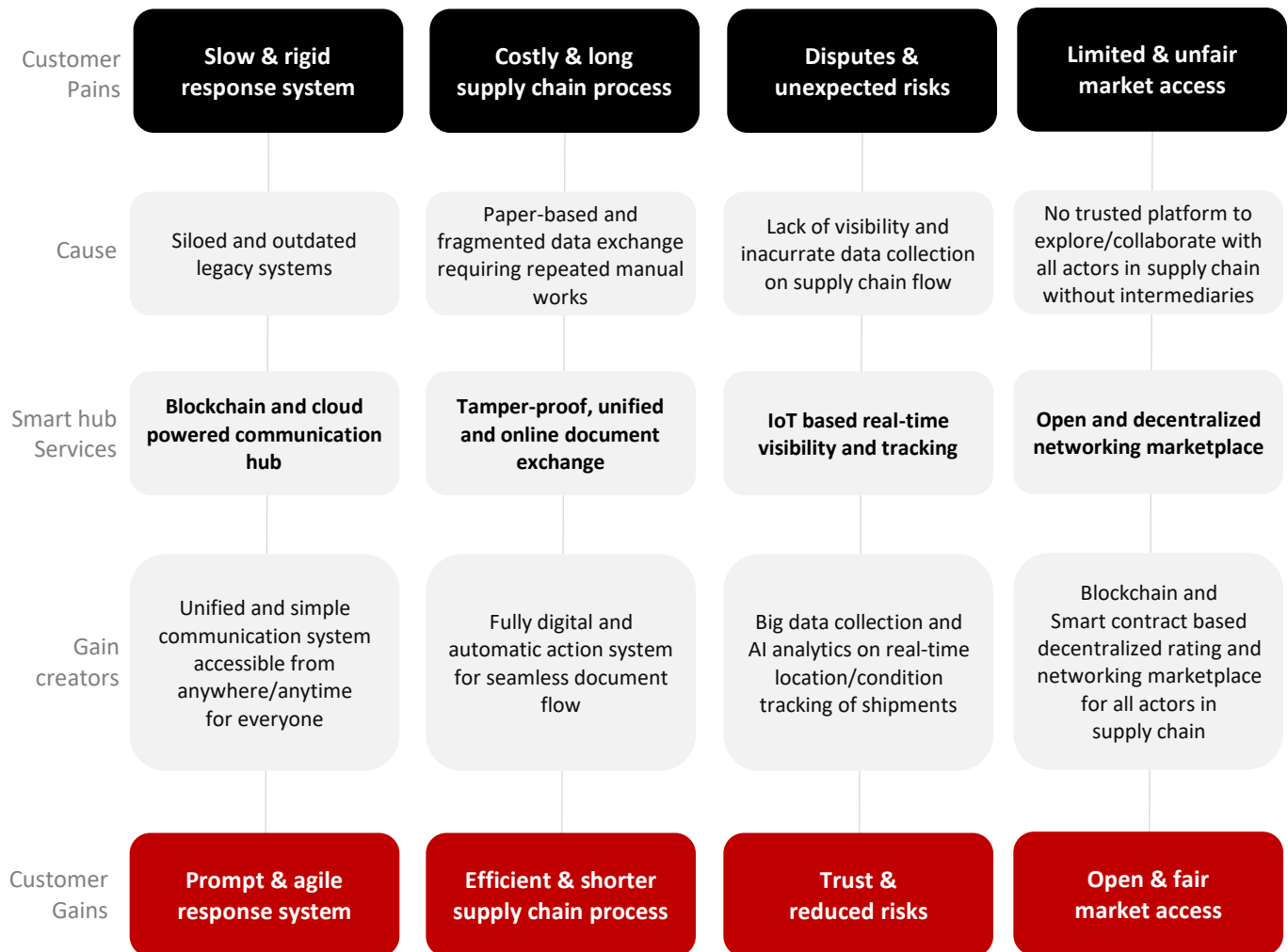
AI will be integrated to the system not only to remove human mundane and routine work, but also to surpass human capabilities with regard to reach, quality, and speed. AI provides opportunity for logistics companies to advance network management to degrees of efficiency that cannot be achieved by human thinking alone. AI can help to upgrade the logistic ecosystem by learning from large volumes of complex data pattern which are integrated from connected devices and processed by Big Data technology.

Integration with existing systems

The Smart hub will not replace existing systems of regulators and institutions engaged transport and logistics. Rather, it will provide a platform underpinned by smart technologies for smooth and efficient integration. The Smart hub users will be equipped with IoT sensors and secure servers for reliable integration.

5. VALUE PROPOSITION

Picture 11. Customer Pains and Gains in supply chain



See gains and benefits of different customer types from *Customers, Market analysis* section.

6. MARKET ANALYSIS

Global trend for smart logistics solution

The current global situation under COVID-19 pandemic urge implementation of new technologies into transport and logistics industry. People in everywhere have figured out that supply chains are important. They may not know much about what they are but they have understood that we are about seven days away from starvation without them, according to many of related market researchers. Transport and logistics professionals have also concluded that enough time have passed to make the lessons of COVID-19 pretty clear - supply chains are going to need to be more flexible and resilient in the face of unexpected change, and able to shift sourcing and distribution in days or weeks, instead of in months or years.

Countries like South Korea, Netherland, Belgium, and Abu Dhabi started projects connecting their ports via blockchain technology to improve the efficiency and integrity of the international trades. Founded in August 2017, the Blockchain In Transport Alliance, has quickly grown into the largest commercial blockchain alliance in the world, with nearly 500 members in over 25 countries. Blockchain based platforms have been highly appreciated by many cross-border trade and transport participating authorities. The World Customs Organization highly values the importance of blockchain for cross border trade and calls it to be a giant leap for Customs in the 21st century³. Over 600 ports and terminals all over the world have joined the blockchain network as of today⁴.

Development opportunities of inland transport routes in the Euro-Asian continent was also not about the simple choice between transport routes and/or transport modes. It was the competition of logistic decisions, and focused on the needs of particular, better technology supply chains. “Supply chains compete, not companies” according to leading thinkers in logistics and supply chain management.

Due to UN EATL project report, 2020, any transport route in the Eurasian continent would be able to attract traffic if it was competitive in the context of supply chains. As identified in the report, existing physical and non-physical supply chain barriers along the Euro-Asian inland routes hampering transport operations are:

- Time-consuming control procedures leading to delays at border crossing points,
- Multiple cargo checks en route,
- Difficult monitoring of inland routes due to the heterogeneity of existing transport and transit rules,
- Absence of ‘single window’ procedures at border crossing points.

³ Research Paper No. 45, World Customs Organization

⁴ ICTSI connects 31 terminals to TradeLens, Splash247.

All of those create cumbersome communication and information exchange throughout the supply chain diminishing its efficiency and effectiveness. Interactions of supply chain participants through unified information exchange and real-time shipment monitoring platforms such as OBORTECH's could help them enormously saving time and costs.

Market size and target

OBORTECH is planning to provide its services to three main markets:

- Euro-Asian inland transport,
- Intra-European inland transport, and
- Export and import transport of Mongolia.

Euro-Asian inland transport:

Traditionally Euro-Asian trade was largely transported by sea, according to statistics from organizations such as UNCTAD and Eurostat. More than 95 % of the volume (in metric tons), and nearly 70 % of the value (in USD) of cargo were transported by maritime routes. Yet, inland transportation such as freight flows via rail and road runs between Europe and Asia has been increasing lately, and expected to increase further because⁵:

- Faster delivery of goods between Europe and Asia on inland routes compared to maritime routes,
- Growth in inland container transport of "time sensitive" cargo,
- Inland routes being important transport options for SME's to access markets and integrate in global supply chains,
- Combined efforts of many of the Euro-Asian countries to develop their infrastructure,
- Growth in transport of cargo originated from landlocked developing countries of Euro-Asian region, and
- Moderate cost and logistics flexibility since air transport is expensive and sea transport is too slow.

The total volume of goods transported between the EU-28 and China was approximately 105 million tons in 2016, according to UN EATL project report, 2020. Share of containerized goods in total volume of trade between Europe and Asia have been approximately 65 % for the routes from Asia to Europe and 70 % for the routes going in the opposite direction. According to the Comtrade database⁶, the volume of containerised trade on inland routes between Europe and Asia was USD 1.17 trillion in 2015.

Within the containerized trade between Europe and Asia, perishable goods transportation has been increasing faster driven by increase in population and their income level. These types of

⁵ Analysis is based on UN EATL project report, 2020 by UN.

⁶ UN Comtrade is a repository of official international trade statistics and relevant analytical tables.

goods require transportation on a daily basis, and it has been one of main causes of increase in inland transportation. Air transport would be expensive and maritime transport slow for those types of goods. Perishable goods market can be divided into fresh and frozen agrifood products including meat, fish and seafood, dairy and frozen desserts, vegetables and fruits, bakery and confectionery, flowers, chemicals, and pharmaceutical products.

The following table shows estimated volume and value of selected perishable and time-sensitive goods transport by inland mode between Europe and Asia in 2015. The estimation is done by OBORTECH based on UN EATL project report, 2020, data. Inland transport share is determined according to Mongolian Express LLC's analysis. Each container/truck capacity is assumed to be 20 tons.

Table 1. Estimation of selected perishable goods transport between Europe and Asia in 2015

No	Perishable product types	Europe to Asia				Asia to Europe				Total inland transport value in USD million	Total number of containers /trucks	Value of a container/truck
		Total value in USD million	Total tons	Inland transport in tons	Number of containers / trucks	Total value in USD million	Total tons	Inland transport in tons	Number of containers / trucks			
1	Meat and edible meat offal	\$ 5,030	1,169,767	223,023	11,151	\$ 140	32,558	11,256	563	\$ 1,007	11,714	\$ 86,000
2	Fish and crustaceans, molluscs and other aquatic invertebrates	\$ 3,280	656,000	191,600	9,580	\$ 4,100	820,000	116,200	5,810	\$ 1,539	15,390	\$ 100,000
3	Dairy produce, birds' eggs, natural honey, edible products of animal origin, etc.	\$ 4,390	1,254,286	620,571	31,029	\$ 308	88,000	25,571	1,279	\$ 2,262	32,307	\$ 70,000
4	Vegetable and certain roots and tubers, edible	\$ 1,390	397,143	202,571	10,129	\$ 2,220	634,286	177,714	8,886	\$ 1,331	19,014	\$ 70,000
5	Fruit and nuts, edible, peel of citrus fruit or melons	\$ 1,690	422,500	251,750	12,588	\$ 5,567	1,391,750	542,400	27,120	\$ 3,177	39,708	\$ 80,000
6	Oil seeds, oleaginous fruits, miscellaneous grains, industrial or medicinal plants, straw and fodder, etc.	\$ 1,810	603,333	265,667	13,283	\$ 1,720	573,333	160,000	8,000	\$ 1,277	21,283	\$ 60,000
7	Animal or vegetable fats and oils and their cleavage products, prepared animal fats, animal or vegetable waxes	\$ 4,410	1,470,000	342,733	17,137	\$ 1,550	516,667	236,333	11,817	\$ 1,737	28,953	\$ 60,000
8	Preparations of fruit, vegetables, nuts or other parts of plants	\$ 1,420	405,714	139,429	6,971	\$ 3,040	868,571	209,371	10,469	\$ 1,221	17,440	\$ 70,000
9	Pharmaceutical products	\$ 36,970	1,232,333	268,527	13,426	\$ 6,850	228,333	5,113	256	\$ 8,209	13,682	\$600,000
	Total	\$ 60,390	7,611,077	2,505,871	125,294	\$ 25,495	5,153,499	1,483,960	74,198	\$ 21,760	199,492	

China is the world's largest producer, consumer, and importer of perishable goods, particularly meat. It consumes 28 % of the global meat supply. The monthly import of meat products in China reached USD 1 billion, according to Direct China Chamber of Commerce, a leading data provider of Chinese market, in 2019. Moreover, China cuts tariffs on 859 consumer goods including frozen pork from 1 January 2020. According to Chinese newspaper Xinhua, China will further encourage meat imports, allowing the total to potentially exceed 6 million tons. All those will cause a further increase in perishable goods inland transport between Europe and Asia.

Based on above analysis and UN EATL project report, 2020, OBORTECH has assessed its potential market in Euro-Asian inland transport on perishable products. OBORTECH assumed the total number of inland transported containers/trucks of this market would reach around 411,000 in 2025.⁷ The company is aiming to deliver its services to 5 % of this market by 2025, meaning total

⁷ Assumption by OBORTECH by estimating annual increase of 7.5 % on the volumes since 2015. 7.5 % is an approximate average economic growth rate of main trading partners, according to OBORTECH.

number of container/truck transactions served by OBORTECH would reach around 20,000 in 2025.

Intra-European inland transport:

Market size estimation is done based on Eurostat⁸ numbers on perishable goods transported between internal European countries, in 2018. OBORTECH assumed the total number of inland transported containers/trucks of this market would reach around 8,872,000 in 2025.⁹ The company is aiming to deliver its services to 5 % of this market by 2025, meaning total number of container/truck transactions served by OBORTECH would reach around 443,000 in 2025.

Table 2. Selected perishable goods' intra-Europe inland transport size projection for 2025

Annual growth on volumes	5%	
INDICATORS	2018	2025
Total inland transported tons	126,122,000	177,466,320
Total number of inland transported containers/trucks	6,305,350	8,872,261
Inland transported containers/ trucks served by OBORTECH	-	443,613
OBORTECH's market penetration rate	0.0%	5.0%

Export and import transport of Mongolia:

Mongolia is an immediate big neighbor of China and has a comparative advantage in meat production. The size of the Mongolian herd is approximately 70 million¹⁰, and its livestock herds and domestic meat production have now surged to record amounts, far in excess of domestic demand of 3.3 million people. Already, China has formally expressed interest in importing meat from Mongolia in 2017. Yet the country's meat exports are well below potential, although it has been increasing gradually. For example, one of the biggest meat exporters in the World, New Zealand has a nearly identical numbers of sheep and cattle to Mongolia, yet it annually exports over 1 million tons of meat to 120 different countries¹¹. To tap into this potential, Government of Mongolia is currently designing a reform strategy that will increase Mongolia's meat exports residing in its unique taste, high quality and a low price. To achieve this, the main focus

⁸ A Directorate-General of the European Commission under main responsibilities to provide statistical information to the institutions of the European Union.

⁹ Assumption by OBORTECH by estimating annual increase of 5 % on the volumes since 2018. 5 % is an approximate economic growth rate in Europe, according to OBORTECH analysis.

¹⁰ Mongolia has one of the highest per capita livestock ratios in the world, with 20 heads per person.

¹¹ NEW Zealand's sheep and beef meat exports was USD 9.1 billion in 2019, according to its Meat Industry Association.

areas of improvement are development of logistics infrastructure, better information sharing and control among supply chain actors, according to the World Bank recommendation¹².

Also Mongolia is the second biggest supplier of cashmere to international market and OBORTECH is planning to provide its services to processed cashmere export transportation from Mongolia. Moreover, Mongolia is also rich for its copper, gold and coal resources, and has worth of US\$ 2.75 trillion untapped mineral wealth¹³. As export transport logistics of those commodities need immediate improvement, OBORTECH is planning to provide its services to copper and coal mining export sectors, which are the biggest in export volumes. In terms of import transportation, OBORTECH will work with pharmaceutical product importers, which is one of the highest volume among imported perishable goods and take longer distance transportation.

The company is aiming to serve 30 %, 10 %, 60 %, 30 % of copper, coal, meat, and cashmere exports and 30 % of pharmaceutical product import markets, meaning total number of container/truck transactions served by OBORTECH would reach around 184,000 in 2025. See Appendix 1 for the detailed projection by different markets. Currently, there is no equating competitors to OBORTECH's service in Mongolia and exporters/importers of those goods are in an immediate need of smart logistics solution.

Customers

A targeted segment of paid customers are exporters/sellers, importers/buyers, freight forwarders/3PLs/transporters who in demand of one-stop smart logistics and supply chain solution. Once the blockchain based trusted network established among those participants, a paid access to the Smart hub will be offered to financial institutions. For promoting the ecosystem, regulators(governmental agencies and chamber of commerces), ports/terminals, and end-users will have free access to the Smart hub.

Below are benefits to various customers when using the Smart hub:

Exporters/sellers and importers/buyers will have unified and real-time source of visibility on shipment process and cargo quality during transportation. This will greatly reduce dispute caused by inconsistent and late data sharing. As a result, trust between parties will be strengthened, meaning more trade volumes with accurate quality assurance.

Freight forwarders and transporters will have a better logistics management tool based on reliable and up-to-date information. It will increase their operational efficiencies, cutting unnecessary costs. Moreover, with instant access to information and AI tools, they can greatly reduce works and time required to respond client enquiries and document processing between

¹² World Bank Points to Key Ways to Enhance Mongolia's Agricultural Value Chains and Make Exports More Diverse and Competitive. May 29, 2019.

¹³ Unearthing Mongolia's Mineral Riches. Forbes.

regulators, banks, insurance companies. With improved efficiency, their cargo turnover times will be increased, meaning more profit with less operational cost.

Financial institutions involved in trade finance such as banks and insurance firms will have access to enhanced and reliable records based on blockchain. Using the smart contract technology of blockchain and automating transactions, financial institutions can process payments and documents at faster speed with better risk analysis.

Regulators and ports will simplify and optimize their process between clients without external cost. With improved visibility on cargo movements, regulators and ports will have accurate planning and better risk management on incoming traffic.

End-users will be better informed to filter out counterfeit or spoiled products based on transparent and reliable visibility of supply chain and provenance data.

7. COMPETITION ANALYSIS

Competitive advantages

OBORTECH's competitive advantages in terms of creating new opportunities to SME participants of inland transportation supply chain are:

- Location and market knowledge
As OBORTECH's founders include experienced freight forwarders to China and Europe, the company has in-depth knowledge of its target market including its constraints and opportunities. Being the front runner, the project has set up partnerships with government organizations and transportation companies in Mongolia, which is a midpoint location for Euro-Asian inland transport. Moreover, inland transportation route from Europe through Mongolia is the shortest route to the biggest importing/exporting country in Asia, which is China. As of now, the project has offices in Estonia and Mongolia, established partnerships in the Netherlands, Australia and Mongolia, and is discussing partnerships with companies in Estonia and Germany.
- Scalability (a network effect)
A focus of OBORTECH's innovation is to build a trusted network for various players to interact with each other. The Smart hub is capable to expand market and acquire more customers without being hampered by its structure or available resources when faced with increased demand. Similar to other systems such as Facebook or Wechat, once the Smart hub is joined by initial participants, they would become anchors to involve others to the network. The Smart hub is designed the way that outsiders have to join the hub to be able to communicate with its users, which will create a snowball effect.

- Switching costs
As the Smart hub is capable to handle and store business data and transaction histories of as many participants as available on a secure and trusted platform, data gathered can be utilized for further business analytics and interactions. As more players join the network, useful big data would be created to its participants saving their time and cost. Thus, once joined, the network members wouldn't easily switch into other platforms to re-learn the experience.

Comparative matrix

Currently, OBORTECH doesn't have direct competitors in its initial market to take off –Mongolia. The following are the company's competitive advantages in terms of solving existing problems of legacy systems.

Table 3. OBORTECH's competitive advantages over legacy systems

Functions	OBORTECH	Legacy systems
<i>Tracking and monitoring</i>	Track and monitor location, sealing, temperature, humidity, and shock of consignment in real-time throughout the shipment.	Only track location and sealing of consignment several times at specific points throughout the shipment.
<i>Access to data</i>	From anywhere and anytime via cloud-based web and mobile applications, and APIs.	From designated locations via in-house local system.
<i>Information flow</i>	Unified single source with consistent formats.	Scattered in different sources and formats.
<i>Data management</i>	Digital and tamper-proof with permissioned access.	Paper based and manually stored.
<i>Data usability</i>	Open to Smart contract and Big data analytics.	Incapable for automation and efficient analytics.

Moreover, even if the company's Smart hub is compared with the other established players of smart logistics supply chain, it still has the following advantageous feature:

Table 4. Comparative matrix of OBORTECH verses other platforms

Features	Names of the platforms			
	OBORTECH	DataPorts	TradeLens	Traxens
<i>Ease of use</i>				
One-stop data/document exchange and real-time shipment location and condition tracking solution underpinned by	Yes	No	No	No

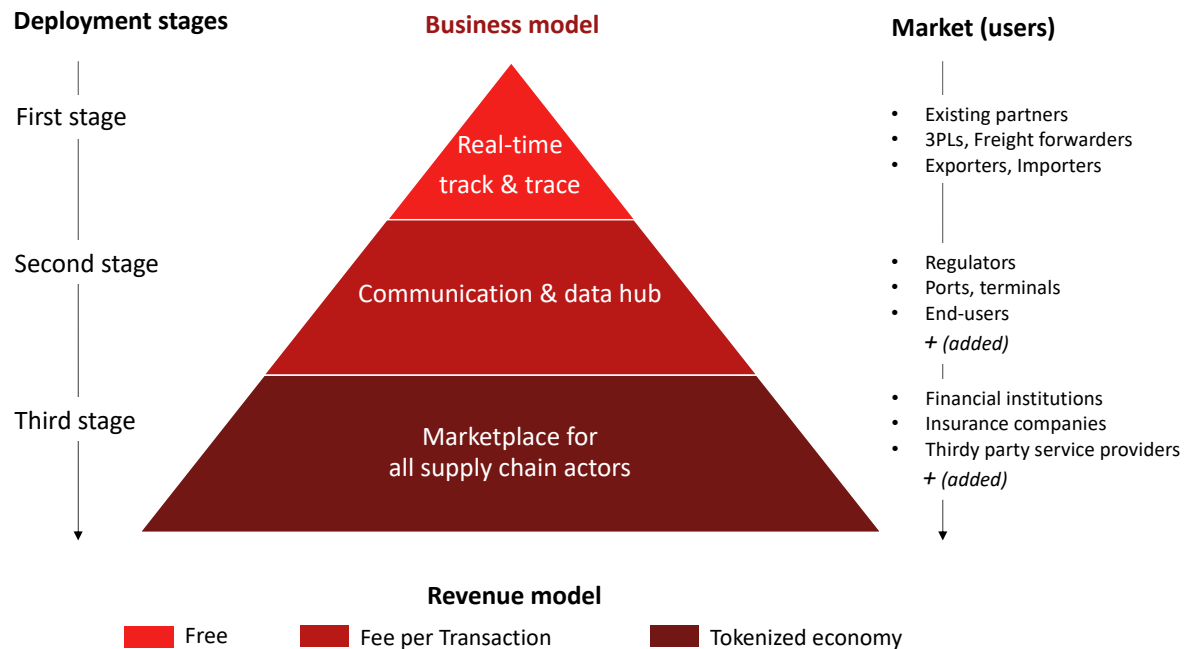
blockchain and IoT from a single platform tailored to SMEs				
A potential option to pay for any service offered by the platform using a digital token – it is instant and easier than traditional payment systems once settled.	Yes	No	No	No
Features				
A marketplace for the platform members to promote their services and products to other members or external visitors based on automatic scoring & verification system built from trusted data and transaction history on blockchain.	Yes	No	No	No
A potential tokenized digital payment ecosystem for instant transactions in purchasing and exchanging services, rewarding and donating other members within the marketplace.	Yes	No	No	No
Location				
Strong presence in export/import logistics market in economic corridor of Europe-Mongolia-China	Yes	No	No	No

8. COMMERCIALIZATION STRATEGY

The commercialization will be done in 3 stages due to consumer demands and interests in the solution.

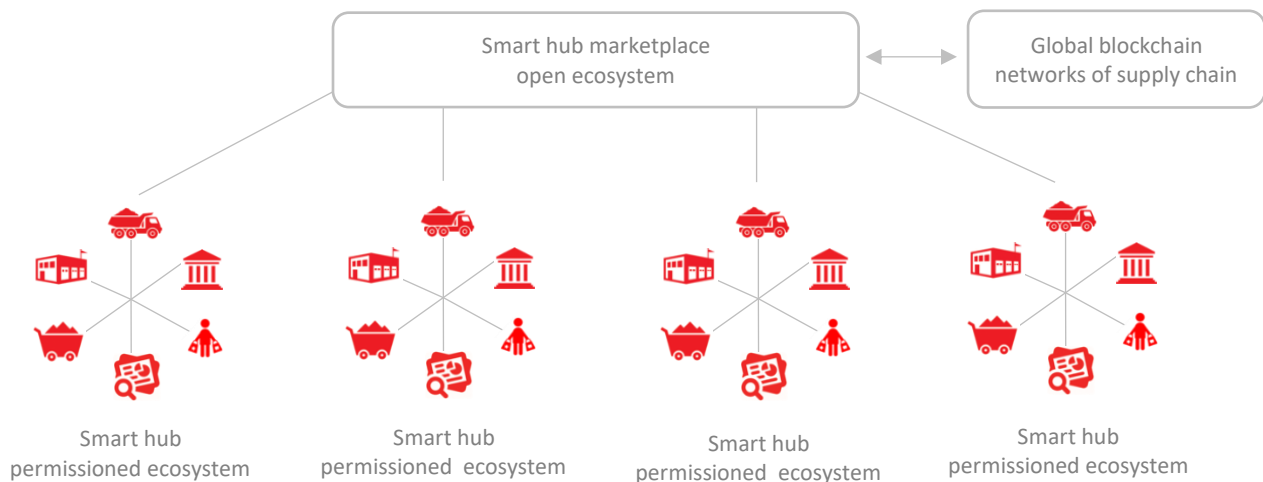
- First stage: According to the consultation with early partners, interests in and demands for real-time track and trace of a shipment were high and immediate. Thus, the project will deliver first a simple and one-stop solution for a real-time track and trace platform for free of charge.
- Second stage: Once the network of various stakeholders in the supply chain process is built, the platform's communication and data hub on blockchain based shipment event and document exchange will create more value among the network members. At this stage, a fee is charged for a Transaction model. See *Revenue model* section.
- Third stage: Once the network is fully-grown and sufficient data is gathered, the platform will transform into a marketplace of various services and communications for all supply chain participants. "A social network" for supply chain is built. Furthermore, a Token-Driven Economy will be introduced to the marketplace participants in exchanging services and promoting their contract performances via the Smart hub.

Picture 12. Deployment stages



Each actor in supply chain has its own ecosystem of network. For instance, any Freight forwarder/3PL has network of clients including exporters/sellers and importers/buyers. Whereas, exporters/sellers or importers/buyers have partner networks of transporters and 3PLs. Similarly, ports and terminals have their own communities as well. If the Smart hub is successfully adopted by one of the actors in supply chain, that actor can spread the Smart hub to other players in that supply chain. Thus, OBORTECH will take partner-driven approach for the promotion of its business. In each supply chain ecosystem, the project will select anchor or champion partner to promote the network, attract potential clients, and the Smart hub adoption there. A revenue sharing model will be offered to anchor partners.

Picture 13. Smart hub network of supply chain ecosystems



9. REVENUE MODEL & KPI

The main revenue is from the company's service per Transaction to clients. Transaction fee is charged as a bundle price for accessing information and exchanging data on each container/truck shipment tracked over the Smart hub. It includes the following services:

- Blockchain and cloud powered communication hub
- Tamper-proof, unified and online document exchange
- IoT based real-time visibility and tracking
- Open and decentralized networking marketplace

Paid users to Transaction would be exporters/sellers, importers/buyers, freight forwarders, 3PLs, transporters, financial institutions, and insurance firms. Participant number per each Transaction will increase year by year as the Smart hub network expands. See Table 6.

Regulators(governmental agencies and chamber of commerces), ports/terminals, and end-users will have free access to the Smart hub to promote the ecosystem.

Paid users

Paid users are grouped into up to five categories as exporters/sellers, importers/buyers, freight forwarders/3PLs, insurance firms, and financial institutions.

Table 5. Paid users would join the Smart hub for accessing each Transaction

No	Category of participants	2021	2022	2023	2024	2025
1	Exporters/Sellers	√	√	√	√	√
2	Freight forwarders/3PLs	√	√	√	√	√
3	Importers/Buyers		√	√	√	√
4	Insurance firms			√	√	√
5	Financial institutions				√	√

Cost savings

There are the following cost benefits to result from implementing the Smart hub for exporters/sellers, importers/buyers, and freight forwarders/3PLs/transporters:

- Saving from reduction in number of conflicting records (i.e., invoice, shipping document) and cost to resolve a dispute over a record,
- Saving from reduction in cost to process a record,

- Savings from reduced transportation time due to real-time visibility and information exchange,
- Savings from inventory loss avoidance due to real-time tracking and visibility, and
- Savings from replacing additional task of legacy systems with the Smart hub.

The table below estimates cost savings per each Transaction. The calculation is based on Forrester Consulting study, 2018, which was commissioned by IBM to conduct potential benefits enterprises may realize by deploying a Blockchain Platform and Services solution.

Table 6. Cost savings per each Transaction

No	Savings	Saved amounts
1	Savings from reduction in conflicting records	
	Percentage of conflicting records ¹⁴	5%
	Number of conflicting records	0.05
	Average cost to resolve a dispute	\$ 200
	Reduction in conflicting records	100%
	<i>Savings due to reduction in conflicting records</i>	<i>\$ 10</i>
2	Savings from reduction in record processing cost	
	Average cost for record processing	\$ 20
	Reduction in cost per record	25%
	<i>Savings due to reduction in cost of records processing¹⁵</i>	<i>\$ 5</i>
3	Savings from reduced transportation time	
	Transportation cost per container/truck ¹⁶	\$ 700
	Percentage reduction in transportation time	10%
	<i>Cost saving from reduction in transit time¹⁷</i>	<i>\$ 70</i>
4	Savings from inventory loss avoidance	
	Value per transported container/truck perishable product	\$ 60,000
	Percentage of spoilage loss	1%
	Percentage of reduction in spoilage loss ¹⁸	50%
	<i>Savings due to reduction in inventory loss</i>	<i>\$ 300</i>

¹⁴ According to DHL study, it is even more - current industry estimates indicate that 10% of all freight invoices contain inaccurate data which leads to disputes as well as many other process inefficiencies in the logistics industry.

¹⁵ The numbers are based on Forrester study.

¹⁶ Transportation cost of 20ft container from Europe to Asia by MOVERDB.COM.

¹⁷ A leading Pharma company evidenced that by tracking in real-time, they were not only able to secure their sensitive packages better, but also use the data to help with improved ETA predictability, and a 50 % reduction in shipment delays.

¹⁸ Savings from inventory loss avoidance by shortening the time to get through the supply chain, or by identifying the specific freight shipments that may be spoiled or otherwise contaminated during a recall. According to Connecting Food, the Food Transparency Blockchain, 67 % of the world's food waste takes place before a product even arrives in store.

5	Savings from reduced capital expenditure	
	Cost of additional task of Legacy system handling <i>7000 transactions</i> ¹⁹	\$ 100,000
	<i>Software license savings per transaction</i>	\$ 14.3
	Total savings	\$ 399

Moreover, the Smart hub is possible to be used by restaurants and food places on validation and provenance of organic food they serve to their customers (end-users). A price of this service of the Smart hub isn't analyzed due to insufficient information of calculating cost savings and value creations of these participants at the time of writing this document.

Key performance indicators

A key performance indicator (KPI) and sales metric (SM) of the project is a number of Transactions multiplied by a number of Participants Per Transaction and a price per Transaction in 6 months basis.

Calculating key KPI and SM:

(#) Transactions x (#) Participants Per Transaction x (USD) a price per Transaction.

*Transaction is a turnaround of a single container/truck tracked over the Smart hub for a single shipment

*Participants Per Transaction is paid users of the Smart hub that accessed each Transaction.

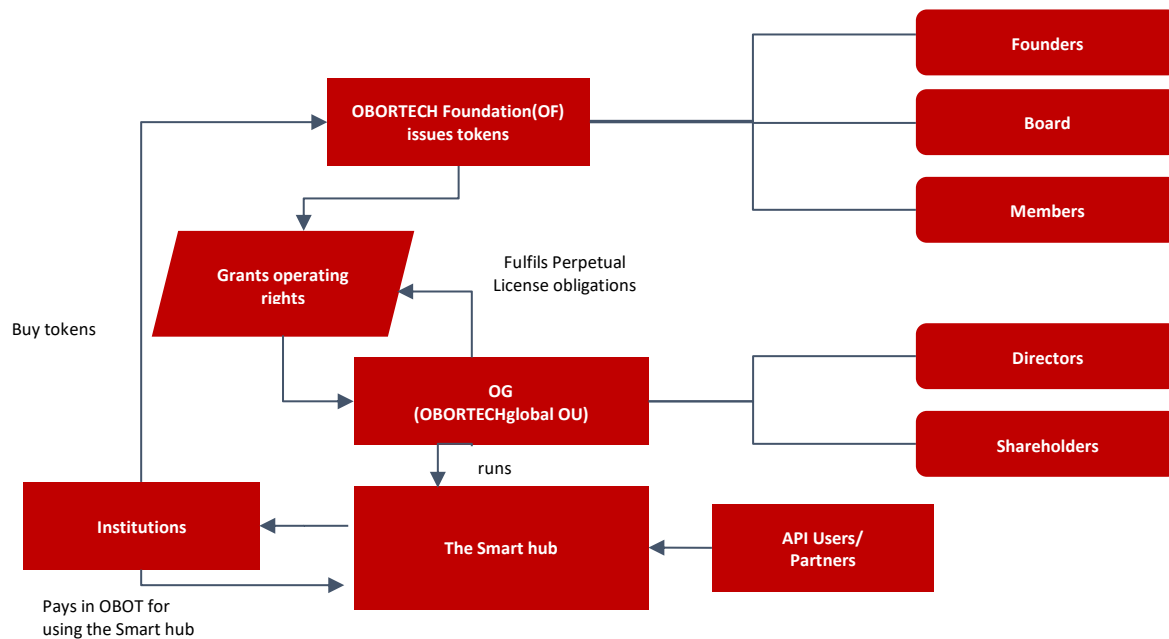
10. TOKENIZATION

Foundation structure

The OBORTECH Foundation (OF) generates 300,000,000 OBORTECH Tokens(OBOT) and grants OBORTECHglobal OU(OG) the operating license for monetizing the Smart hub. OF forms a board with 2 members of OG and 3 members from membership organizations/lead investors whose representation rotates every 3 years. OF Board sets price of membership in OF and governs the Smart hub transaction values. OF will use money raised from OBOT sale to, amongst other things, scale the Smart hub, build specific algorithms, custom script engines, validate new members, offer the Smart hub services, etc. OF grants the OG exclusive use of the Smart hub and the rights to use OBORTECH project brand. The transaction fees or loyalty rewards are distributed in OBOT tokens.

¹⁹ Cost is based on Forrester study.

Picture 14. Foundation structure



Token usage

Paying Transaction fee of the Smart hub:

OBOT token will be used for paying Transaction fee of the Smart hub on bundled services:

1. Blockchain and cloud powered communication hub,
2. Tamper-proof, unified and online document exchange,
3. IoT based real-time visibility and tracking,
4. Open and decentralized networking marketplace.

Every basic transaction, paid for in OBOT is split in the following ways:

- 70 % to OBORTECHglobal OU as a Network Admin fee,
- 10 % to marketing pool,
- 10 % to a User Growth Pool to incentivize onboarding of new users,
- 5 % returned to OBORTECH Foundation for Non-Profit/CSR Activities,
- 5 % is used for market making(buy back and token burns) to increase investor trust.

Contract bonus:

Besides the Transaction payment, OBOT token can be used for promoting contract performances between the Smart hub users. For instance, users collaborating via the Smart hub can convert some portion of their contract funding into OBOT tokens and allocate them in Escrow Contract

as a bonus payment. When one side performs its task well and meets certain extra conditions of the Smart contract, the escrowed tokens will be released as a bonus payment. Examples of extra conditions of the Smart contract:

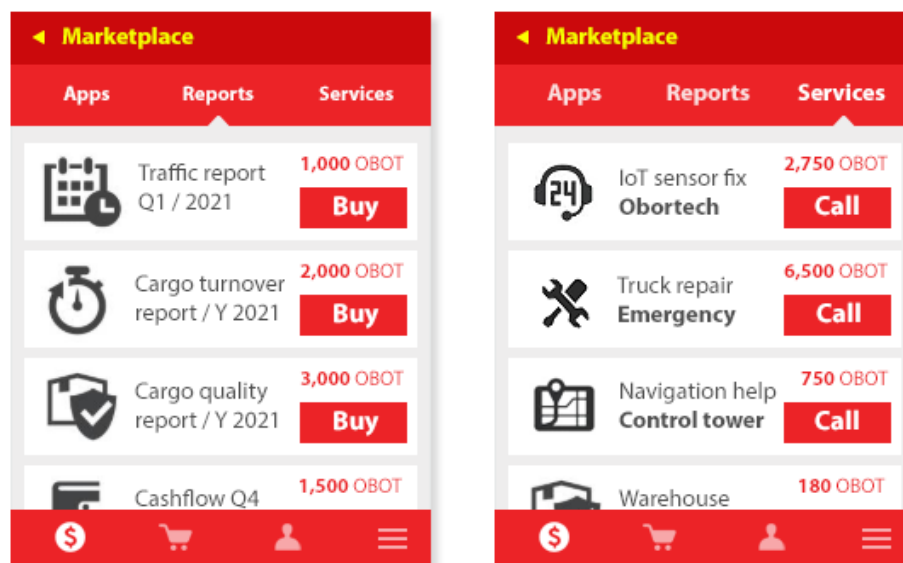
- an express delivery of products and services;
- a well care of sensitive products for temperature, humidity, and shocks during shipments;
- a fulfillment of certain volumes of product supplies in certain time intervals;
- a good handling of unexpected problems in supply chain process;

and other various conditions set by the users.

Exchanging services in the marketplace:

Additionally, OBOT token will be used in the Smart hub marketplace when its members exchange services among them. The Smart hub marketplace is a blockchain based decentralized ecosystem that enables buying, selling and exchanging of services without the need of intermediaries among the Smart hub users. All the function of the marketplace will be governed by the Smart contracts.

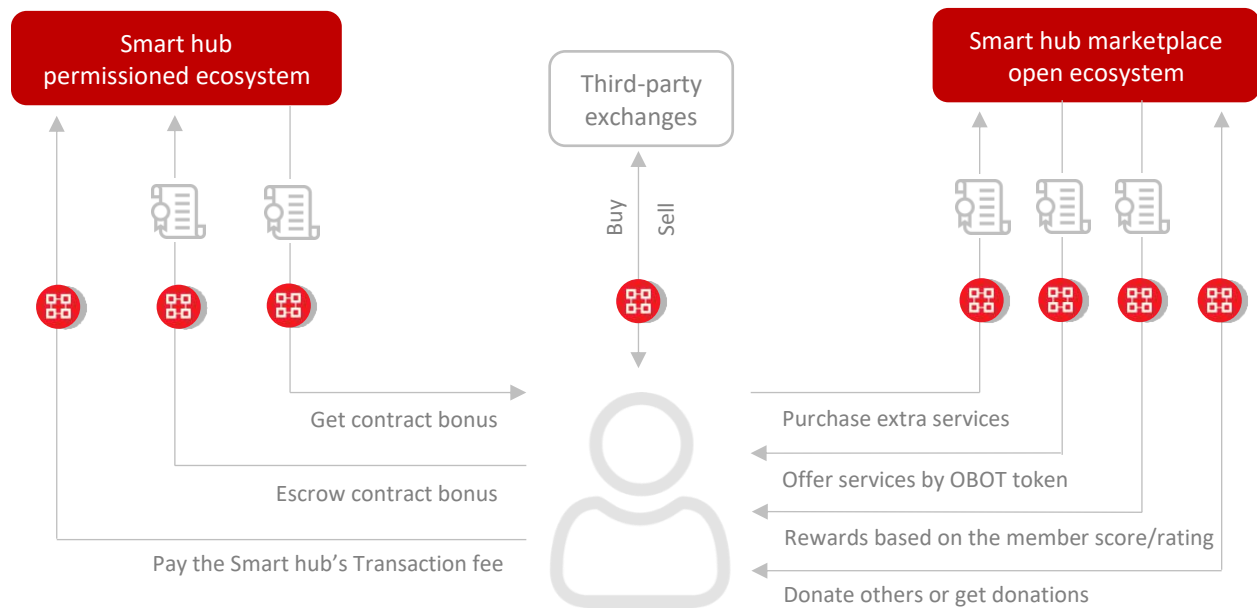
Picture 15. Marketplace services (demo)



Rewards by user score/rating in the marketplace:

The marketplace members will also be rewarded by OBOT tokens based on their score/rating in the marketplace. Verified members of the marketplace will be scored/rated by various ways based on blockchain data and performance histories on the Smart hub platform. For instance, shipment and contract performance histories, active participation and response rate on event/document exchange activities, and satisfied client reviews all positively impact the member scores. Conversely, poor performance and inactive participation in the Smart hub will downgrade the member scores.

Picture 16. OBOT token circulation in the Smart hub



Deflationary token

- OBOT token Price(P_t^b) increase can be derived from a simple empirical formula (as mentioned on a right hand side), where:

- P_t^b is the price level. This is the weighted average price of goods and services in terms of OBOT token b per unit time at time t .
- M^b is the total coin supply of token b (OBOT token).
- V_t^b is the velocity of money: i.e., the average number of times that OBOT token changes hands per unit time, at time t .
- T_t^b is the available circulating token supply in market.

$$P_t^b T_t^b = M^b V_t^b$$

- So as our circulating supply decrease due to token burn.

$$P_t^b = (M^b * V_t^b) / T_t^b$$

Price P_t^b organically increases.

11. TOKEN SALE

The offering

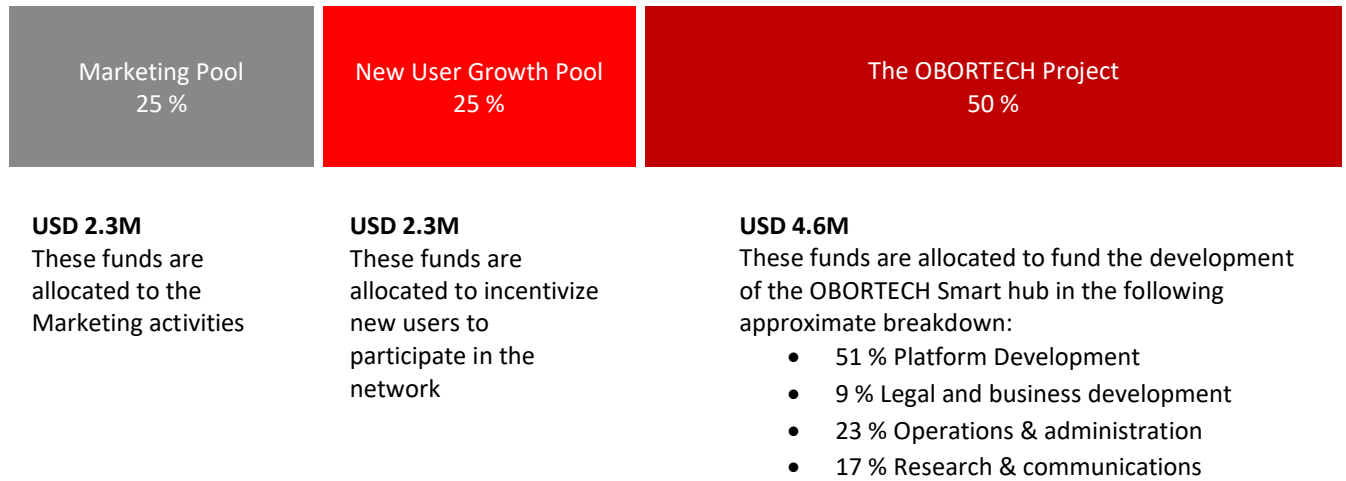
The OBORTECH Foundation will raise initial funds to build the infrastructure and scale the Smart hub through a private placement of OBOT tokens with SAFTs.

	Price per OBOT	Number of OBOT tokens issuable pursuant to SAFTs	Proceeds if offering fully subscribed
Early Investor Sale	\$0.0080	25,000,000	\$200,000
Private Placement	\$0.0200	75,000,000	\$1,500,000
ILO (IDO - IEO)	\$0.0750	100,000,000	\$7,500,000
Total		200,000,000	\$9,200,000

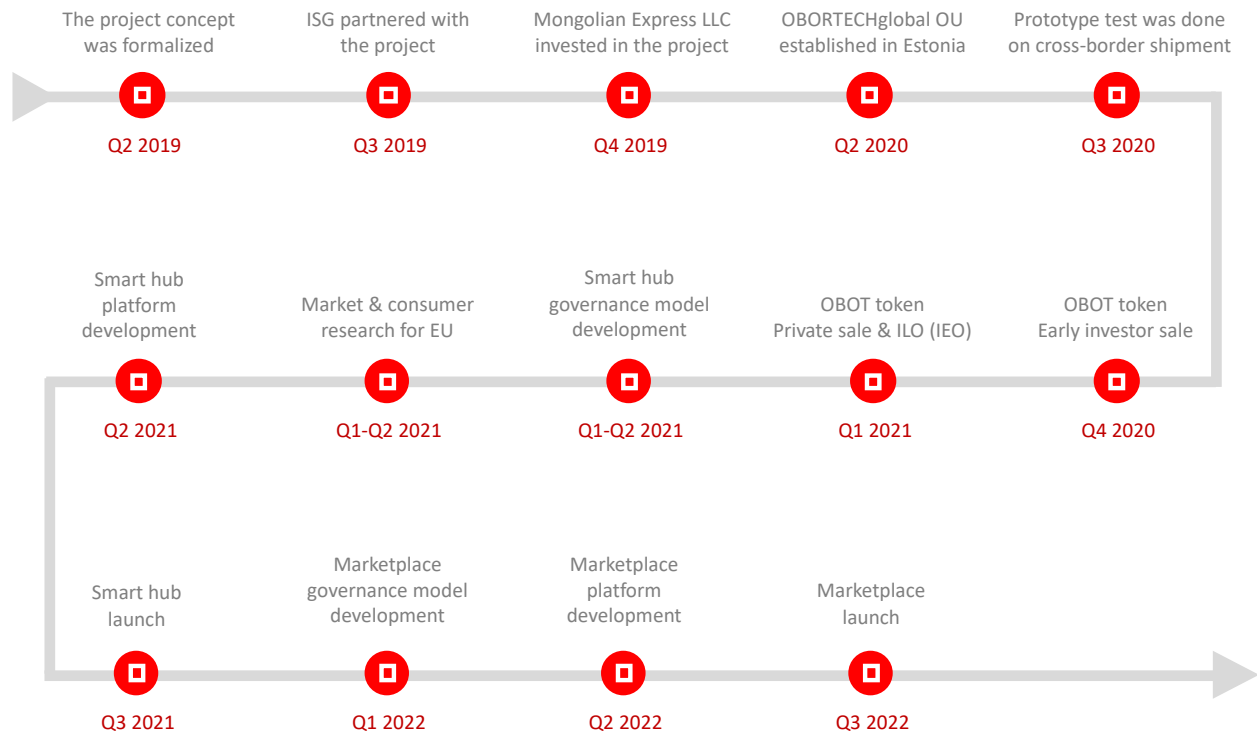
Token distribution

25,000,000	OBOT	Maximum over allotment to be issuable pursuant to SAFTs in early Investor Sale.	Prior to the Smart hub launch
75,000,000	OBOT	Maximum over allotment to be issuable in Private Placement.	Prior to the Smart hub launch
100,000,000	OBOT	Public Offering via ILO.	Prior to the Smart hub launch, 2 year vesting (25 % release every 6 months)
60,000,000	OBOT	To be issued to founders and initiators of OBORTECH global OU.	Prior to the Smart hub launch, 2 year vesting (25 % release every 6 months)
10,000,000	OBOT	To be issued to executive management on or after the launch of the Smart hub, escrowed for 24 months.	On the Smart hub launch, 4 year vesting
30,000,000	OBOT	Reserved for the OBORTECH global OU for future operations.	On the Smart hub launch, No Vesting
300,000,000	Max supply of OBOT tokens		

Deployment of capital



12. ROAD MAP



13. RISK ANALYSIS

Table 7. Risks and mitigation measures (risk assessment: 1 is the lowest and 5 is the highest)

N.	Risk name	Risk description	Severity	Probability	Risk Type	Mitigation
1	Development risk	The risk that development of the Smart hub is not completed on time, within budget or to defined specifications	3	2	Low	The company has a detailed development plan with clear monitoring methods. The company management is experienced in project management and development. The company hired well experienced developers worked on similar projects before. Additionally, risk adjustment, contingency of 25 percent is included in all financial calculations and projections.
2	Product risk	The risk that the Smart hub design does not meet the required performance and standard.	4	2	Low	The team will utilize industry accepted technologies and standards when developing the Smart hub. All the core technologies and their suppliers(blockchain open-source, IoT sensors, cloud servers) are well known and highly accepted by the industry.
3	Scaling risk	The risk that the project is unable to scale on a timely basis and at levels required	4	3	Medium	The Smart hub is designed for easy to join and simple to use principles for quick adoption. Besides, the Smart hub will offer tailored services suited to local conditions, and the adoption and marketing will be led by regional anchors and champion partners who well know their local markets.
4	Competition risk	The risk that the other businesses come with the same product to the target market	4	4	High	Currently, the company doesn't have direct competitors in its country to take off, Mongolia. The company will take agile and consumer centric approach and frequently analyse the market competition throughout the project life-cycle. Once the expected network of the Smart hub is established, it won't be easily beaten by competitors since the business model is based on a network effect.
5	Team risk	The risk that members leave the team	4	2	Low	Core team members are shareholders of the project. In case someone leaves, the company will source talented and skillful experts from global talent networks (Toptal.com, Angel.co, LinkedIn.com, etc.)
6	Funding risk	The risk that funding will not be available at a level or timing required for the startup to succeed	5	4	High	The project team is experienced in various aspects of project funding/investment and is working with different fundraising experts and partners globally.

7	Data security & privacy risk	The risk that sensitive data of users on the Smart hub is lost or stolen	4	2	Low	The data storage and management will be done on highly secure cloud servers and encrypted by industry accepted blockchain technology. Additionally, the Smart hub users themselves will have full control of their data and manage its access points. The company will do periodic IT security audits on the Smart hub by third party audits and acquire IT security certifications and standards.
8	Regulatory risk	The risk that not favorable legislative and policy environments limit adoption of the innovation.	4	3	Medium	When designing the Smart hub, the team avoided complex functions and structures violating existing regulatory frameworks and focused on common global data standards and designs for easy integration. Additionally, the technical approach is based on trending new technologies being embraced by the industry.

14. PARTNERS AND TEAM

Strategic partners

- **Intermodal Solutions Group (ISG)**
ISG is a global company supplying next-generation container rotation system for the mining, grain and ship loading industries. It operates in twelve countries and has a wide network of blue-chip client base. The Smart hub will be introduced to it's clients as a smart technology element for a complete smart container solution.
- **Mongolian Express LLC and Mongolian Transport Corporation**
Those are two of the biggest logistic companies in Mongolia. Those have partner networks in freight forwarding and transportation fields in Europe and Asia. The Smart hub will be introduced to their client and partner networks along with their logistics services. The management of Mongolian Express LLC invested in the project and became the shareholder.
- **Dutch Mongolian Trade Office (DMTO)**
DMTO is a key trade office managing trade between the Netherlands and Mongolia. DMTO works with numerous logistics and freight forwarding companies and exporters/importers in the Netherlands and Mongolia. DMTO expressed its interest to introduce the Smart hub into its partner network once its fully developed.
- **Mongolian Customs Office, Ministry of Food, Agriculture and Light Industry of Mongolia, and Mongolian Agricultural Commodity Exchange** all expressed their interest to support the

project and integrate the Smart hub with their single window and tracking systems. These government entities have nation-wide network and database on all export traffics from Mongolia.

Team members

- **Tamir Baasanjav, CEO and Founder**



He is specialized in project management and strategic communication. He had worked in managerial and expert positions of prestigious international development, government and business organizations such as an agency funded by Government of the United States for transportation and energy efficiency fields, Knowledge Hub project of Swiss Agency for Development and Cooperation on sustainable mining, and the biggest corporate bank of Mongolia. He also has 10 years of experience in UX and product designs. He won the global product design contest held by Adidas.

Role in the project: He designed the Smart hub concept and its business strategy. He manages the project and leads the product design and marketing/communication.

- **Enkhbat Dorjsuren, Logistics lead and Co-founder**



He has 20 years of experience in logistics and transportation sector. He is a CEO of Mongolian Express LLC, one of the largest inland transport and logistic companies in Mongolia. He has extensive network in Mongolian transportation and logistics sector.

Role in the project: He established the project's partnerships in the transportation sector and leads partnership development in Mongolia and Euro-Asia.

- **Tungalag Sukhbat CFA, CFO**



She is a finance and investment professional more than 20 years of experience. She has worked in different domains including strategic and financial consulting, central banking, corporate banking, asset management, and multilateral development programs in managerial and expert positions. She achieved CFA Charter in the UK and a member of the CFA Institute. Moreover, she is a Certified Business Appraiser of Mongolia.

Role in the project: She developed the business plan as well as financial modelling and analysis of the project. She leads financial management and analysis of the project.

- **Zoljargal Dashnyam, Chief Counsel**



She has extensive experience in corporate law and private equity. Her portfolio of clients includes investment banks, multinationals, mining companies, and investment funds. She graduated Harvard Law School in Master of Laws. She is a Senior Partner of the leading law firm in Mongolia, DB>S LLP.

Role in the project: She is in charge of the governance model development of the network and legal activities of the project.

- **Alok Gupta, Blockchain architect**



He is a certified blockchain developer with over 12 years of experience in application development and deep knowledge of Hyperledger Fabric architecture and functionalities. He was in top 5% of Blockchain Architecture Design course conducted by IBM and IIT, a top technology institute in India. He developed various blockchain projects and applications in supply chain, real estate registry, health insurance, etc.

Role in the project: He developed the blockchain architecture and application of the prototype system. He leads the blockchain (Hyperledger) architecture and application development of the project.

- **Vinshu Gupta, Tokenomics lead**



He is a blockchain expert based in Silicon Valley. He helped over 10 blockchain projects totally raised over 100M USD. He has 7 years of experience in blockchain domain and worked for Emirates National Bank of Dubai, Xinfen, PWC, Sopra Steria, etc.

Role in the project: He developed the tokenomics model and Ethereum smart contract of the project. He leads the tokenomics and Ethereum blockchain development of the project.

- **Mauro Andriotto, Adviser**



He is internationally recognized as one of the leader in blockchain and Security Token Offering (STO). He is a professor of Corporate Finance and University of Geneve – UBIS. He is an Independent Expert at the European Commission for Horizon 2020 where he approves public grants for startups. He is also the former quantitative leader at EY for the South Europe area. He advises the project on European market and fundraising.

- **Garry Pinder, Adviser**



He is a Managing Director of Intermodal Solutions Group (ISG). ISG is a global company supplying container rotation systems for the mining, grain and ship loading industries. It operates in 12 countries and wide network of client base in South American region. He advises the project on South American market of containerized transportation of agricultural and mining products.

- **Ulf Henning Richter, Adviser**



He specialized in logistics and infrastructure technologies of Europe, China, and Africa regions. He is a member of China Highway & Transportation Society. He is also a Chairman of LUKOIL, Hong Kong branch. He advises the project in partnership development in China.

- **Additional staff to be hired**

Additional staff such as experts on IoT, AI, and Big Data technologies, UX/UI design, marketing, logistics and supply chain data standards will be hired based on “best value-for-money” principles through online job markets (Toptal.com, Angel.co, Upwork.com, Linkedin.com, etc.).

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Appendix 1 - Mongolia's export transportation projection of selected products for 2025

Products	2019	2025
<i>Copper concentrate export</i>		
Annual total export in tons	1,403,600	3,560,800
Number of transported containers/ trucks	46,787	118,693
Inland transported containers/ trucks served by OBORTECH		35,608
OBORTECH's market penetration rate	0%	30%
<i>Coal</i>		
Annual growth in total export	3%	
Annual total export in tons	36,466,763	43,543,222
Number of transported containers/ trucks	1,215,559	1,451,441
Inland transported containers/ trucks served by OBORTECH		145,144
OBORTECH's market penetration rate	0%	10%
<i>Meat export</i>		
Annual growth in total export	10%	
Annual total export in tons	37,900	67,142
Number of transported containers/ trucks	1,895	3,357
Inland transported containers/ trucks served by OBORTECH		2,014
OBORTECH's market penetration rate	0%	60%
<i>Cashmere (processed)</i>		
Annual growth in total export	5%	
Annual total export in tons	6,200	8,309
Number of transported containers/ trucks	310	415
Inland transported containers/ trucks served by OBORTECH		125
OBORTECH's market penetration rate	0%	30%
<i>Pharmaceutical products</i>		
Annual growth in total export	3%	
Annual total export in tons	93,621	111,789
Number of transported containers/ trucks	3,121	3,726
Inland transported containers/ trucks served by OBORTECH		1,118
OBORTECH's market penetration rate	0%	30%