



OPEN PACKAGING NETWORK
LIGHTPAPER

THE PROBLEMS:

The packaging industry has been a hot bed for many problems. Since there are many actors involved in the ecosystem, it naturally leads to a lot of complications and challenges. The packaging industry is in the end a huge supply chain and as with every supply chain, it has few similar and unique problems. Some of the major problems have been listed below:

a. Demand Forecasting for Sellers:

Sellers are always unsure about the demand. The problem arises when the buyers want their orders delivered as soon as possible, also called as "hot parts". But, on the flip side, the buyers complain that the suppliers never deliver the product on time. Thus, there definitely is a gap that can be filled.

b. Quality and Accuracy:

The quality of shipments is one another important aspect of any supplier-buyer relationship. Unless the products delivered are of high quality, the relationship won't last long. Damaged products or incorrect products are a pain to the buyers as they lose precious time on waiting up for the right product. Since time is money, the time spent is equivalent to business losses both for buyers and suppliers. Hence, it is of utmost importance that the supplier delivers his goods on time to the buyer. Although quality is one aspect the suppliers need to concentrate on, they cannot afford to forget the timeliness of the product delivery. If the products that are delivered are of good quality but not delivered on time, it leads to a loss of precious time to the buyer and subsequently business, to the supplier. Hence, keeping very low or acceptable lead times is very necessary for any transaction.

c. Payment Issues:

The backbone of every business transaction is the financial transaction that happens before or after the goods are delivered from the producer to the buyer. Normally, the buyer wants to stretch the payments for a longer duration to improve his cash flow. Bigger buyers will likely have

more bargaining power in this matter. However, this is a disadvantage for a tiny supplier since he will be devoid of cash for a long period of time. Also, there are issues sometimes raised by buyers that the invoices sent by the suppliers are not complete and that they are not sent on time.

d. Transparency and Trust:

One of the major problems that a manufacturing company faces with sellers and other intermediaries in the network is that they do not have complete transparency of the other firm's working. Hence, the sellers must rely on whatever limited data that is available to them to make strategic decisions. However, these "hidden actions", the ones that the companies don't have an insight into might have major implications for their business.

It is also difficult for the entire supply chain to profit when there is information asymmetry. This information asymmetry leads to trust issues among the actors who suspect that the other actor might use the data for his own advantage rather than for the benefit of the entire ecosystem.

For example: If a distributor is getting better incentives from another seller, he will push the other product more than yours and since it is his business, he is not obliged to reveal these details to you, leading to poor business performance.

e. Low Credit Facilities:

With advancements in technology, it has become imperative for manufacturing companies to get along with time and introduce new methods of manufacturing to stay alive in business. Unfortunately, not many businesses have the financial foothold to acquire these new machines due to their steep costs. Most of the times, without assets as collaterals, these SMBs might fail to secure a loan from the bank. Also, even if a loan is secured, it is done through a lot of paperwork which consumes a lot of time as well as natural resources. Hence, an effective way to solve this issue is yet to be found on the horizon.

f. Sustainable Packaging:

With packaging come its perils. Packaging industry has been under fire from a lot of non-profit organizations in the U.S who released a "Plastics BAN (Better Alternatives Now) List" in support of California's 67 ban on carry-out plastics. Additionally, new technologies like 3D-forming for paper packaging is adding pressure on the packaging industries to transform into a more sustainable one. Not just in U.S but also in the EU, many regulations have been put in place. There are more than 33 sustainability and environmental protection directives, regulations, targets and programs in the EU alone that is impacting on packaging. The focus is to improve the benefits to the environment by prevention of product damage, deterioration, food spoilage and waste.

Life cycle analysis has become an important factor to evaluate and compare the environmental impact of different products. This will include calculations for the use of different packaging types and includes the below factors:

- Emissions to air and water, including carbon dioxide
- Energy consumed
- Water consumed
- Disposal methods/recovery rates.

Also, the packaging waste in Europe is governed by the Packaging and Packaging Waste Directives 94/62/EC as amended by directive 2004/12/EC. This covers all the packaging placed on the EU market and all the packaging waste. The directive also mentions target figures for recycling for EU member states to be in compliance with its objectives.

g. Prices of Raw Materials:

Major raw material prices comprise more than half of the total cost base of the packaging seller. Thus, any fluctuations in the raw material prices is bound to have a huge impact on the business. Commodity raw material prices are dependent on the global energy prices and supply capacity, which change frequently. Supply can fluctuate with global economy, regional weather conditions and many other factors. Therefore, it becomes a challenge to maintain a balance between the security of supply and low pricing volatility. Price advantages can be gained through market knowledge and better deals.

h. Packaging Design:

Packages that cannot be opened, non-interactive design and the products that don't connect emotionally with the consumers are the problems with packaging design today. New innovations and rising competition has led to some developments in the recent years.

Some of them are:

- Convenience features such as resealable packs, easy-opening and stand-up pouches.
- Smaller pack sizes for single-serving and on-the-go use.
- More promotional packs and brand extensions to maintain customer loyalty.
- More eye-catching and colorful designs to enhance brand awareness and to stand out on the shelf.
- The development of the mass luxury or “masstige” category of cosmetics and other consumer goods.

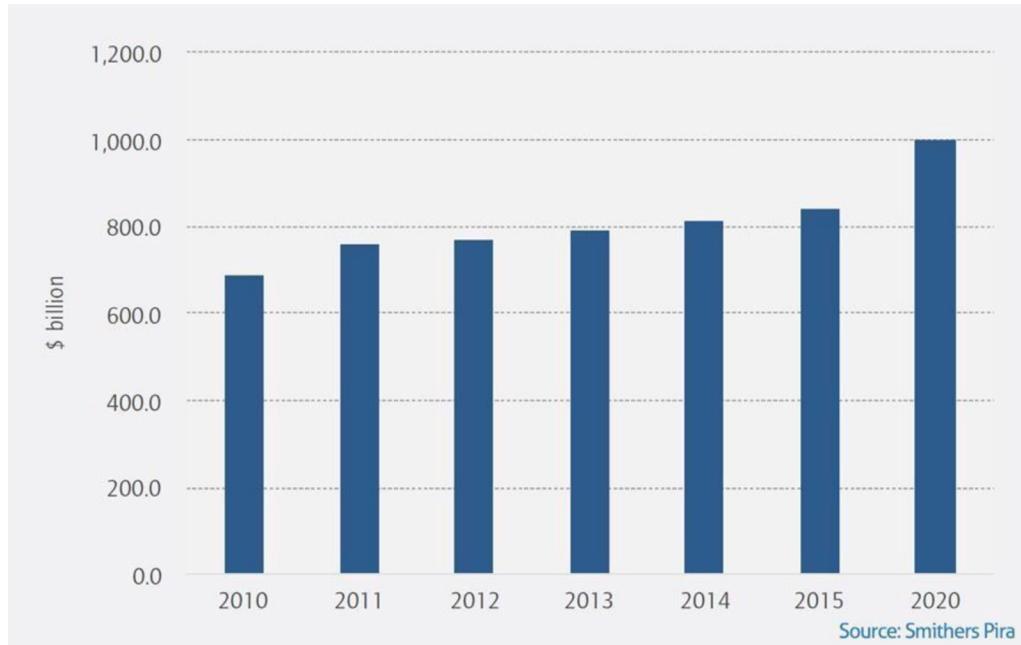
Thus, having a good relationship with the product development teams and end-marketing teams is necessary to get insights that can be used by the seller to improve future profits.

WHY THE TIME IS NOW?

To understand why it is the right time to come out with a solution, we have made a basic study of the market condition, market suitability and the market trends.

Market Analysis:

Smithers Pira has forecasted a steady growth across the packaging industry. The industry was valued at **\$839 billion in 2015** and is expected to grow to **\$997 billion by 2020**, a year-on-year growth of 3.5%. Sustainability is expected to be the most important thing at all stages of packaging value chains.



OUR SOLUTION

We believe in the power of blockchain technology to transform the space for the better. To that end, our solution is designed around the advantages that this technology provides. Before delving into the blockchain aspect of the solution, let's get a basic understanding of the solution itself.

A platform for Sellers and Buyers:

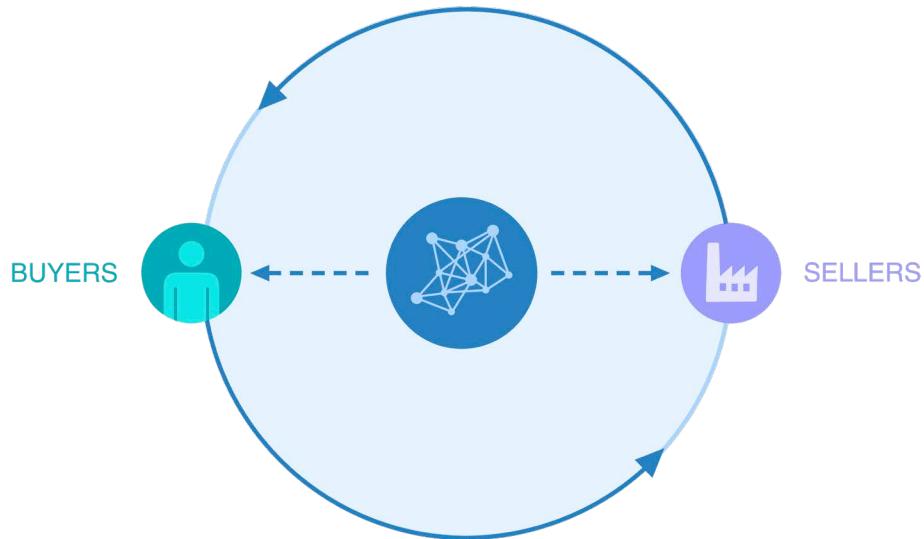
Having seen so many market segments and customer segments, we found that it is imperative to bring together all these markets to a single place and hence the idea to design a marketplace for Sellers to find their buyer counterparts and vice versa.

Having said that, we also understand that every supply chain has a lot of actors in place and we must be careful in designing interactions for each of these actors. But first let us understand what a platform is and then delve into the step by step process of our solution design.

WHAT IS A PLATFORM?

A platform is an open architecture, together with a governance model, designed to facilitate interactions.

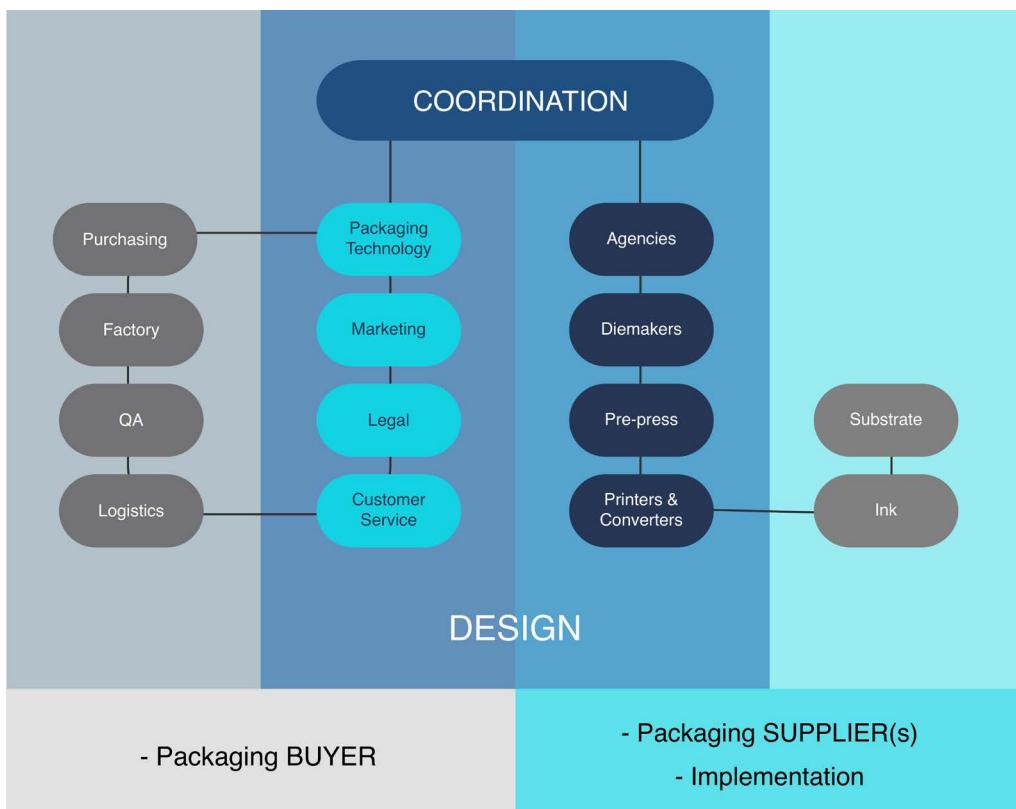
- **Open architecture:** allows 3rd parties to participate, to build, and to innovate in standardized ways. To orchestrate value created by others, the system must be “open” in ways that invites them in.
- **Governance:** gives power to exclude bad actors, steer community behavior, and monetize. Rules are essential to encourage healthy interactions and discourage unhealthy interactions
- **Interactions:** provide the means by which value is created. By interacting with other people, with content, or with products and services, people who use the platform should experience a form of personal gain.



THE OPEN PACKAGING DIFFERENCE

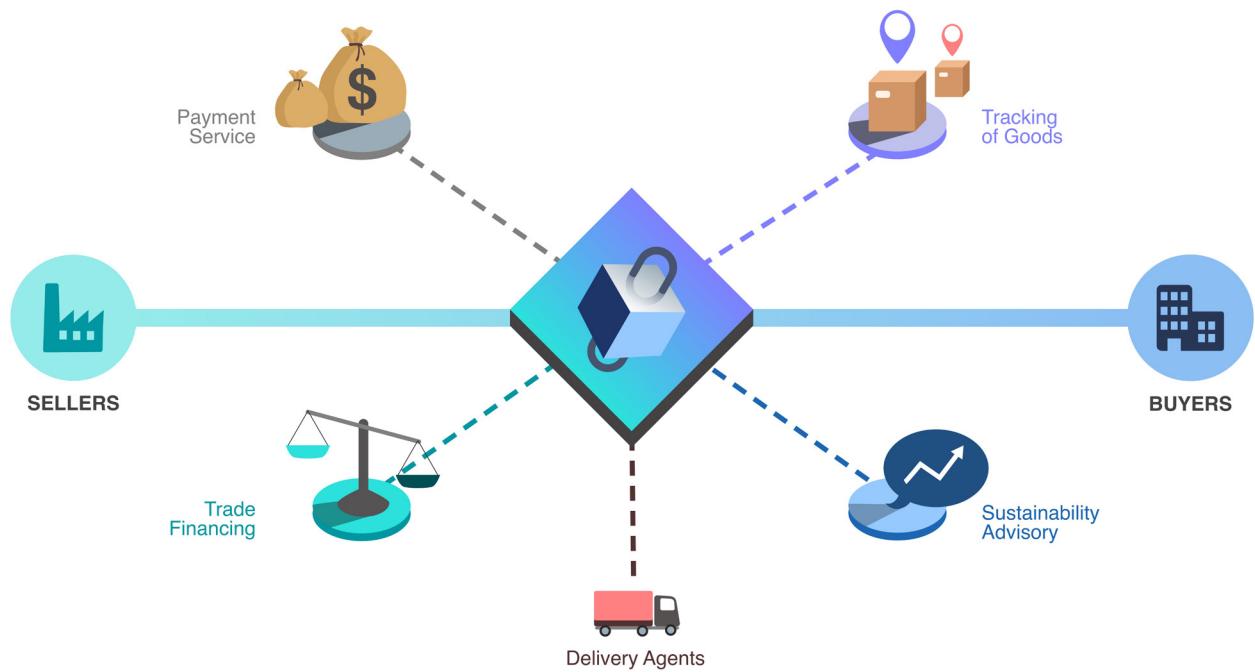
The Current Process

Before designing the solution, we wanted to understand how the market looked like. This is how a typical packaging supply chain looks like:



If the seller already has already produced the product, we see that the buyer first contacts the distributor who then contacts a specific Seller and then gets back to the Buyer with the product. However, we see that in this process not only is time consuming for buyer but also a very tedious one for all the actors in the process. Hence, we have come up a novel idea to reduce the time loss and control loss.

The Open Packaging Ecosystem



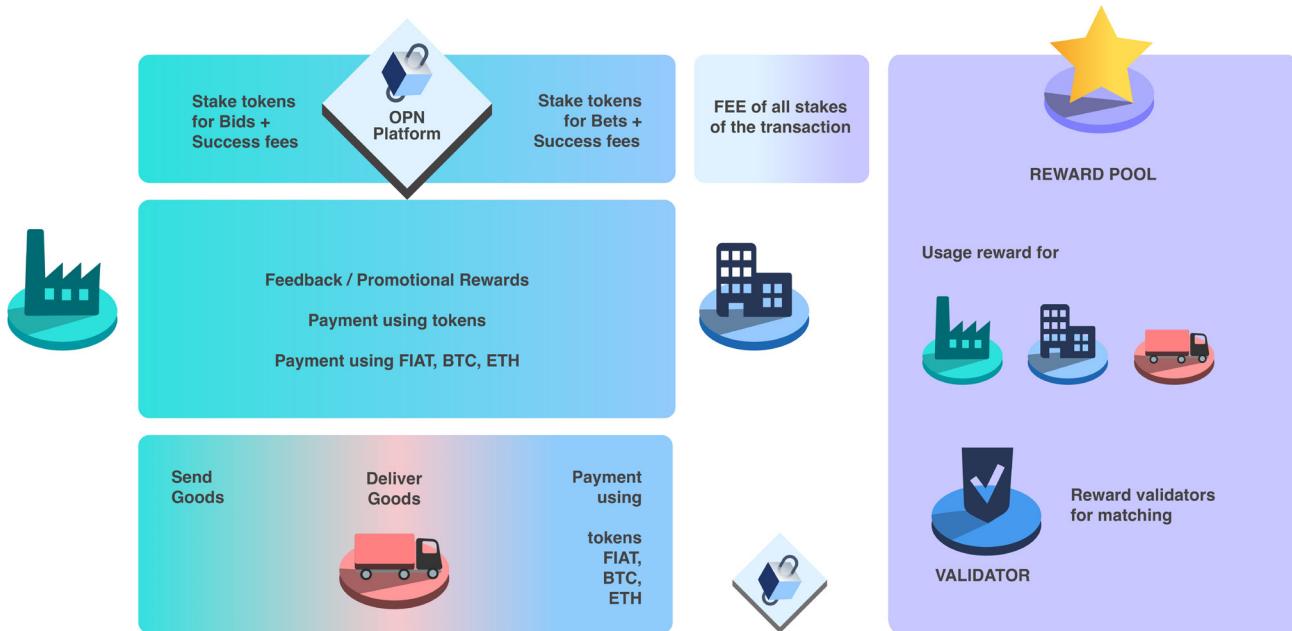
The OPN ecosystem is a marketplace for Sellers and Buyers to interact with each other. Sellers and Buyers can both publish the products that they have and need respectively and get it fulfilled from the counter party.

The ecosystem is designed to act as a one-stop solution for all packaging related services. To that end, we will have various services integrated to the platform. Besides having access to a wide variety of goods and better prices, the stakeholders can also enjoy the benefits of these services with the help of OPK tokens. A preliminary comparison of the features is as below:

FEATURES	Open Packaging Network	Offline Purchase
Fair Prices	5/5	2/5
Quick Payments	5/5	2/5
Integrated Services	5/5	1/5
Transparency	5/5	1/5
Trust	5/5	3/5
Assortment of Products	5/5	2/5
Online Documentation & Security	5/5	2/5

HOW IT WORKS:

For Platform Stakeholders

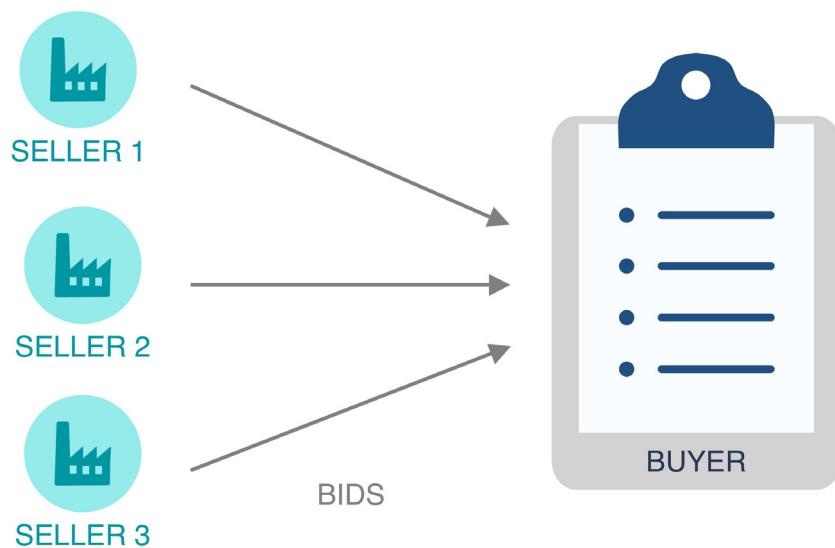


For Investors



THE BID AND BET PROCESS

Seller Use Case:
Bidding



The Bid Process

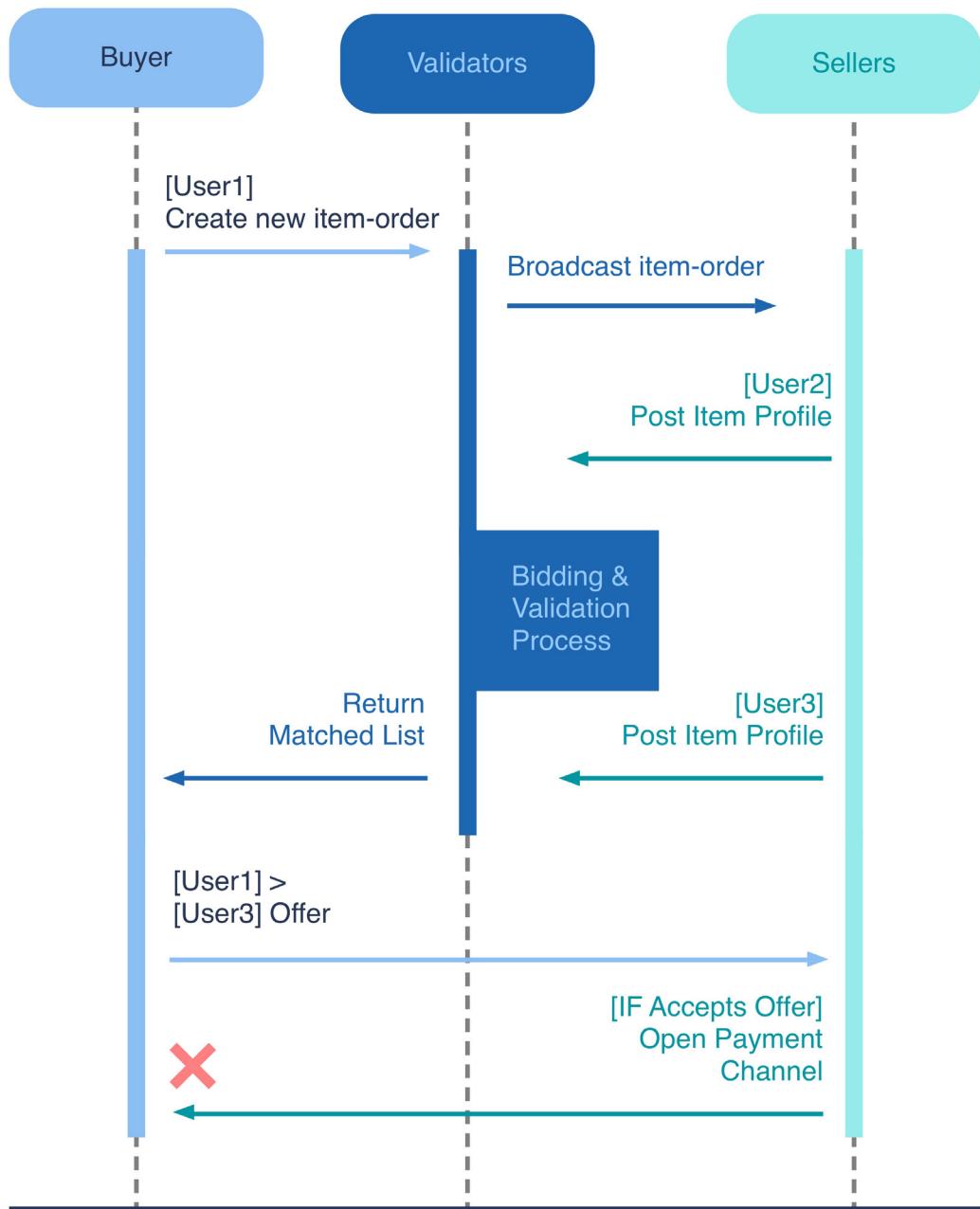
Step 1: Buyer posts an order to be fulfilled.

Step 2: Sellers who are notified of the order start bidding for the order by staking their tokens.

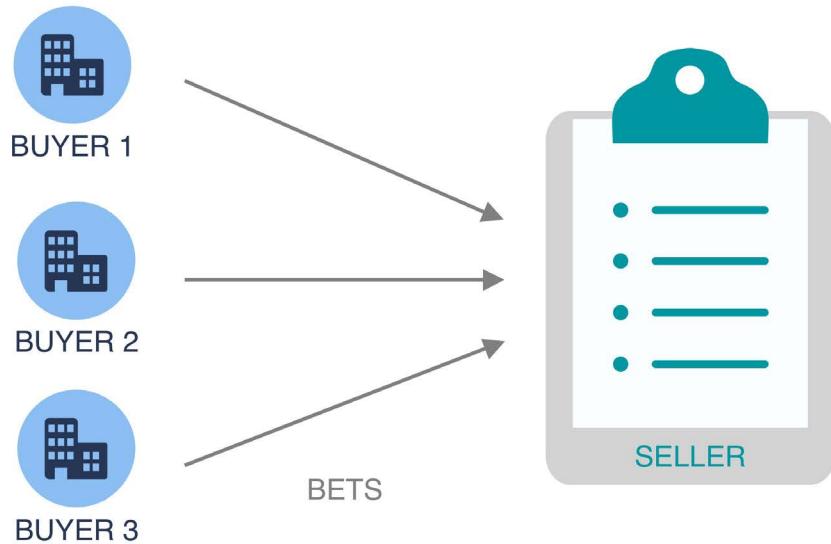
Step 3: Validators prepare a list of matching sellers for buyers based on pre-set rules.

Step 4: The buyer stakes coins before selecting an offer from the seller.

Step 5: The payment is initiated to the seller based on the terms of the contract using a Smart Contract.



Buyer Use Case: **Betting**



The Bet Process

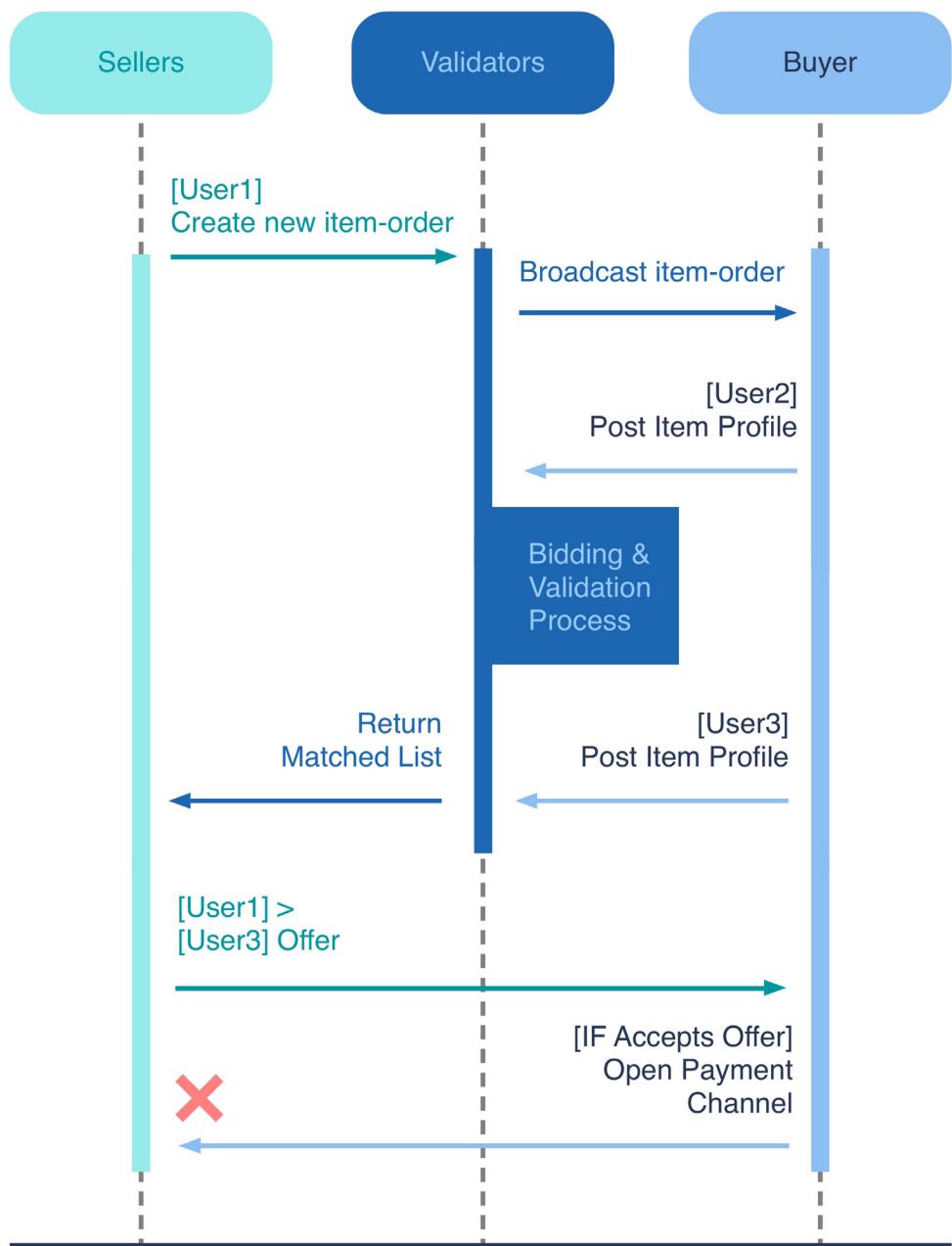
Step 1: Seller posts an item that he has in the inventory.

Step 2: Buyers who are notified, start betting for the order by staking their tokens.

Step 3: Validators prepare a list of interested buyers for the sellers based on pre-set rules.

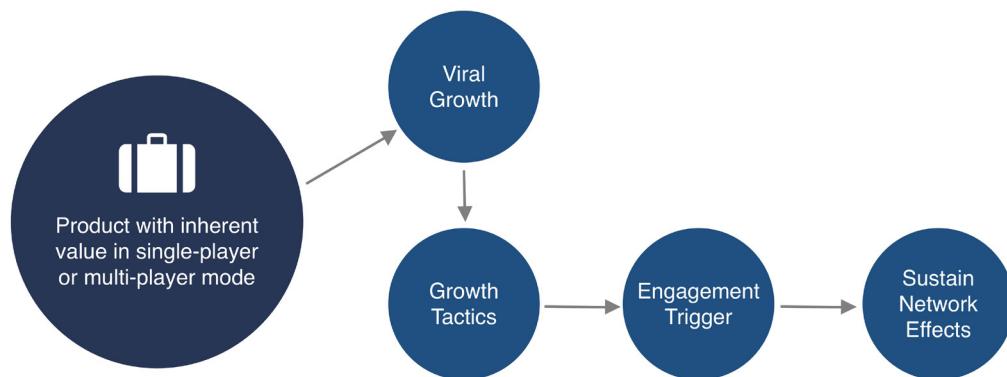
Step 4: The seller stakes coins before selecting an offer from the buyer.

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THE PLATFORM STRATEGY:

For a platform to be successful it must build and maintain network effects. As per the study done by Andreessen Consulting, this is how a firm can build and maintain network effects:



We would like to build our product on similar lines.

a. Entry Strategy:

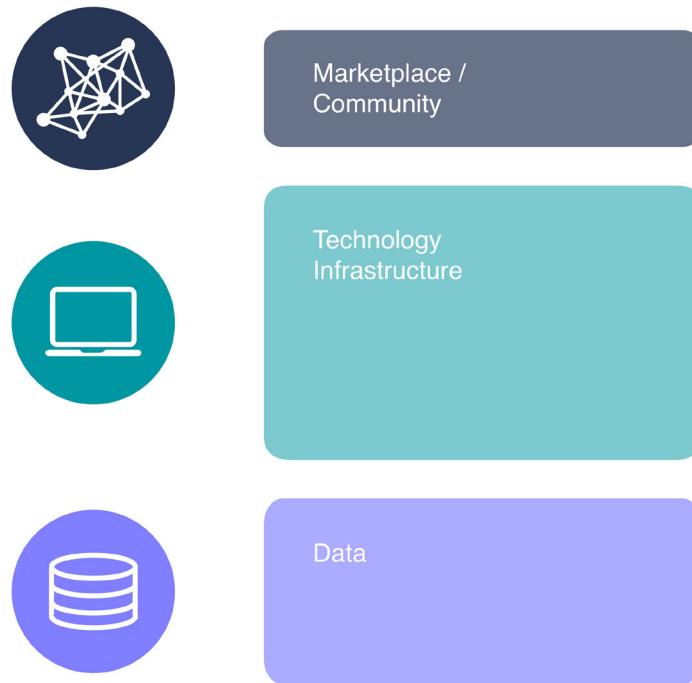
We would like to employ a Bowling-Pin Strategy in that we would like to start with a micro-market niche and then move to other segments of the market. We aim to start with Shrink Sleeve packaging market and then move to other segments of the packaging industry. This we believe will help us add a significant market to one market before we move to the next.

b. Growth Strategy:

The growth strategy consists of subsidizing the sellers and buyers by seeding the platform with useful information for free. These include

- Market Research Reports
- Expert advice and Interviews
- Discussion Forum
- Posts/Articles on packaging
- News

All these data will also help create a standalone value for the platform, which is an important factor of success before a critical mass is reached. The platform stack will look like this before Critical Mass is reached.



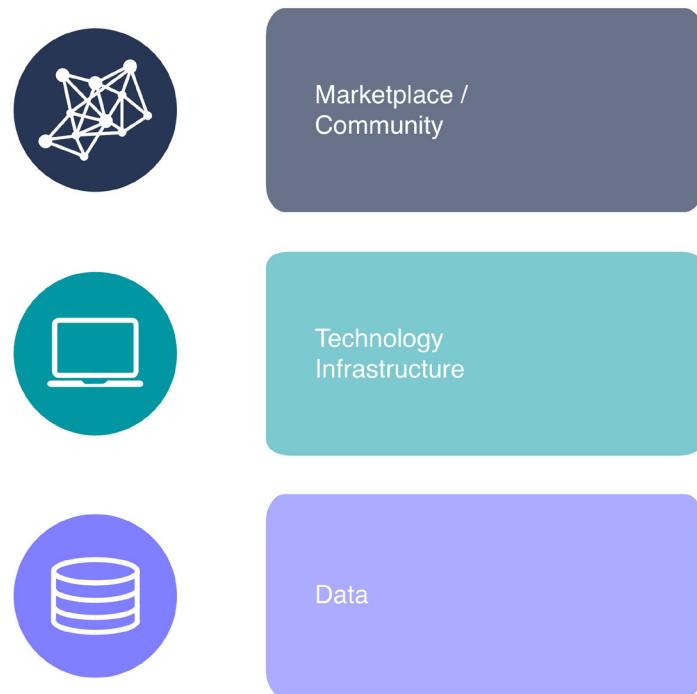
c. Critical Mass:

The platform has been designed such that it starts to build network effects from the word go. Each seller is incentivized to obtain a 'Last Bid' option if he gets his buyer onto the platform. Similarly, each buyer is incentivized to get more of their sellers on the platform for availing the 'Last Bet' option and better deals.

d. Engagement Trigger:

To maintain user engagement new features will be added to the platform on top of the core interaction – listing. Some of the features include: Reputation Systems, Wish Lists for better demand forecasting, Competitive benchmarking analytics for sellers, Seller insights for Buyers, Financing and Insurance capabilities for actors, Prediction Markets for better analyzing the products and market in general. APIs will be rolled out to facilitate more interactions for more actors on the platform.

The below diagram shows how the platform stack will look like once the network is in place and the network effects have kicked in.



THE TOKEN SALE STRUCTURE

Summary

Token name: OPK

Token Sale Duration: 01/10/2018 - 31/12/2018

Standard: ERC-20

Accepted Currencies: BTC, ETH, USD, EUR, CHF

KYC/AML: Yes

Token to be sold: 30,000,000 OPK

Hard Cap: \$30 million

Unsold OPK Tokens: To reserve fund

Total Token Supply(max): 50,000,000 OPK

Token Purchase price: 1 USD = 1 OPK

Min Purchase: 50 OPK

Max Purchase: 100 000 OPK

Token allocation: Automatic

Lock up: No

Fund Collection: Escrow

Funds Release: Roadmap Milestones

Bonus Structure

TIMEFRAME	Below 10 ETH	10-100 ETH	Above 100 ETH
First 24 hours	20%	22.50%	25%
Week1	15%	17.50%	20%
Week2	5%	7.50%	10%
Week3	1%	1%	1%
Week4	0%	0%	0%

- The exact number of tokens generated depends on the amount of funds contributed
- Tokens will be transferable once the ICO is completed
- Upon reaching the hard cap, the ICO will end immediately

The number of tokens generated will be proportional to the number of OPK token generated.

* The number of OPK Tokens per 1 ETH will be pegged to the \$US value of Ethereum at the time of the ICO

The number of tokens generated will be proportional to the number of OPK token generated.

ICO Participants	Team (Subject to vesting and lockups terms)	Advisors, early supporters, bounty	Reserve Fund
60%	15%	5%	20%

- The team's tokens are locked for a period of 2 year vesting schedule with a 6 month cliff.
- Advisors' and early supporters' tokens are locked for 6 months.

BOUNTY CAMPAIGN AND REFERRAL AWARDS

Activity	% of Bounty Pool
Signature Campaign	20%
Blog Article and Video Campaign	20%
Social Media (Facebook & twitter)	20%
Translations	15%
Telegram	5%
Miscellaneous	10%
Referrals	5%
Reserved Bounty Pool	5%

Activity	Reward as % of tokens purchased
Referrals	5%

Referral reward to a referral link owner is 5%, based on the number of tokens purchased using the referral link. Those who bought tokens using a reference link receive an extra 3% bonus.

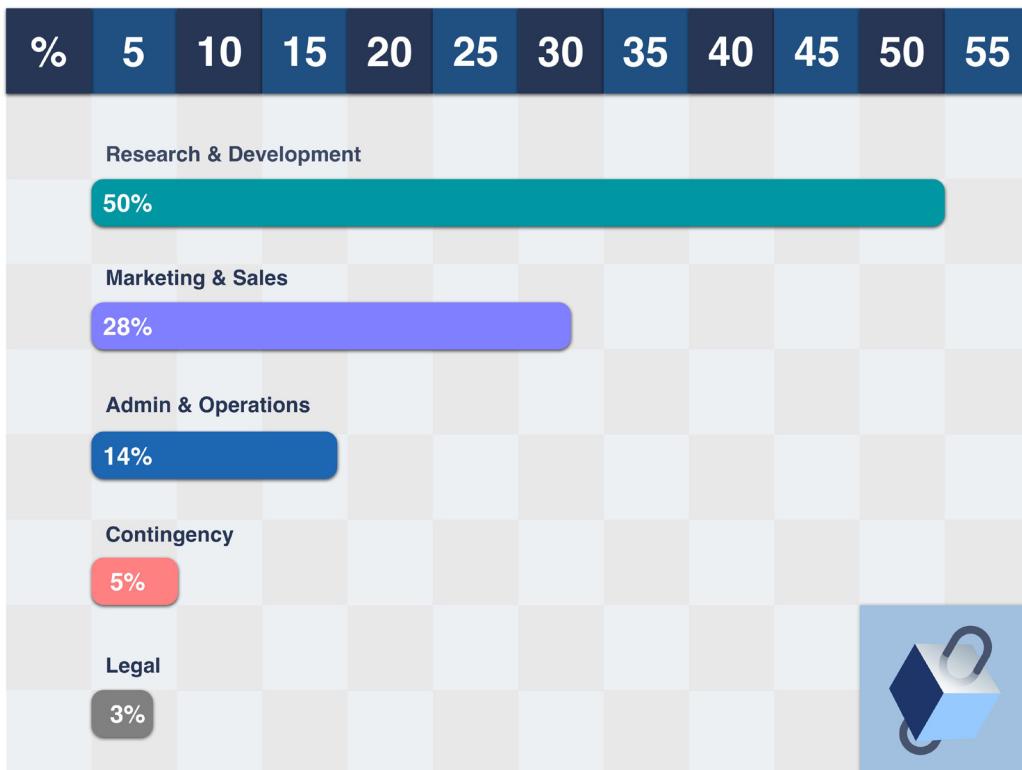
THE TOKEN SALE PROCESS

Planned Fund Allocation	%	Amount
Research and Development	50%	18000000
Marketing and Sales	27.80%	10008000
Admin and Operation	14.40%	5184000
Legal	2.80%	10008000
Contingency	5%	1800000

Our roadmap assumes development of all features for the OPK platform and mobile applications and interfaces for all the platform participants, with a strong sales and marketing support to accelerate adoption by sellers and buyers of the packaging industry.

- Research & Development costs cover all R&D expenses, including design and development of smart contracts, cryptographic mechanisms, the OPN platform, apps and interfaces, etc. Includes opening of an R&D center with approximately 40 engineers.
- Admin & Operations costs include salaries of all OPN employees excluding the R&D team. Marketing & Sales budget will be allocated on acquisition of both sellers and buyers.
- Legal costs include all legal expenses associated with expansion of the OPN ecosystem in different countries.
- Contingency fund is calculated as 5% of the total budget.

TOKEN SALE ALLOCATION



THE ROADMAP

