

# splyt Decentralized Ecommerce “deCommerce” and Fractional Ownership Protocol

A Lite Paper



## **Abstract**

*"I could absolutely imagine a decentralized Amazon. We've seen the pieces. They're not all connected to one another. They're not all but out or remotely mature, but I could imagine an open platform of many different actors with different roles."*

*– Joseph Lubin, CEO ConsenSys Systems*

Spl.yt is a blockchain infrastructure that can integrate the entire inventory of all assets for sale in the global e-commerce industry into one decentralized protocol. This will make it easier for anyone to buy, sell, and share ownership (of anything) on any existing or future-thinking online marketplace. Spl.yt is designed for any e-commerce marketplace of any size or technical ability to connect to the spl.yt suite of smart contracts on the blockchain, allowing them to increase their functional capabilities, pool resources in a fair and transparent manner, and to increase their market presence and value to customers. All listings from marketplaces using spl.yt are automatically populated into each other's inventories, enabling a seamless affiliate marketing program without the fraud and waste currently known for permeating the legacy e-commerce system. This benefits users (buyers and sellers of items) because they only need to post or search for items on one marketplace to accomplish what would have taken many visits to do so before. Further, spl.yt allows marketplaces to offer any item (such as sports tickets, cars, art, or musical equipment) for fractional purchase and ownership, allowing consumers to afford otherwise unattainable luxury assets and thereby increasing the potential customer market for sellers.



## **Spl.yt Core Ecosystem**

Spl.yt core is a blockchain-based self-regulating social utility that is publicly-accessible and easy to use. Through the use of ethereum-based smart contracts and spl.yt's own ERC-20 compliant crypto-token, spl.yt manifests as an ecosystem that any buyer, seller, marketplace, or other party involved in e-commerce transactions can leverage to redefine how we buy, sell and own things online. Applications who utilize spl.yt core can take advantage of the network provided by the spl.yt economy in a unified effort to transform social understandings of how people can use the internet to buy, sell, and own property.

Spl.yt core will be developed and managed by the Splyt Core Foundation, a nonpartisan, non-profit entity charged with meeting the needs of ecommerce applications who utilize its features. Spl.yt core boasts the following capabilities to help ecommerce applications better help users buy, sell, and manage goods using their services:

**Spl.yt Access Token:** SATs are the economic incentivization financial unit through which certain behaviors are incentivized to facilitate the spl.yt economy. SATs serve three primary functions:

1. Access to add inventory on the blockchain "global inventory" yet creating artificial economic barriers to disincentivize undesired behavior, including (but not limited to) spamming the network, defrauding other ecosystem members, or failing to engage in real-world behavior that mirrors on-chain agreements;
2. Incentivizing competitors to work together in efforts that were traditionally independently and redundantly carried out, thereby eliminating natural barriers that allowed for oligopolistic opportunities that permeate the current e-commerce regime; and
3. Giving opportunities for revenue streams to individuals who help ensure the integrity of the spl.yt ecosystem.

Beyond the natural benefits of a programmable that does not require an entire blockchain ecosystem's consensus to effect, SATs are also preferable as a distinct medium of exchange from ETH because each can independently appreciate or depreciate in value, similar to how it is



desirable to buy gas, bread, and stocks with US dollars so that each can fluctuate in price or value without directly affecting the others' markets.

**Decentralized Global Inventory:** Multiple websites/platforms can utilize and contribute to a common shared inventory listing base, competing instead on other business differentiators such as shipping prices, support services, specialized competence, etc. For example, if Amazon, eBay, and textbooks.com were all built on spl.yt Core, sellers of textbooks would only have to list their textbook once on one platform and it would automatically populate the others. Conversely, a buyer of textbooks would only need to browse one website to compare prices rather , and the item would automatically de-list from the others. Once a buyer purchases an item listed in the Decentralized Listing Base, it will automatically de-list from every other marketplace as well, avoiding any risk of double-purchasing the same item.

Sellers must pledge and deposit small amounts of SATs to post an item in the Decentralized Inventory which will deter spam and fraudulent listings. These staked SATs will be returned to the seller, distributed to other marketplaces, or sent to other users depending on the success and behaviors exhibited throughout the transaction. (see below for details).

**Automated Affiliate Marketing Incentives, Invoicing, and Payments:** Approximately X spent in modern affiliate marketing is lost to fraud and waste due to uneven information between sellers/marketplaces and marketers. For example, Search Engine Optimization (SEO), ad serve, and other methods of click-through models of affiliate marketing produce waste in the form of clicks that do not produce consistent conversion rates due to webcrawlers and bots, and frequent disagreement with the advertiser's and seller/marketplaces records. Thus, both sellers and marketplaces find it difficult to model how much they should pay for this transaction.

spl.yt solves this problem because sellers (and/or their corresponding marketplaces) can offer a portion of the final purchase price listed in the decentralized inventory to others who help broker or facilitate a transaction. For example, a seller on marketplace X can offer a fixed and/or proportional commission for marketplaces A, B, C, (...N) to post



their listings on their own interfaces; should Marketplace B secure a buyer for X's listing, they will automatically receive the listing bounty (upon the transaction's successful completion) without any possible failure or inaccuracy for contributing to the transaction. Marketplaces willing to list others' products can filter those posted to their sites based on item types and commission amounts, ensuring they are receiving the desired economic return suitable for their appropriate situations. Beyond marketplaces, this easy-to-implement automated kickback system could be used by social media influencers that list spl.yt listings on their websites or channels, drop-shippers looking to service clients of any size, delivery/fulfillment processors, or anyone else who contributes to a more effective, efficient e-commerce transaction.

**Decentralized Autonomous Fractional Asset Management:** spl.yt contracts can be used to "timeshare anything." In the same way that timeshares create a framework for many parties to collectively purchase, own, use, and manage a piece of real property, spl.yt's e-commerce-tailored DAO mechanisms create a framework for individuals to collectively purchase, own, use, and manage *any* form of property, such as cars, art, musical instruments, industrial equipment, or sports season tickets. Because interest in fractionally owned assets is tracked on the blockchain, they can be bought, given, sold, leased, or otherwise transferred, just like ownership interests in traditional fractional ownership systems.

Marketplaces and sellers can opt for spl.yt listings to be purchased collectively, creating contracts that will automatically spawn DAO-like governance contracts for collective asset management ("spl.yt DAOs"). For example, a spl.yt DAO can set decision-making parameters in order to select service providers to maintain assets, assign individual usage rights of collectively owned property, or enter smart contract agreements as a group with service providers. This feature could be used for fractionally-owned real-world assets, creating and managing investment pools in various types of assets, or supporting non-governmental community efforts to obtain and manage social property like parks or roads. spl.yt hopes that as marketplaces and goods and service providers experiment with this novel function they will be inspired to explore new business models and consumer values inconceivable under the legacy mindset.



**Service Economy:** Maintaining and effectively using a fractionally owned asset is costly and often requires the skills and labor from specialists competent in performing such tasks. In legacy fractional ownership models, a management company often performs the duties of maintenance and service or of outsourcing third parties to complete these tasks, usually unilaterally selecting other service providers to contract with in order to properly service fractionally owned assets. Those legacy systems usually collect an annual fee from owners for fulfilling such task. However, since a single management company is often contractually bound to an asset, owners under the legacy model have little recourse or alternatives should a management company either poorly perform its duties or raise its rates beyond market value.

The possibility of consumers using spl.yt's Decentralized Autonomous Fractional Ownership System to manage assets not traditionally available in legacy fractional ownership models--such as cars, art, musical instruments, or industrial equipment -- creates a new economic opportunity for service providers to manage, maintain, and facilitate their collective enjoyment. For example, in the hypothetical use case of a car, existing automobile services for cleaning, maintenance, repairs, insurance, or driving/delivery could expand their revenue potentials by servicing this market; likewise, new entrepreneurs intent on creating forward-thinking services could also cater to these needs. As Decentralized Autonomous Organization contracts can collectively enter into (and terminate) service agreements with ease, there is high potential for a whole new sub-economy/industry to meet this new demand.

**Time Reservations and Auctions:** Like legacy fractional asset systems, stakeholders in collectively/fractionally owned assets can use their asset for a certain amount of time (if appropriated) allocated by ownership percentage. Also like legacy fractional asset systems, *spl.yt* collective members may prefer to use an asset at a specific time that conflicts with another member's desire to use the asset at the same time. *spl.yt* solves this problem by utilizing an auction format for assigning "timeslots" to members, which will be the primary mechanism for collectives to periodically raise the SATs necessary to service their asset over its life.



Timeslots will be auctioned off to a collective's members to book use of their partnerships, with each timeslot available for a prorated amount of the year's total service, management, and maintenance fees. So, for example, an owner of 1/10th of an asset that has 365 days of utility per year would be able to use that asset at most 36.5 days per year. These 36.5 days do not necessarily have to be consecutively used and can be assigned to any segments available for bidding.

The sum of timeslot auction starting bids will initially be set at the projected cost of all services required to maintain that asset on a per annum basis. So, for example, an asset with a total annual service, management, and maintenance fees of 3,650 SAT will have an initial 10 SAT bid. Some days may be in higher demand for use, so once a bid is placed at the initial price, another member may outbid that offer with a higher amount of SAT, with higher bids allowed for each timeslot until an arbitrary deadline.

This can result in two possible outcomes: 1) A surplus of SATs in the collective contract which can be used as a "rainy day fund" to pay for higher quality or more instances of service, or to be distributed back to members based on proportion of ownership; or 2) The other days' initial price (including any bids placed at that price) will automatically adjust to a prorated amount based on the amount of annual service fees remaining after subtracting the total amount of higher bid days. Once a timeslot is won/reserved by an asset holder, the private key that controls that asset will be necessary to actually use it during that time slot.

In the event some timeslots are not reserved (and therefore the projected costs of maintenance, management, and servicing is not covered), collectives can: 1) allow or force non-participatory members to sell their right to bid on a timeslot to third parties; 2) create a negative incentive to discourage not using or selling a right to secure a time slot; 3) form an ongoing rainy day fund belonging to the collective that is utilized in this situation or other times where unexpected costs occur; 4) curtail services received by that amount and distribute the additional cost among participatory members. The current plan is to allow each partnership to decide which or how many of these solutions to use for their asset, though we will explore the effectiveness of each (or a



combination) of these possibilities during testing and market development.

**Global Marketplace Reputation System:** Reputational systems are an established method of reducing information asymmetry between e-commerce players in a way that naturally discourages bad behavior. Legacy e-commerce leaves it upon each marketplace to manage reputational systems internally, meaning buyers, sellers, and other non-marketplace entities must manage their reputations redundantly if they operate on multiple marketplaces. This practice creates a natural benefit to dominant players because their network effects allow them to have robust user-input while others struggle to aggregate the same. This redundancy and competitive barrier limit the effectiveness for reputational trustworthiness overall because they must trust large rating administrators to not abuse their position and because potentially valuable, unique information gathered by smaller players is not incorporated to the larger players' representations. splyt solves this problem through its shared reputational incentive system. *More details to be provided in a future version of our whitepaper.*

**Dispute Resolution Protocol:** The legal system is a strong behavioral-incentive in virtually all transactions, and e-commerce is no exception. The threat and reward of litigation encourages all actors to act in good faith and police each other's behavior to manifest as a system that is trustable in the vast majority of cases. Nonetheless, enforcing previously-agreed transactions through the legacy court system can prove inhibitive time-consuming for any player -- let alone smaller consumers, marketplaces, or sellers who do not have the resources to pursue this option.

SAT's utility logic system is designed to leverage the force of dispute resolution to promote good behavior in e-commerce transactions. The system is based on a double-staking method:

1. Parties must stake a small amount of SATs when they engage the system that will be returned to them (or go to other parties if justified/desired) upon a transaction's successful completion;





2. Any party interested in disputing the first party's good faith behavior may stake a matching amount of SATs to indicate their belief;
3. The first party may then concede that there was poor behavior (e.g. a spam listing or a missed shipping deadline), and surrender a portion or a full amount of their stake to settle the dispute, or stake an additional matching amount to indicate their confidence that they behaved properly;
4. The challenging party can either surrender their original amount or place a second matching stake to indicate that their confidence that the first party indeed behaved improperly;
5. If both parties double-stake, the dispute goes to a third party who can analyze the evidence and arbitrate, with a portion of the double-staked amount going to the arbitrator for their efforts and the rest going to the winner of the dispute. This double-staking method can be leveraged at any point where human actors are capable of bad faith actions in order to discourage that behavior and give all users confidence in the system.

*splyt* will avoid this “mini-monopoly” phenomenon by allowing partnerships to enter and end relationships with service-providers (“servicers”) as they please. This will allow members of a collective to decide by consensus what standard of service they desire, what price, and which providers to engage to solicit such services. Servicers will be paid in SATs gained through the time reservation system (see below).

Independent providers will recognize the ease of advertising their services and marketing through a *splyt* platform that allows collectives to choose between either purchase services directly from the source or to hire freelance management companies to contract with third party providers on their behalf. This feature would incentivize grassroots entrepreneurial opportunity to thrive using the *splyt* economy. SAT's value will be backed by this service economy, meaning it will be directly correlated to the amount of servicers and the amount of partnerships soliciting them. We intended for this method to boost economic activity and competition in local areas, with its growth reflected in token-holder value.



## **Our Mission**

The Splyt Core Foundation project's goals are to provide publicly available open source solutions that resolve frictions in the ecommerce industry that create oligopolistic environments, acting as an overseer for coordinating and incentivizing market places to build on and contribute to a new "decentralized commerce" movement ("deCommerce"). All products will require using "spl.yt access tokens" (SATs), which are circulated throughout the spl.yt economy and provide incentives aligned with promoting the deCommerce movement.

Splyt already has completed an alpha minimal viable product in the form of three smart contract-enabled features: a shared, decentralized listing database, a protocol through which users can collectively purchase and manage assets, and an automated . Marketplaces who utilize one or both of these features can assure users that (respectively): (1) their inventories are competitively stocked and that they do not need to explore multiple marketplaces to find the correct item for the lowest price, and (2) they can intelligently acquire, share, and use goods, services, or experiences that might have been outside their budgets in legacy systems. SATs are used to incentivize behaviors by all parties involved to ensure the system's success and increase adoption.

We encourage believers in this vision of a shopping experience powered by deCommerce will participate in spl.yt's token distributions, we also encourage participation in our social media communities, our open-sourced development repositories, and outreach efforts.

