



SwopX NFT Platform

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Abstract

SwopX is a modern, decentralized barter/exchange ecosystem built on multi-blockchains with smart contracts that reward qualifying traders for swapping physical non-commodity assets, digital content, and services. This white paper discusses how we provide a global marketplace platform for creating, exchanging, auctioning, and collateralized lending of NFTs and the introduction of SwopX's utility token Apreum (APU) for use in exchanges and rewards.

By using blockchain technology, we overcome challenges presented in a traditional barter system in which goods and services of perceived equal value are exchanged between parties without the use of money. We take it a step further by introducing the ability to connect multilateral swaps and incentivize traders with crypto rewards.

SwopX's groundbreaking exchange ecosystem not only revolutionizes traditional bartering with blockchain technology and crypto rewards but also dedicates itself to empowering artists in the digital landscape. By offering seamless access to Web3, SwopX enables artists to effortlessly create, price, and sell NFT collections, further supported by its comprehensive ecosystem and the utility of the Apreum (APU) token. Beyond these advancements, SwopX embraces the realm of gamification, intertwining engaging experiences with NFTs, and even delves into virtual reality, providing white-glove services for third-party metaverse NFT integration (supporting Meta/Oculus, Apple Vision Pro). This multifaceted approach ensures that SwopX remains at the forefront of NFT innovation and artistic enablement.

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1. Introduction

The barter system is the oldest form of commerce and exchange of products and services for other products and services[6]. People did not use the money for transactions in a barter system since concepts like currency and its value were non-existent. Due to the new inventions and widespread adoption of currency and financial systems, the utilization of the antiquated bartering system became less prevalent until recently. The same advances that drove the growth of centralized finances such as communications, computing power, and internet technology also enabled new platforms for arranging the barter of goods and services. Similarly, the blockchain technology that increased decentralized finance also presents a unique opportunity space for a global, decentralized, secure, and reliable system to arrange barter transactions requiring a coincidence of interest.

Token Assets NFT

NFTs (non-fungible tokens) are the latest cryptocurrency phenomenon to go mainstream[3]. Before we discuss what NFTs are, it is crucial to understand what cryptocurrency is first. A cryptocurrency is a digital form of cash, and it is controlled by a “private key.” Unlike cash, where the physical paper bill determines ownership, your ownership in cryptocurrency is determined by holding a “private key.” To make any digital transfer, you must utilize this private key. Similar to cryptocurrency, NFT’s are issued and recorded on a blockchain, ensuring that the asset is one of a kind. However, they are used to assign ownership of a specific asset[2]. Each NFT is linked to “some unique data typically a digital content file” and governed by a “smart contract.” No two NFT’s are the same. Unlike cryptocurrency, where exchanging one crypto with another is possible, NFT’s aren’t interchangeable since each NFT is assigned to a digital asset. This digital asset can be linked to unique physical or digital items such as collectibles, art, real estate, music, or other objects. They are bought and sold online, and the proof of ownership of any item is represented online[3]. The digital content of the token asset is uniquely stored on the blockchain platform. A user can decide to store the content file that references the token asset NFT onto decentralized and central cloud storage methods.

2. SwopX Platform Overview

2.1 Challenge

As mentioned earlier, the barter system allows participants and businesses to exchange physical goods and services for other physical goods and services with no need for a monetary medium of exchange [1]. The bartering process occurs on a different basis either bilateral or multilateral [4]. It also exists in monetary systems while the currency is usually unstable due to hyperinflation or a deflationary spiral.

Since the barter system is an old method of managing transactions, it presents some challenges such as the double coincidence of wants, lack of a common measure of value, and difficulty in storing wealth. The first disadvantage this system presents is the double coincidence of wants. It simply means that for an exchange to be completed, it requires an immediate satisfaction of both parties. What one person wants to sell and buy must correspond with what the other person wants to buy and sell. It is known as the “simultaneous fulfillment of mutual wants by buyers and sellers [5].”

One of the other critical challenges that the system presents is the lack of common measures of value. In a barter system, there is no standard measure (unit) of value. Even if the buyer and seller conditions happen to meet, the issues arise in what proportion the two goods are to be exchanged, and “each article must have as many different values as there are other articles for which it is to be exchanged.” With many articles being produced and exchanged, there will be an unlimited number of exchange ratios. The absence of a mutual denominator to express the exchange ratio creates many difficulties. Lastly, it creates difficulty in storing wealth or purchasing power for future use in the form of goods which can have costly storage and deterioration. Blockchain is the tool that can resolve some of these challenges[5].

2.2 Bartering on SwopX

SwopX platform aims to enhance individuals' ability to swap items directly as the barter system becomes more common for exchange due to more physical non-commodity and digital assets and services that already exist without use. SwopX will provide the algorithms to find the best rates to resolve the issue of negotiating the relative value of physical and digital assets and

services. Customers can easily share and trade their physical and digital assets and services from one to another. Additionally, SwopX will develop two fundamental cases, the bilateral and multilateral features of trading. The first case is to exchange, on a bilateral basis, physical assets to other physical assets. To successfully match between two members, let's assume two users need to exchange their books. User (1) swaps a book of user's (2), and user (2) swaps a book of user (1), so both users need to show each other their interests. As shown in Figure 1.



Figure 1 swapping items

Another use case that demonstrates exchanging physical goods to services, is the story of 48-years old artist Lindsey Nobel. Ms. Nobel stated that she has been trading her colorful, abstract paintings for various services for several years. She stated that she traded as many as 75 pieces of her work by finding individuals who offer the services she needs and is willing to accept these exchange transactions. Ms. Nobel stated that despite the fact that she does not make enough income as an artist, she has been living very comfortably due to bartering. One of the examples that she mentioned is securing a dentist appointment. Ms. Nobel was able to book a check-up appointment for an exchange of 3*5 artwork. Additionally, she was able to secure several other transactions, such as outpatient surgery and rent discounts, by trading her artwork. This example illustrated the importance of the bartering system. SwopX will simplify the swap of items/services and ensure it is done in an interactive and secure way.

As noted previously, NTFs are “non-fungible tokens” that are pieces of digital content linked to the blockchain. They are unique and not mutually interchangeable, which means no two NTFs are the same. SwopX will allow its users to swap digital and physical NTFs directly while using the platform. SwopX will also provide its users with the tools they need to find the best rates and resolve the issue of negotiating the relative value of physical assets and services. Some of the physical non-commodity assets that can be minted and traded using SwopX are as follows:

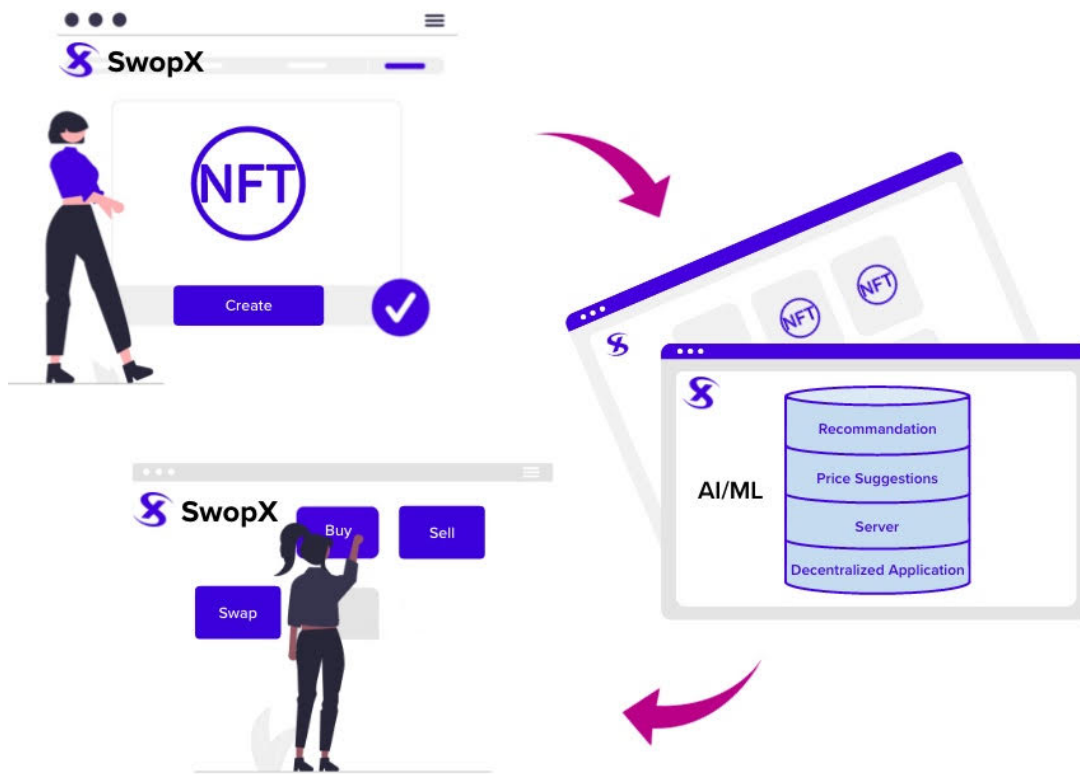
antiques, boats, used cars, clothes, electronics, household goods, jewelry, collectibles, and real estate. And some of the digital NFTs are art, fine art, music, memorabilia, and digital images. Some of these items will be available for swapping only, and some will be available for selling. Furthermore, these items will come in two different conditions (new, like new).

SwopX will allow the users to have proof of service, which refers to having time-stamped records that cannot be forged, making it the perfect place to store proof of ownership. This process will take place through the SwopX multi-blockchains which will provide the users the solution for offering authentication and the identity of the original creator. This procedure will guarantee the creators that their legal rights can be imposed if any violations occur in the future.

You might ask how purchasing or selling NFT works? For any individual to bid, buy, sell, lend or borrow NFTs they will need to access a marketplace to complete the transaction, get on the appropriate network with their digital wallet, and obtain the cryptocurrency that will be needed to execute the transaction [3]. This is when SwopX comes into the picture. SwopX will be the mediator between the seller and buyer and between the lender and borrower to assist with the process. The platform will not only allow the users to mint their own NFT but also assist them with setting up a digital wallet that can be connected to the SwopX platform to complete their transactions.

2.3 AI/ML on SwopX

SwopX platform will allow a more powerful hybrid model using deep AI/ML composite models. The platform will also offer a recommender engine to assist the users in achieving their desired results. This engine is designed to suggest listed items to the users based on their interests, purchases, and swaps. This will provide the users with a vast range of choices. Additionally, SwopX is devised to assist individuals in listing new items and showing price suggestions. Once users describe their items, object category name, brand name, and item condition, SwopX will automatically display a suitable price for given or listed items.



The reason for this elasticity is to scale reasonably and modestly to meet users' wants. SwopX's goal is to be a Global Exchange Network and a platform to make physical non-commodity and digital assets and service swaps process smooth and easy. We are determined to eliminate the use of legacy systems.

2.4 SwopX Management

2.4.1 SwopX Account

SwopX offers its users one type of account. To create an account users must sign up via email address. However, if the users wish to enroll in the reward system they should be verified through a government-issued ID, and approved through SwopX's Know Your Customer (KYC) portal.

2.4.2 Know Your Customer

SwopX requires users to obtain the Know Your Customer (KYC) standard [2]. (KYC) is a tool that verifies identity, suitability, and risks involved with providing cost-effective and

secure solutions. SwopX provides (KYC) standard that utilizes the non-fungible token. Members get a usable token stored and swapped for other subsequent (KYC) requests through this standard. To use the platform, members need to complete the SwopX personal data request form first to submit a SwopX (KYC) provider request.

2.5 SwopX Architecture

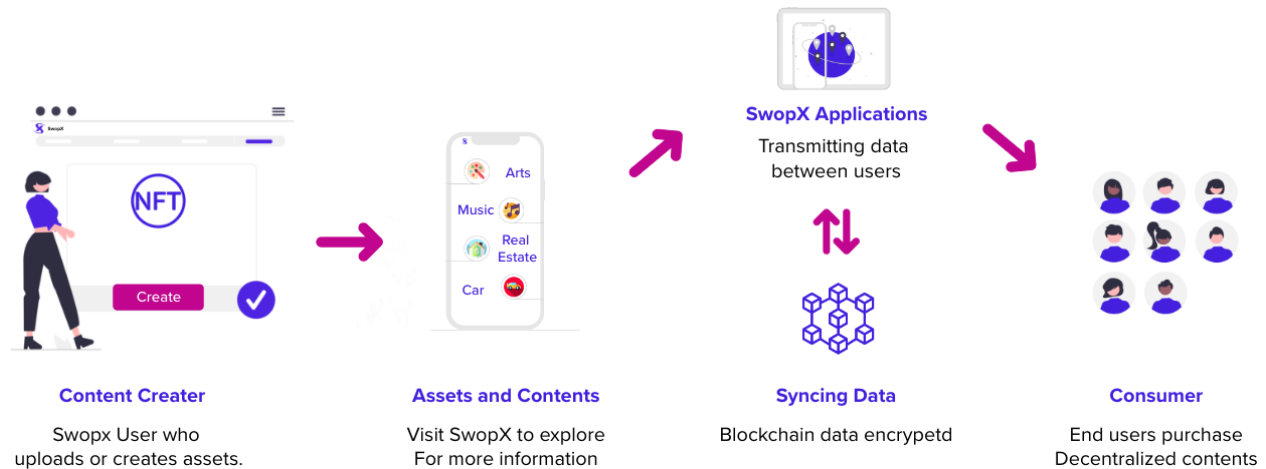
As mentioned earlier in the paper, users can prove their NFT ownership by using smart contracts. Smart contracts can play a more vital role in implementing licensing agreements. It will allow the originators to dictate the terms of their licensing agreements and ensure that they are being carried and enforced. It will also provide creators the ability to license content directly to end-users. This will eliminate the need for mediators and reduce issues of violation.

SwopX will provide the users with smart contracts that will eliminate the need for intermediaries. Smart contracts offered on SwopX will provide creators with an avenue of imposing terms for their work directly with the customers, and they will be able to manage the sales through smart contracts.

SwopX-based on Blockchain

2.6 SwopX Technical Details

One of the main goals of SwopX is to offer its users a platform that ensures their intellectual property (IP) rights are protected. SwopX utilizes blockchain technology as a tool to manage and store intellectual property rights. Intellectual properties can vary, however, the most common types are copyrights, patents, trademarks, and trade secrets. SwopX will offer the use of blockchain technology to store copyrights on a decentralized ledger and will easily track and store any transaction associated with digital content from music to pieces of art to prove your ownership and protect you from theft. The reason behind blockchain being the ideal solution for providing ownership records is its permanent incontrovertible record. Once the creation is recorded, it will remain there forever and will never change.



SwopX recognizes the difficulties that artists go through to maintain ownership rights and credit for their work. Blockchain ledgers will provide you with a time-stamped record that cannot be altered, in addition to the solution that proves and authenticates the time of creation and the identity of the original creator. This process will make it easier for originators to enforce their legal rights when needed. Furthermore, SwopX will serve as an IP registry to solve IP legal issues and provide users with a digital certificate of creator authenticity to enhance transparency through the entire licensing and ownership process. SwopX will also reduce the verification and approval time rate for patents and other registries and provide the market quick access to innovations.

2.7 SwopX Rewards

SwopX offers its members a reward system as recognition of their loyalty for making their contributions to the SwopX platform. Users receive **APU** rewards based on the measured successful match of physical non-commodity and digital assets and services with no chargeback in the crypto ecosystem. Members who successfully match swaps become eligible for a reward. There will be no time limit for claiming the rewards after using the (KYC) and claiming their successful match.

Members will have the option to utilize their rewards on the platform, donate them back to other participants, or sell them on open exchange markets.

SwopX Reward Tiers

Tier 1: Sign up on the Swopx platform and claim rewards

- Claiming rewards requires KYC process

Tier 2: Mint, Buy, Sell, Lend, Borrow, or Swap NFTs. & Customer Referrals.

Swopx Rewards brings economic value to users for their loyalty to the platform. Unlike traditional platform tokens, at Swopx we are directing 100% of our APU grant to increase Swopx users' benefits. Any user who has completed identity verification and accepted the terms and conditions is eligible for SwopX rewards. Additionally, users can collect rewards for Creating, Buying, Selling, Lending, Borrowing, and Swapping NFTs, as well as customer referrals. The APU reward system will depend on users' loyalty tier and any active promotions. Rewards will be allocated twice a week and fulfilled at the market rate at the time of payout. In the future, Swopx rewards will expand with the introduction of new Swopx products and features. For 30 days after Swopx launches, all users, regardless of loyalty tier, will be able to earn APU through the following in-app activities: Sign up, mint, buy/sell, lend/borrow, bid/offer, and swap NFTs.

Why does SwopX and Apreum Exist

We at SwopX believe blockchain, AI/ML, and cryptocurrency are the most significant developments since the start of the internet. Crypto is a young and rapidly growing industry and it is gaining widespread adoption. Those who are new to crypto, face not only uncertainty and a lack of understanding of its underlying technologies, but also a network of disconnected crypto services and platforms that must be mastered before trading, saving, and growing a crypto portfolio. Stake APU allows users to reap the benefits of price gains in their crypto assets without selling and incurring a taxable event while continuing to reap the benefits of future potential price gains.

2.7 What is APU?

The SwopX platform is powered by (APU) tokens. APU is a cryptocurrency that users are rewarded with for their loyalty to the platform for, Minting, Buying, Selling, Lending, Borrowing, Bidding, Swapping NFTs, and user Referral. Hence, APU is a utility token, not a security. SwopX utilizes both fungible and non-fungible tokens. The fungible token will be a unit

token of exchange, and the non-fungible tokens are unique identity tokens in an open-source, decentralized, and active blockchain-based digital SwopX platform.

Each user must identify their identity to allow other verified members to securely access and safely interact on the platform. This solution will reduce and prevent fraud and protect everyone. The non-fungible tokens are bound with unique identifications of items and services that can be traded easily since SwopX can confirm the existence and ownership of the physical assets.

SwopX determines the fees based on the swapping of physical non-commodity and digital assets and services. Additionally, Swopx charges 1% as a commission fee for swapping and buying items while using the platform.

2.8 SwopX Stake-Based

SwopX incentivizes decentralized exchange liquidity of (APU) on decentralized exchange platforms; for example, sushiswap. SwopX token holders can deposit staked (APU-ETH) and (APU-USDT) liquidity pool (LP) tokens with a reward rate of 10% - 40% APY. They can later deposit their liquidity pool token onto the SwopX platform to earn APU rewards on top of their (LP) balance. Stakeholders will also have the possibility to claim their rewards after 30 days. There is no staking fee when a user deposits into the staking contract.

2.9 Democratizing NFT Creation with LayerZ

SwopX is not just another platform in the NFT space; it is a revolutionary step towards democratizing the creation of NFT collections. Recognizing the challenges artists face in creating large-scale NFT collections, we introduced a generative engine named LayerZ. This unique engine empowers users to generate expansive collections by simply uploading a handful of image assets as separate layers. Our vision goes beyond mere technology. At the heart of SwopX is a mission to democratize and popularize this technology, ensuring that visual artists, regardless of their technical prowess, can harness the power of NFTs. We are deeply committed to the artist community. A portion of our profits is dedicated to supporting local artists and galleries in NYC/Brooklyn and extending our support to international visual artists. By doing so, we aim to foster a vibrant ecosystem where art and technology coalesce.

2.10 SwopX: A Gamified NFT Experience

SwopX is not just about buying and selling NFTs; it's about experiencing them. We have infused gamification into our platform, offering users a myriad of experiences that enhance the utility of their NFTs. One of our flagship projects is an open-world 2D game named SwopXia. This game is built around assets created by our talented pool of artists, offering users a unique gaming experience intertwined with the world of NFTs. But that's not all. We also offer a range of mini-games and metaverse browser experiences. These are designed to be immersive, engaging, and, most importantly, fun. As we look to the future, we see immense potential in virtual reality (VR) and extended reality (XR). These technologies offer unparalleled immersion, and we are actively exploring ways to integrate VR and XR experiences with NFTs. Imagine owning an NFT that is not just a piece of art but a gateway to a new reality. That's the future SwopX envisions.

3. Public Offering of Tokens

SwopX aims to increase network outcomes and demand and to decrease its circulating supply.

3.1 Token Distribution

The total token available to the public at launch is intended to be 1 billion. The specific offering methods are as follows:

Target	Percentage	Amount of APU	Description
Public Investor	15%	150 M	Community entrepreneurs and supporters
Private Investor	15%	150 M	People who provided help at the early stage of the project
Community Rewards	40%	400 M	For participation and promotion of the community
Founding team	30%	300 M	Vested by the founding team for one year

3.2 Budget Allocation

SwopX token will be issued to be used for many things including, but not limited to:

- Node development and operation
- Marketing
- Contracts
- Token Economics

3.3 Revenue Model

Swope' revenue will come from the following services

Service	Description
Transition Fee	The fee users need to pay when buying assets on the platform
Swapping Fee	The fee both users need to pay when swapping assets on the platform
Other Fees	Additional charges for provisions of other services

4. SwopX FAQs

What is the initial price of APU?

The pricing of APU is determined by the market, and varies according to how APU is listed on the exchanges. There will be 1 billion total tokens created with 300 million allocated to Swopx over the course of 3 years.

Are there any restrictions on where Swopx Rewards (APU) are available to users?

Swopx rewards and the (APU) tokens are available to all Swopx users. Swopx is available globally in the countries listed on www.Swopx.com.

Does Swopx charge a fee for withdrawing APU to an external wallet or exchange?

A network fee is charged for all crypto withdrawals.

Can users earn interest on APU through Swopx Earn™?

At launch, APU will not be eligible but Swopx is always evaluating new assets to be eligible for earning

interest and will notify users if APU is added to the approved list of assets.

What is the ERC-20 contract address?

The ERC-20 contract address is currently not public information, but Swopx will add the contract address to www.Swopx.com when it becomes available.

What crypto-currencies are accepted in the Market?

The utility token will be available on the decentralized and centralized exchange platforms.

If you have any questions about SwopX visit us online at swopx.com.

5. Appendix

SwopX Fact Sheet Products and Business Model

About SwopX

SwopX is a platform for buying, selling, lending, borrowing, bidding, making offers, and swapping NFTs with a comprehensive set of analytic tools for pricing, authenticating, and fraud protection. Using AI and Machine Learning for millions of NFTs, we are able to give price forecasts for any NFT even with no prior price or sales history. Users can mint, buy, sell, lend, borrow, bid, make offers, and swap NFTs on SwopX. A buyer pays a fee of 1% of the value for each purchase. For a swap transaction, both parties pay 1% of the value of the transaction. Sellers can mint and list NFTs with no fee.

An NFT borrower can get a loan when a lender is interested in their NFTs. A lender pays a fee of 2% of the value for each borrowing NFT. While a borrower pays 2% of the value of the transaction when the borrower pays back their loan. However, once both a borrower and lender agree to extend the expired time of the lending/borrowing period, the borrower pays fees that are based on the new cost agreement.

The auction contract allows users to bid on an NFT and after the action is complete the NFT owner can withdraw the winning bid. The bidders do not need to pay a gas fee and they can bid as much as they wish.

When users would like to make offers to buy an NFT without paying a gas fee, they need to approve the amount that they are willing to pay to the contract, and once the NFT owner accepts an offer, can withdraw the amount and transfer the NFT to the new owner.

About Apreum

Apreum (APU) is the native utility token for SwopX which rewards users for signing up and any activity on the platform.

Enterprise clients can use Apreum to obtain a discount on API services offered through our business platform.

How Much Is Your NFT Worth?

Get SwopX Appraisal and Authenticity Verification

It is hard to establish fixed values for NFTs, digital artworks, and other collectible items. The amount asked or offered is determined by many factors, including the personal interests of all the buyer, seller, borrower, and lender.

SwopX helps you find an approximate value of your NFTs by utilizing our sophisticated AI algorithm for pricing, forecasting, Borrowing power, and annual percentage yield which takes into account factors including transaction history, and comparability with other market trends and patterns.

Retail Model

Users can register with SwopX to upload their first NFTs. There is no charge for minting.

Get 3 free appraisals with additional requests charged at \$3. Get your NFT verified with SwopX for \$5 per NFT.

NFT Appraisals

Let our AI determine the accurate price for the NFT image you upload. Trained with millions of NFT images and price history data points, our algorithms will come up with the best price you should assign to your newly minted NFT. Just upload a link to a picture, and let our system analyze it. We will provide the price and the list of other NFTs that are most similar to your image.

Data Analytics

SwopX Data Analytics provides valuable insights into all existing NFTs. Easily get access to the price forecast of an NFT to make informed decisions. Additionally, SwopX provides a dashboard with active trends which monitor volume, purchases, price appraisals, and the amount of wallets interacting to give you the ability to browse and rank collections that you are most interested in. You can also get this information at scale with a single API request that takes less than a second to complete through SwopX API integration into your own platform.

Fraud Protection

Our Fraud APIs provide you with an analysis as to whether a given NFT is most likely to be involved in a fraudulent pump and dump scheme. We instantly explore thousands of previous on-chain transactions to measure fraudulent activity.

Enterprise Model

Option 1: API Packages

Integrate downloaded APIs directly into any enterprise application. Three packages are available.

Option 2: Upload your Data as a CSV File

Easily upload your data as a CSV to the SwopX platform. Submit your list of digital addresses and get an output that can be downloaded or emailed once you've provided your payment information.

Choose from one of the three single APIs or get the full package:

Single API (\$500):

Get 500 queries, and pay only \$0.75 for any additional requests.

Package Deal (\$1,350):

Get 1500 queries, and pay only \$0.67 for any additional requests.

NFT Appraisal

Data Analytics

Fraud Detection

*Pay with Apreum to get an additional discount of 10%.

Coase Theorem: A More Efficient Exchange

Within the realm of transaction costs, Coase Theorem[7] states that a swap function enables the exchange of distinct items and services, ensuring equitable treatment of unique identities. This principle ensures that successful matches align with the identities involved. Swapping accommodates diverse identities, whether they increase or decrease. For instance, a single swap transaction can incorporate multiple token identities when guided by appropriate conditions. This approach extends to scenarios where users efficiently trade one or multiple items for others within a single transaction.

This strategy can be implemented to optimize non-fungible tokens and will develop useful tools for use in the SwopX platform. The SwopX protocol is built to allow a peer-to-peer exchange of physical assets and services. Figure 4 shows the highlight model workflow of the platform. A

user signs up into the platform and is associated with a unique Id. The user can view other users' items and also can mint a new item or service. Users can send their interest and receive a notification of other users' interest before swapping to an item or a service.

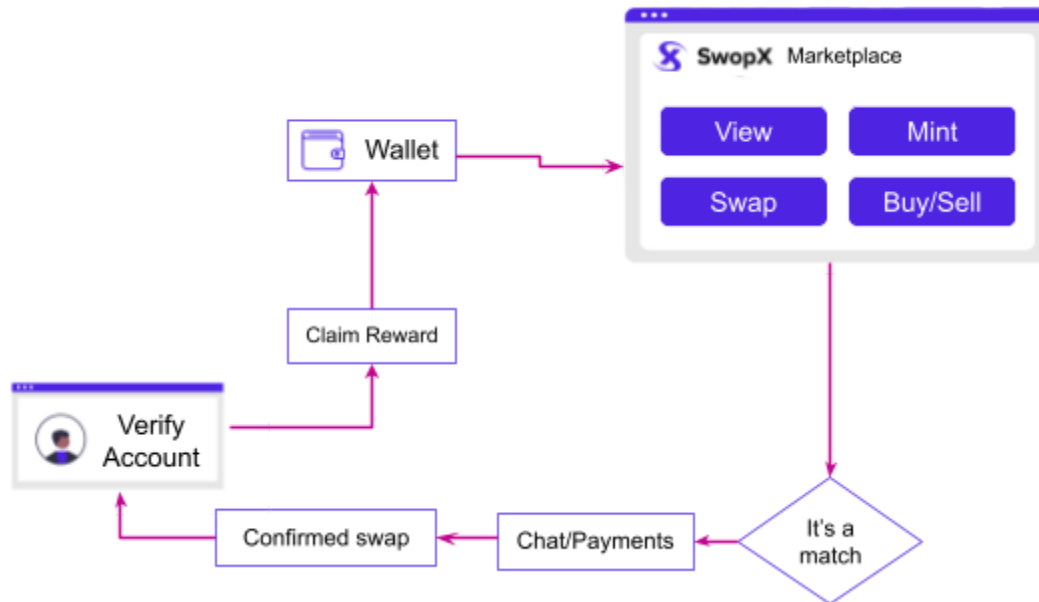


Figure 4 - Workflow of the Platform

This shows that a user exchanges items or services for getting rewards. Each participant can mint and own new non-fungible tokens for their physical or digital assets and services that contain their tokens Id and metadata. The identified features of supporting smart contracts such as ownership, metadata, minting, and swapping. Once both token ids have confirmed the swap, these token ids will have their ownerships transferred to their new respective owners. Technology has been evolving and providing characteristics to improve efficiency and automate significant roles to help communities and societies. SwopX introduces some of the components to enable exchanging services and physical or digital assets on multi-blockchains. These include the methods for management of smart contracts aimed to provide a solid platform for exchange.

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