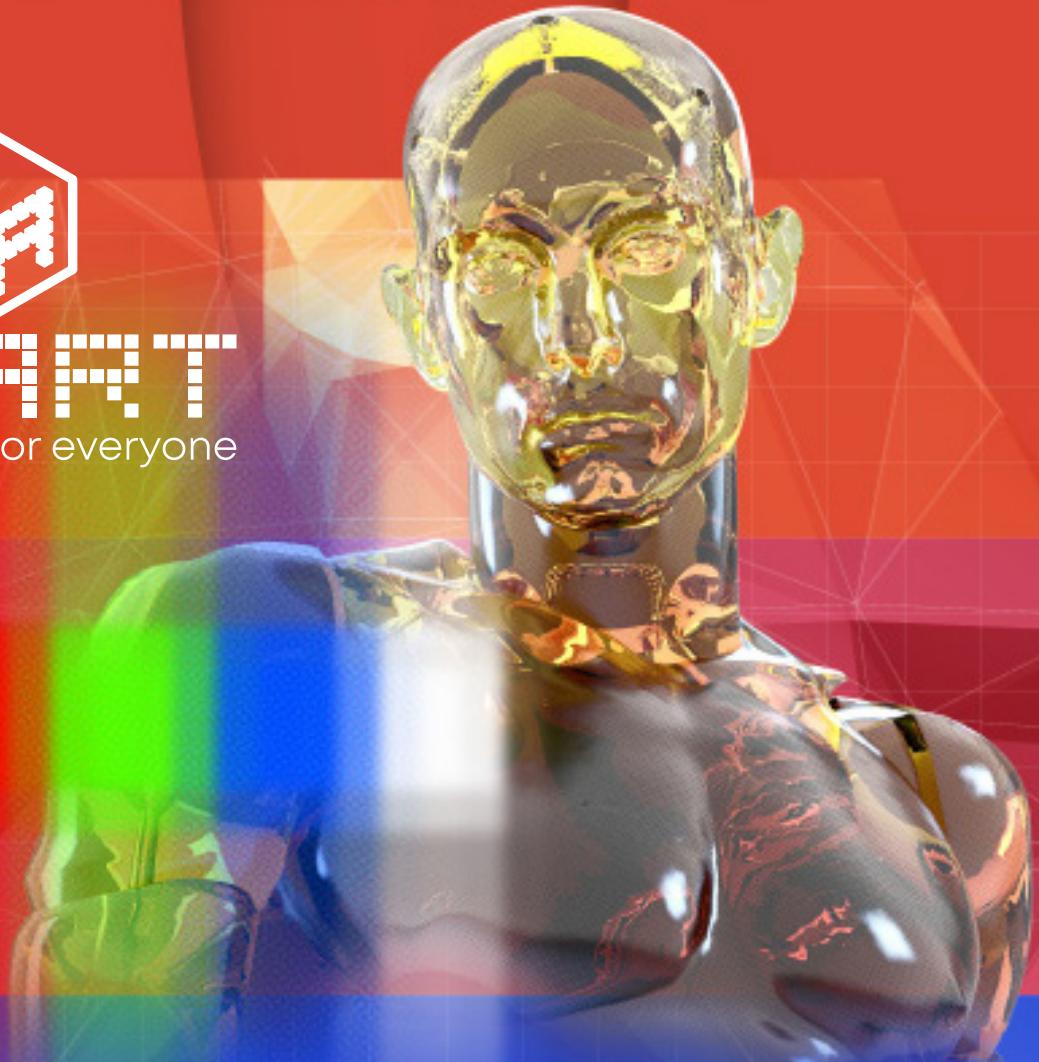


WHITE PAPER 2.7

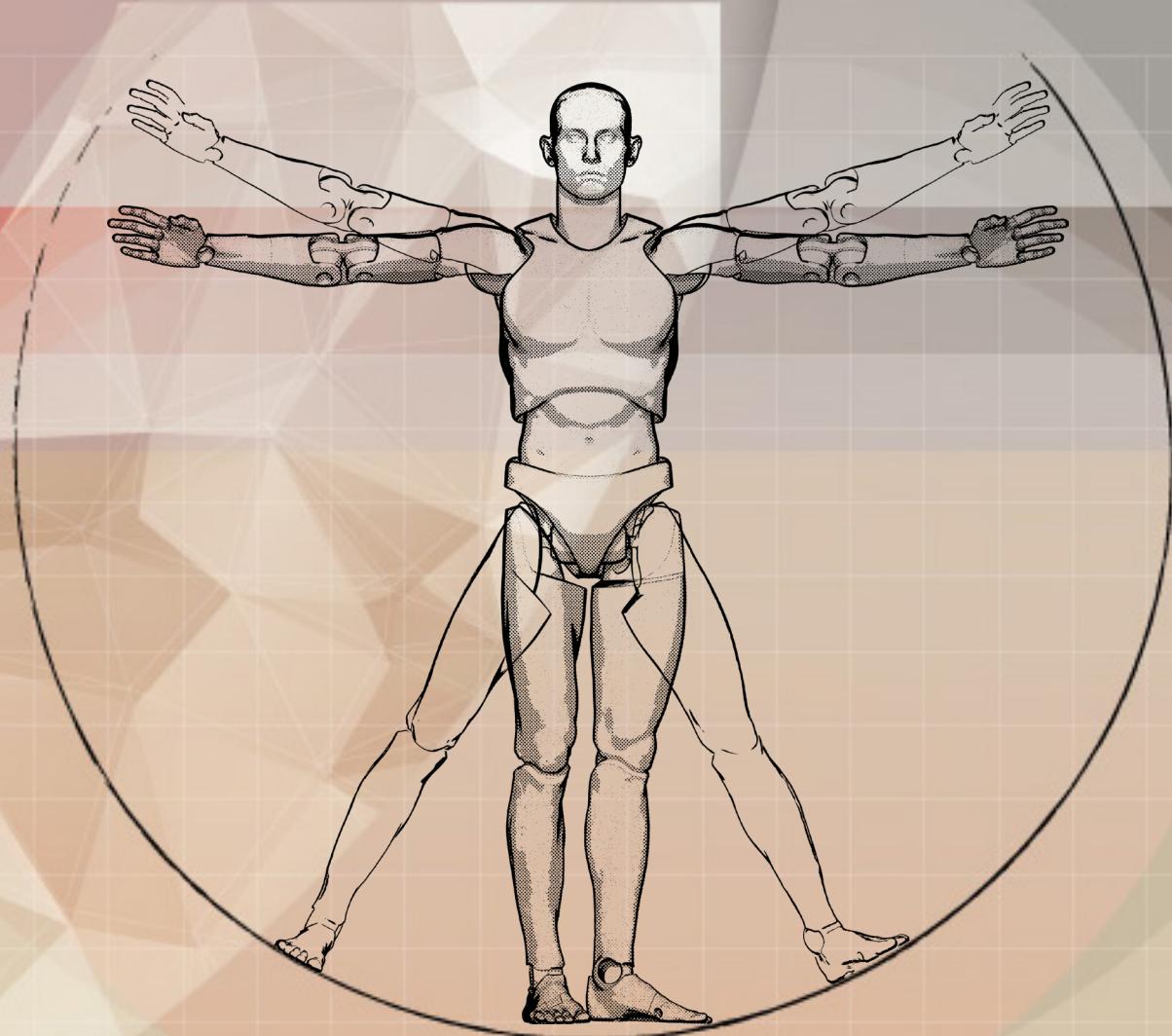


COART
a bit of art for everyone



ABSTRACT

Crypto-Renaissance — this is what you can call what is happening now on the Art market. Just like five centuries ago, values are changing before our eyes. As a result of the emergence of technology that has overturned the usual way of life.



Then it was typography — now it's blockchain, and specifically, NFT, which gives digital artists a direct way to monetize their creativity. NFT certification can be as beneficial for millions of artists who use traditional materials as for digital artists.

After all, NFT (non-fungible token) is not an art object as such, but a unique crypto certificate containing information about a work of art, be it digital art, traditional painting, sculpture, or mixed media.



ABSTRACT

Along with the NFT revolution, there is also a growing focus on the environmental aspect. It is driving the abandonment of NFT marketplaces based on the Ethereum network. In favor of environmentally neutral blockchain networks which use DPoS and PoS protocols.

The algorithm for tokenization of physical art objects, developed by us based on the Symbol blockchain, allows us to create crypto-certificates of the NFT standard for any art objects.

CoArt-NFT represents a unique physical or digital art object on the Symbol blockchain (by NEM Group) network, which has an environmentally neutral DPoS+ protocol.

Artists, collectors, dealers, consultants, and experts can use CoArt-NFT as a convenient, multifunctional tool in the face of the growing influence of crypto-economics on the traditional art market. All open data is stored on the blockchain, ensuring information accuracy. However, allow participants in transactions to maintain personal confidentiality.

Another significant component that differentiates us from both traditional online galleries and growing NFT marketplaces is the virtual space associated with the blockchain platform at the code level. Due to this, each online gallery on the CoArt Marketplace has unique coordinates in the VR space of CoArt Space.

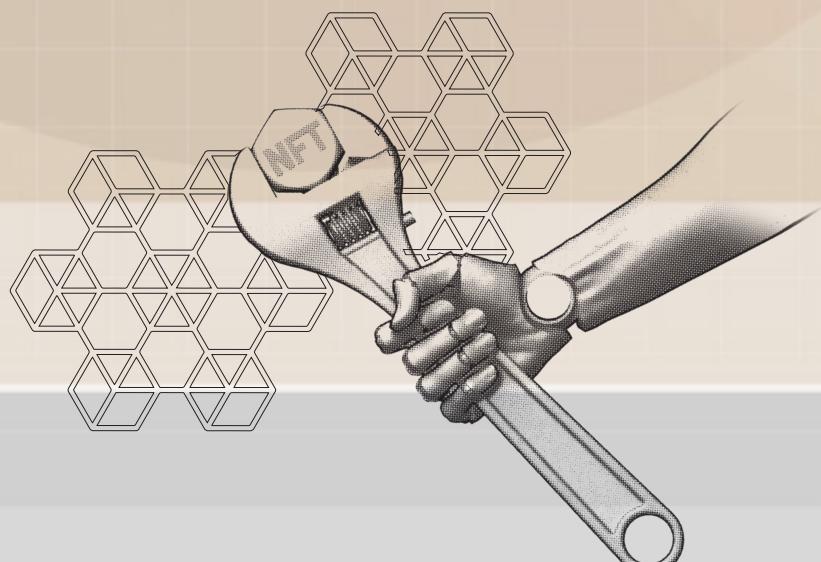


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1. THE TARGET AUDIENCE

The number of new artists inspired by the example of Contemporary Art Stars is growing. They need media, freedom of expression, and space for exhibiting.

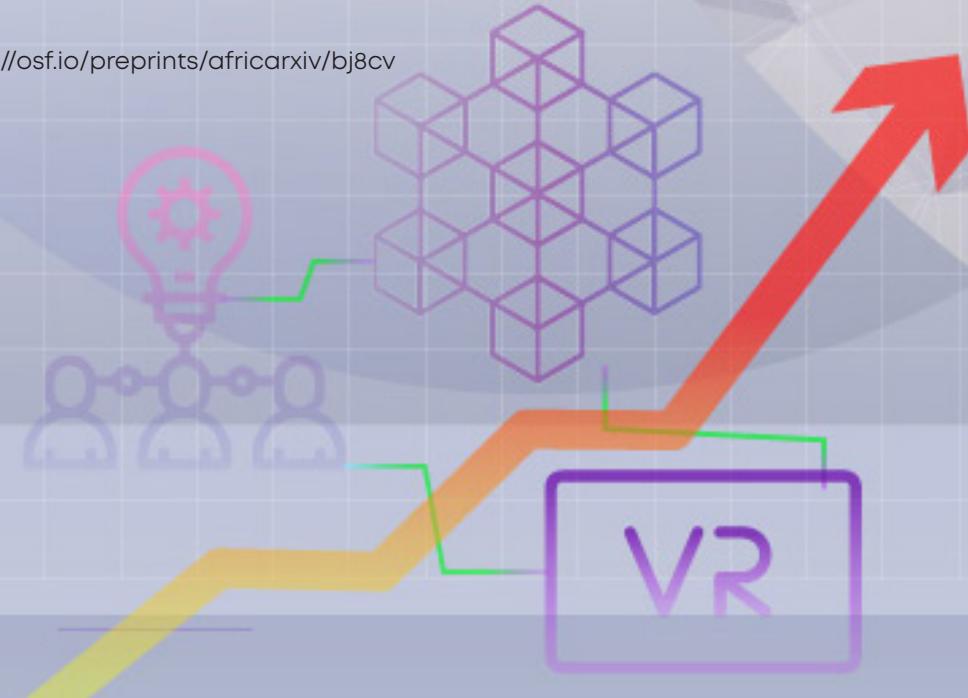
The number of new collectors investing in art assets is also growing. During their childhood and adolescence, the news reported hundreds of times about new art auction records. New collectors learned from childhood that art grows in value.

At the same time, a growing number of art experts and consultants are ready to provide new artists and collectors-investors with art consulting services, preliminary certification, or art examination of works at an affordable price.

In line with our Mission, we strive to bring more freedom, recognition, and earnings to artists. Help maximize profits and cut costs for collector-investors. And create an opportunity to earn and improve their rating in the profession for art for consultants/experts.

That is why we are building the CoArt platform as a new communication system for the Art market, using the capabilities of Blockchain, VR, and Collective Intelligence (Ci) technologies.*

* <https://osf.io/preprints/africarxiv/bj8cv>



2. ECOSYSTEM COMPONENTS

2.1. Marketplace

CoArt Marketplace is a platform for the simultaneous display of physical art objects and Crypto-Art. Taking the basis of the capabilities of the CoArt blockchain platform, the marketplace interacts with several subsystems — Decentralized expertise (DAC), Distributed Provenance ledger, CoArt Storage, and CoArt VR Space. All of them unite on a blockchain basis and a common payment subsystem.

Thanks to the Smart-contracts and specialized escrow accounts, transactions are carried out without the need for subjective trust between parties.

CoArt Marketplace provides automated solutions for online examination of new works, accurate identification of art objects through a unique fingerprint technology, transparent recording of transactions, and ownership transfers. Showrooms display only those art objects that have passed pre-moderation — have received a positive Ci-examination certification.

To put an asset for sale, the owner needs to select the Create CoArt-NFT function in the control panel. It automatically creates the crypto-certificate of the selected object. Its hash is visible in my art-assets section.

By purchasing an art object, provided with an NFT certificate, the investor receives it in a form that is ready for subsequent resale. Affiliate companies carry out the delivery and insurance of physical art objects.

According to the roadmap, in July 2021 we will launch the first iteration of the RAT (Riskiest Assumption Test) marketplace using Agile methods.*

* <https://medium.com/mindsea-development-inc/why-your-rat-riskiest-assumption-test-is-the-real-mvp-177d66cde3e1>



2. ECOSYSTEM COMPONENTS

2.2. CoArt blockchain platform

We have been developing ecosystem architecture since 2018. At first, we focused on the capabilities of the Ethereum network. But we saw its vulnerabilities associated with congestion, the growing cost of transactions, and harm to the environment. Because of this, we welcomed the creation of EOS. We participated in the work of the EOS Lithuania team. However, the launch of the EOS Mainnet also fell short of all expectations.

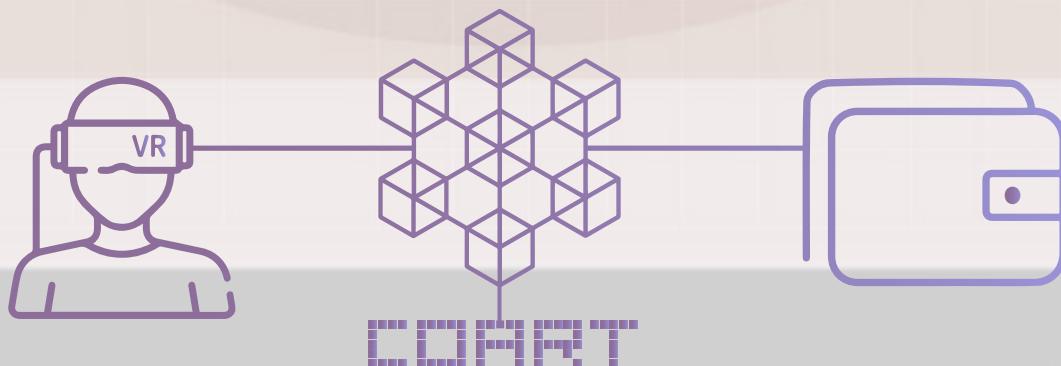
As a result, we created a platform architecture based on the Symbol blockchain, having gained deep experience of interaction with the core development of the NEM Group, working on the creation of the LBCOIN project for Bank of Lithuania in 2019-20. *

The Symbol blockchain is an excellent solution for optimizing transaction costs and scaling essential elements of the CoArt ecosystem, such as:

- CoArt distributed Provenance ledger. It is a distributed registry containing all open data about the history of an art object's ownership.
- CoArt Storage is a data storage subsystem sufficient for accurate identification of an art object using IPFS (InterPlanetary File System)). **
- CoArt VR Space is a VR(virtual reality) space where we display physical and digital art assets in VR galleries as multifunctional NFT certifications.

* <https://lb.lt/en/news/bank-of-lithuania-issues-lbcoin-the-world-s-first-digital-collector-coin>

** <https://ipfs.io>



2. ECOSYSTEM COMPONENTS

2.3. Main advantages

Transparency. Since blockchain stores all NFT certificates, information about the art object and the history of transactions will always be available and reliable.

Programmability. CoArt-NFT allows you to make royalty payments automatic. That is, traditional artists will be able to receive a percentage of each subsequent resale of their physical work, just as the creators of CryptoArt are now receiving such payments. To develop such a mechanism, we rely on the research of Amy Whitaker and Roman Kräussl “Blockchain, Fractional Ownership, and the Future of Creative Work.”*

Liquidity. CoArt-NFT not only confirms the originality of an art asset but also allows you to put it up for sale in a few clicks, independently determining the price using fiat money or cryptocurrencies.

* https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3100389



3. THE MARKET

3.1. Traditional Art Market

During the second half of the 20th century, the world art market has shown a rise in prices that has never happened before. Art objects have received the status of highly profitable investment assets. Investors acquire more than 90% of Blue Chip-level art assets for investment purposes. The return on investment for early work by authors such as Basquiat (1960-1988), Keith Haring (1958-1990), or Banksy (born 1973) is in the thousands of percent.

However, in the traditional art industry, there are many intermediaries between buyers and sellers. By purchasing art assets from dealers or at auctions, investors overpay from 25% to 100% of the asset's value, and this is not counting the costs of legal support of the transaction and insurance.

Besides, the lack of automated standards for the transfer of ownership of art objects creates additional costs for collectors. To sell a previously acquired asset, they may need to go through the entire pre-sale cycle again, contacting dealers or auction houses to pay them the commission again.

That is not very pleasant to new collectors from Y-Z generations, who prefer to catch new stars themselves. The art scene is taking off. The number of such collectors is growing, and their behavior as art investors is already significantly influencing the traditional art market.

According to Artsy's The Online Art Collector Report 2019, they trust more online purchases, are less willing to communicate with dealers, and seek to reduce intermediary costs by more often seeing art acquisitions as investments.*

* <http://files.artsy.net/artsy.net/online-art-collector-report>



3. THE MARKET

No doubt they love the example of a collector like Robert Tibbles, who bought the young Damien Hirst for hundreds of dollars in the late 1980s and sold one of these for \$ 2.3M at Phillips in 2020.*

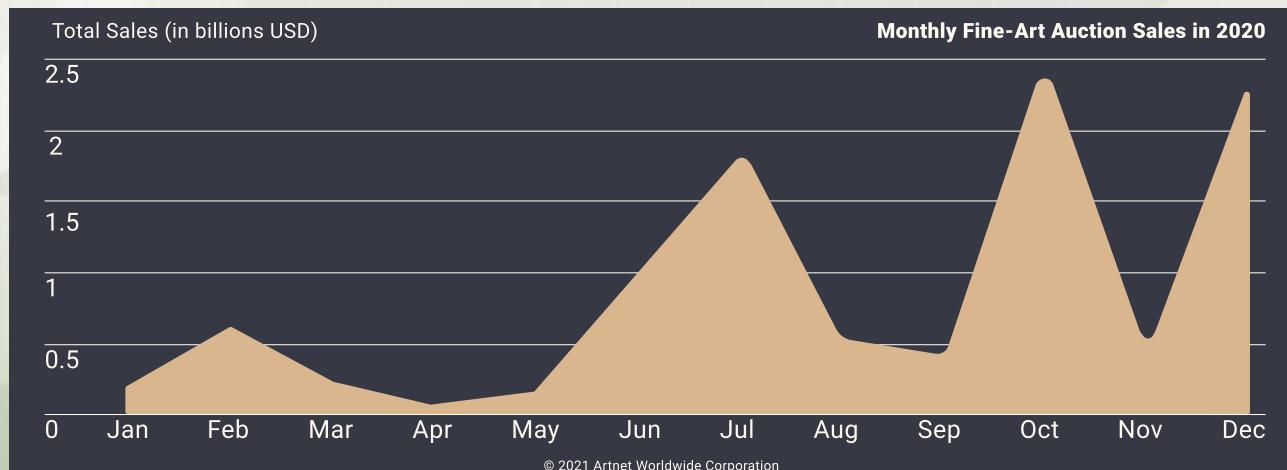
Like most millennial collectors, Robert Tibbles was not afraid to invest in the art based on his perceptions. Now, more people are similar to him in terms of their views on art investment. They do not want to overpay to intermediaries, but they need quality guidelines — who to buy and on whom to bet.

However, even in 2020, against the background of unprecedented turbulence associated with the pandemic, this did not prevent the auction sales of the Big Three (Christie's, Sotheby's, Phillips) from growing by 50% year on year, according to ArtNet report Spring 2021.**

Physical art assets will become even more attractive as investments when their turnover is simplified as much as possible thanks to the use of unique NFT certificates that enable peer-to-peer settlements in any currency.

* <https://news-artnet-com.cdn.ampproject.org/c/s/news.artnet.com/market/robert-tibbles-collection-phillips-1771608/amp-page>

** <https://artnet.com/artnet-intelligence-report>



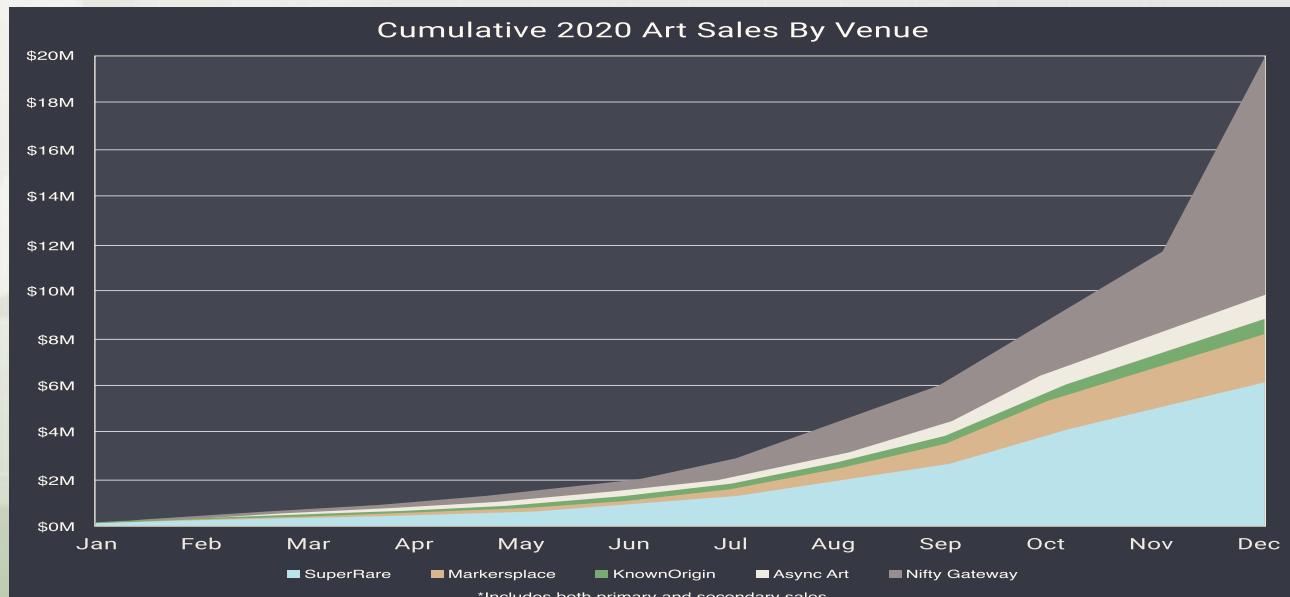
3. THE MARKET

3.2. Growing Crypto Art Market

The growth of the NFT-Art market in 2020 speaks for itself. And sales volume for the first months of 2021 has already exceeded the cumulative volume of the previous one. And there are no signs of slowing down yet, despite the considerably increased cost of creating an NFT using the Ethereum network (GAS fees).

Many people wanted to be a part of it, and the number of new NFT marketplaces is growing day by day. People with names are joining the hype, and now Geoff Osler, in the past one of the leaders of Apple, announces the launch of SiNG - a project to simplify the NFT minting mechanism based on Ethereum as much as possible, and one of the Ethereum co-founders - Joe Lubin - about the creation of PALM - NFT-marketplace, 99% more energy efficient according to its creators, albeit 100% tied to the Ethereum network. Besides, Damien Hirst is the frontman of the new marketplace, trying to monetize 10000 copies of his works from five years ago.

Probably, thanks to such undertakings, CryptoArt will flood the Ethereum network space with junk NFTs, and the primacy in the creation of NFT certificates will go to new blockchains that use environmentally neutral DPoS and PoS protocols.



3. THE MARKET

3.3. Virtual exhibition spaces

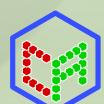
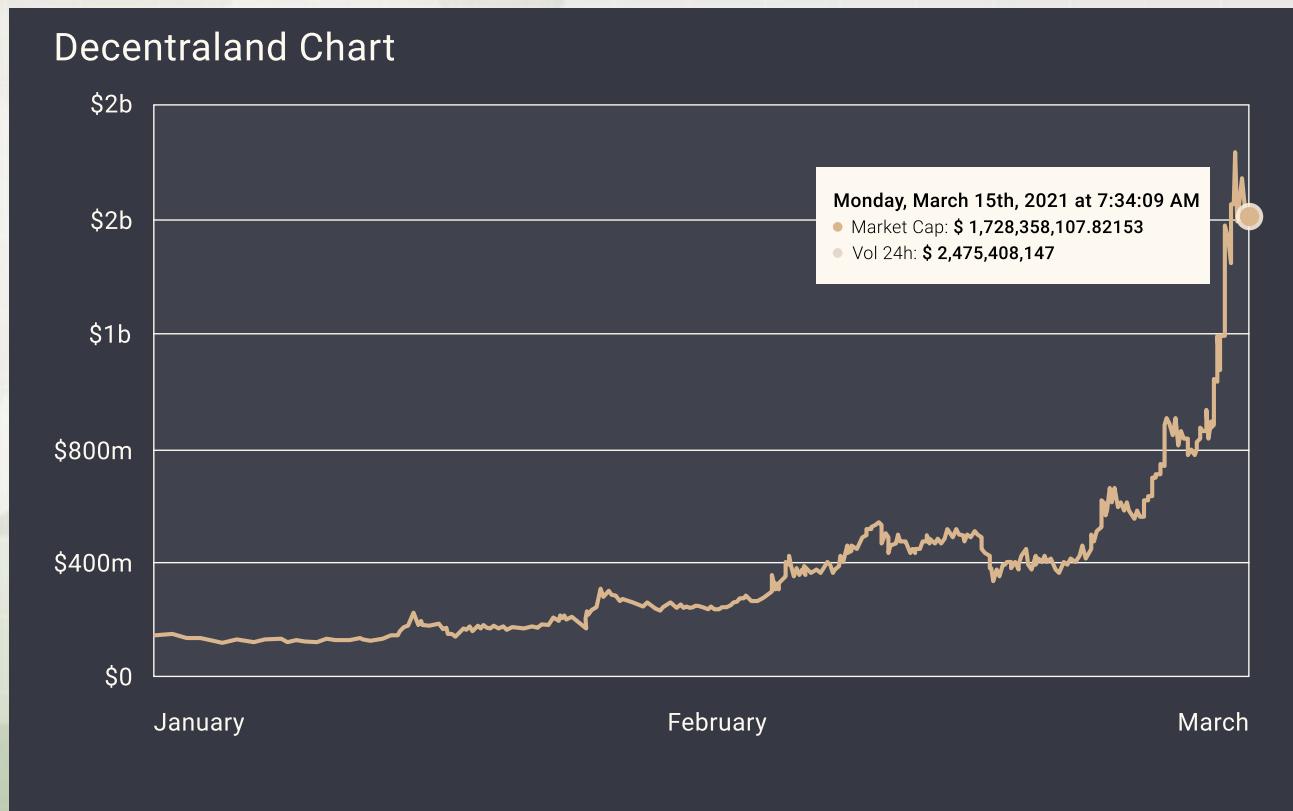
Market growth spurred interest in virtual platforms for exhibiting art objects and holding online events with the illusion of presence.

In particular, the MANA token of the Decentraland project has increased in price more than ten times since the beginning of 2021. Aforementioned directly correlates with the development of the NFT Revolution in the Art market.

The art market, having experienced stress due to the cancellation of 85% of offline events in 2020, is more and more involved in the global trend of using immersive technologies to organize virtual events.

Already, the size of the global market for such events is more than \$ 78 Billion, and it will continue to grow at an average annual growth rate of 23.2% until 2027.*

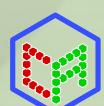
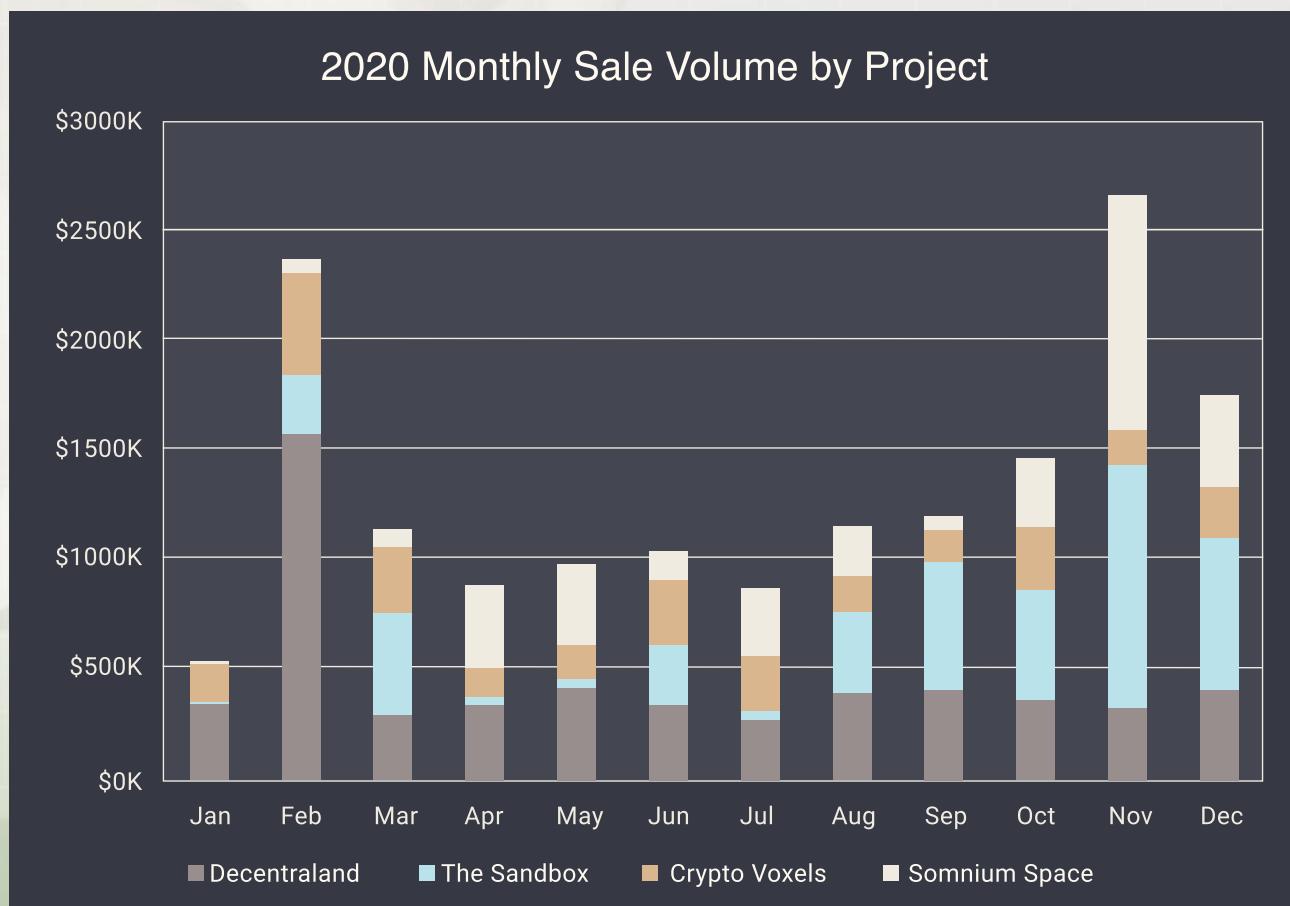
* <https://markletic.com/blog/virtual-event-statistics>



3. THE MARKET

The increase of interest in virtual exhibition spaces (MetaUniverses) is visible in the growth of token sales of other projects throughout the past year. In 2021, as follows from the example of Decentraland, this trend has only intensified.

So, some want to create and sell, others create value, invest and increase their capital. Are intermediaries needed between them? Notaries, banks? Each intermediary adds costs. The fewer there are, the better, which is why we are building CoArt Marketplace as an opportunity for peer-to-peer relations of a new level using trustless protocols for all participants in the Art market.



4. THE STRUCTURE

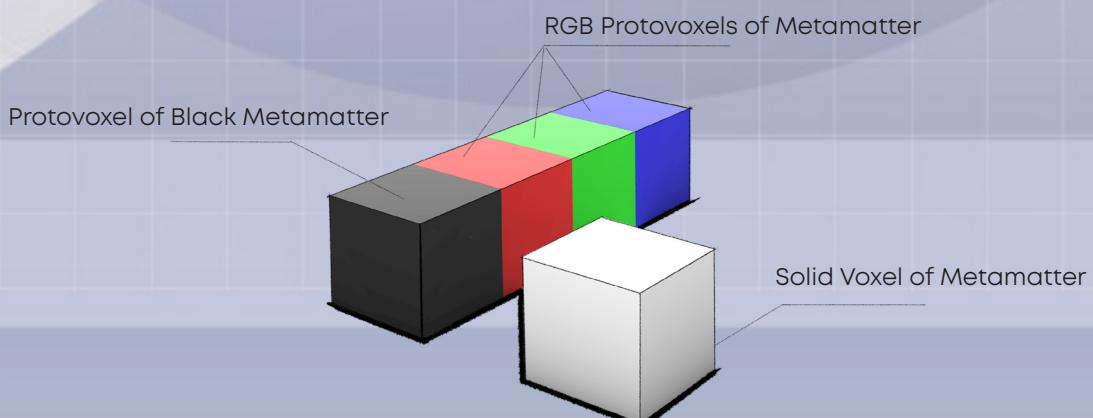
By registering an account, you receive a personal crypto-ID that includes the CoArt Wallet. It is your integral asset on the Symbol blockchain network. Further, you can add as many multisig service accounts as you like to the main account, each of which will be a separate online gallery, which, in turn, has its unique crypto-identifier on the network. We call these galleries showrooms.

By adding service volume tokens(VXL-tokens) to the account of a specific showroom, you can bind it to the spatial coordinates of virtual reality. Your VR showroom can be close to the Main Square of the VR Space or, on the contrary, will take its place in one of the thematic clusters.

On the showcases of your showrooms, you can put up for display and sale any number of art objects and display them simultaneously in 2D and 3D versions - like photos, videos, or GIFs on the CoArt Marketplace pages and as VR projections of the corresponding art objects in the Metaverse CoArt VR Space.

At the same time, NFT-certificates of art objects contained in CoArt Wallet can be transferred to new owners both separately - in the course of transactions for the sale and purchase of specific art objects, and together with the showroom account containing them.

We think this will stimulate Farming, the massive creation of online galleries filled with art assets to resell them as ready-made business units. Also, it can grant development to new forms of investment Art funds.

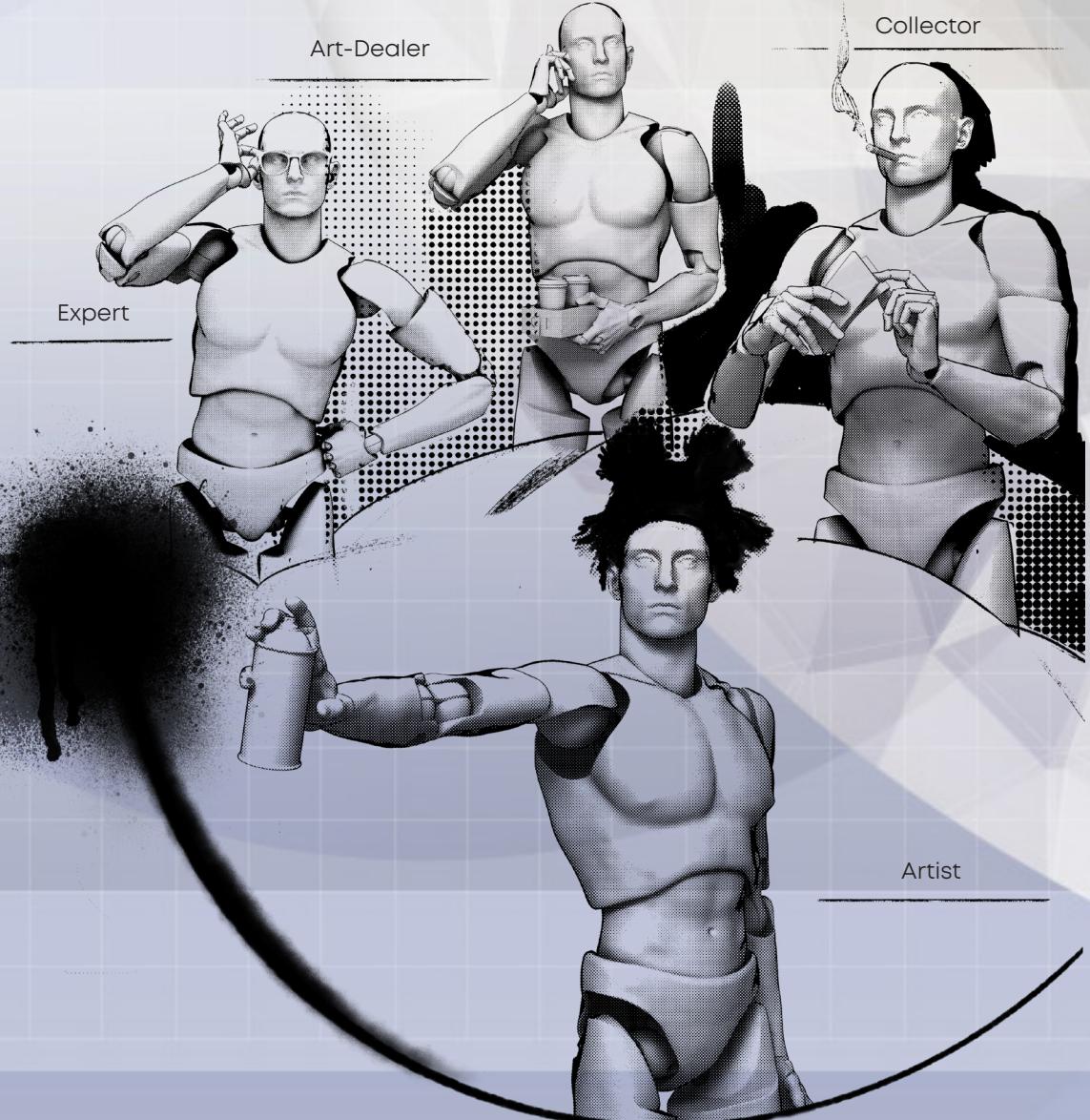


4. THE STRUCTURE

4.1. Roles on the Marketplace

All accounts contain the same set of options. Users can choose to participate in any of the roles offered by the platform.

You can exhibit your art objects for display or sale. Purchase art objects, resell previously acquired art objects. Represent the interests of third parties on the platform as an art dealer, or participate as an art expert using the same Control Panel.



4. THE STRUCTURE

4.2. Decentralized Art Consulting (DAC)

We have developed the Decentralized Art Consulting (DAC) module as an innovative software product. The module uses algorithmic opinions processing of an art experts group for attribution and pre-moderation of art objects posted by users on the showcases of their showrooms.

DAC is based on the concept of Collective Intelligence (Ci), which means that art experts who are part of an interactive group act impersonally and asynchronously in a decentralized environment.

To improve the evaluation quality, we provide a motivation system. It affects the rating and amount of reward for each member of the expert group.

Today the Ci phenomenon is already being applied in practice in various fields.*

We use Ci algorithms to analyze the artistic value and determine the objective value of new art objects. This algorithm can predict the possible dynamics of price changes of an art asset for five years ahead.

The use of such tools will give investors the information they need to make their own decisions, for which they now overpay to chains of intermediaries, artificially limiting the growth of the market.

As a methodological basis for DAC, we use the Ci algorithmic platform developed by Dr. Saulius Norvaishas, Former Dean of the Faculty of Social Informatics at MRU (Mykolas Romeris University, Vilnius, Lithuania) and co-founder of CoArt.

* <https://thortspace.com>

<https://unanimous.ai>

<https://enswarm.com>



4. THE STRUCTURE

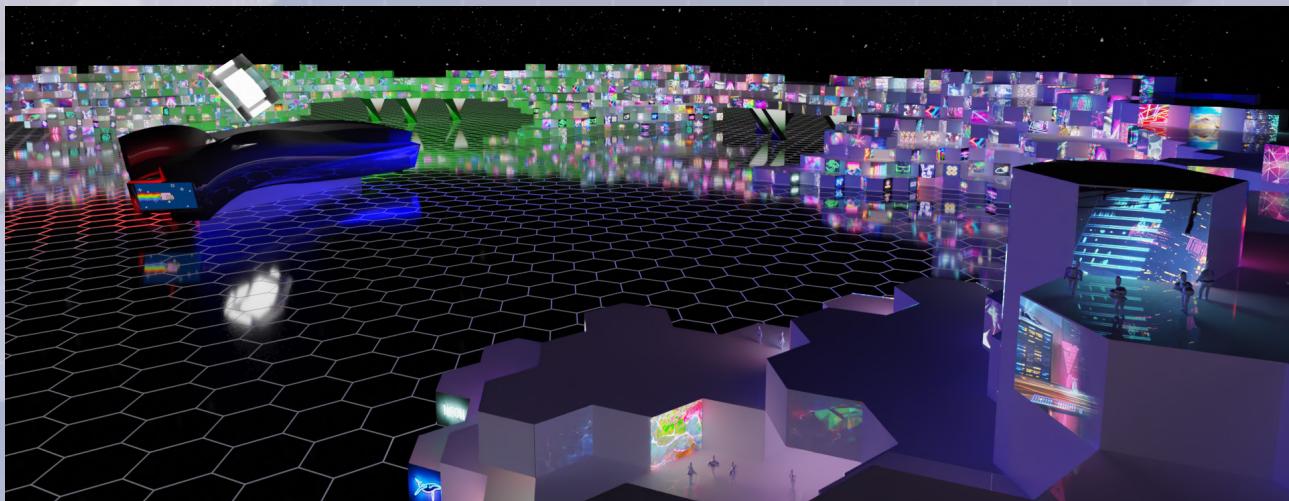
4.3. VR Space

Using a blockchain platform gives you inalienable rights to manage your VR showrooms in the 3D space of CoArt Space. Similar to the function of the LAND token in the Decentraland.org space.*

Imagine a colossal Meta-Sphere whose architectural structures are projected using generative architecture. The connection to the blockchain backbone allows the entire inner space of the Sphere to divide into cubic feet, each of which is equal to one VXL token.

In the Spheres center, there is the “Main Square” – the central public space of a permanent art performance, into which all visitors using VR devices enter. Except, of course, when they go straight to specific showrooms using their exact coordinates. The square faces the facades of hundreds of private VR galleries and in its middle stands the building of the Central Museum representing exhibitions of artists from all over the world. We call this CoArt VR Space.

* <https://decentraland.org>



5. BUSINESS MODEL

Incoming cash flow consists of one-time and operating revenue and income from the sale of services within the Ecosystem.

One-time income includes payments for the creation of new showrooms in the form of unique multisig accounts. The estimated cost of such registration is €10.

Operating income includes a 10% commission that automatically charges sellers during the sale process using smart contracts.

Also, the platform will charge small transaction fees in tokens on all transactions displayed in the distributed Provenance ledger. It is still unknown to specify the exact size of such fees since it is a dynamic value, but one can say right away that it will be ten times less than the GAS fees charged on the Ethereum network.

Inter-system services include customization of VR galleries and the purchase of additional VR space for them, expressed in cubic feet.

At the same time, CoArt Marketplace, as a service platform, is aimed at a wide range of users who do not need to understand the details of what a blockchain is and how smart-contract technology works.

Users only need to know which buttons of a convenient, user-friendly interface they need to press to get the desired results.

The Unique Selling Proposition is a connection in one user account of the functions of access to decentralized art expertise, the creation of CoArt-NFT certificates, the tracking of property rights to assets through the Provenance ledger, and the display of art objects in the Metaverse CoArt VR Space.



6. TOKENOMICS

The blockchain architecture of the CoArt platform includes - personal blockchain user accounts with multisig CoArt Wallets, multisig accounts of showrooms (that can be bound to CoArt VR Space coordinates).

Also, NFT certificates of art objects, as well as VXL service tokens that create the volume of virtual showrooms when added to multisig showroom accounts with VR coordinates.

The ecosystem's payment token is Symbol XYM.

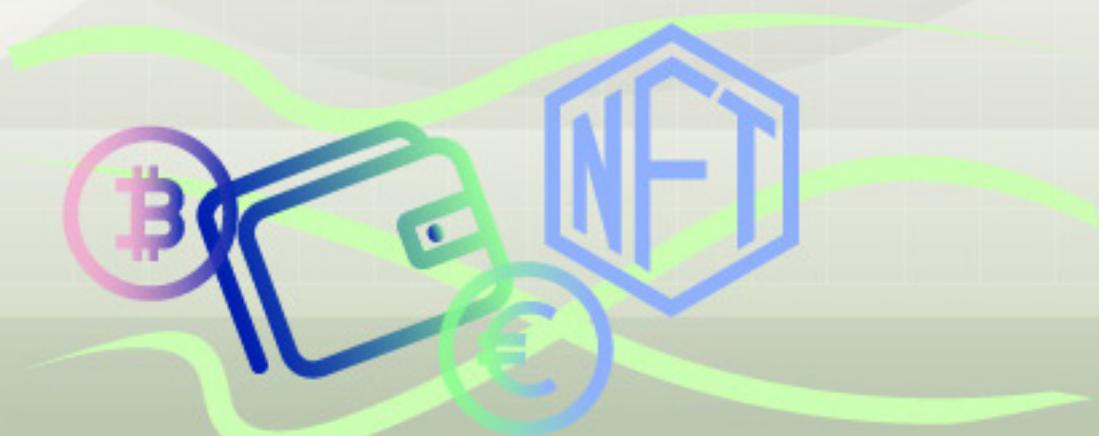
VXL tokens are issued in the Symbol blockchain standard and are intended only for the reservation and purchase of virtual showrooms in CoArt VR Space.

Each VXL equals one cubic foot of virtual space.

Listing of Symbol VXL tokens on crypto exchanges is not expected. Therefore, specifically for interaction with external exchange platforms, we plan to list our CAV tokens (CoArt VR tokens) ERC20 and BEP20 standards on PancakeSwap and Uniswap.

CAV tokens are exchangeable for VXL tokens 1:1. With enough CAVs purchased elsewhere, you can convert them to VXL using your CoArt Wallet.

Next, you transfer the VXL to the multisig account of your VR showroom to bind it to the coordinates of the CoArt VR Space. For example, to reserve a VR showroom in the first ring of galleries surrounding Central Square, you will need at least 9'977 VXL.

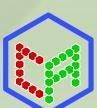
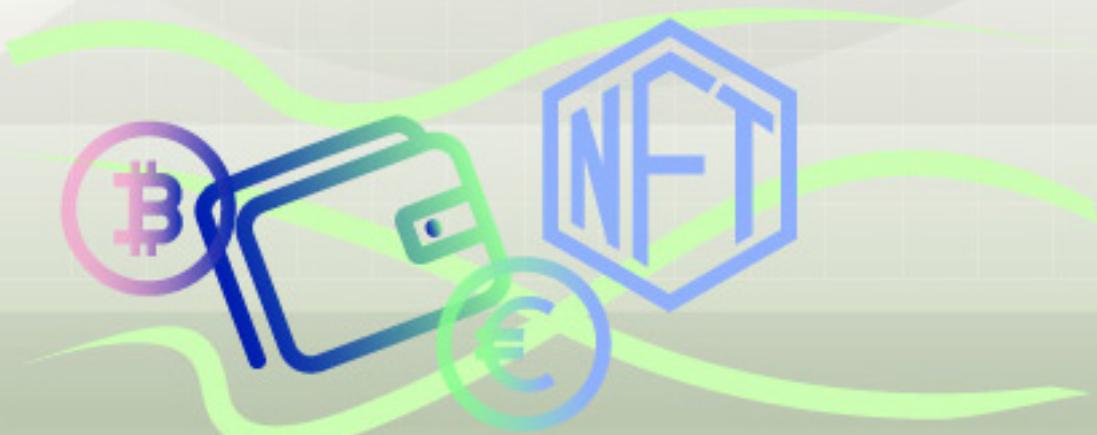


6. TOKENOMICS

VXL tokens used to purchase virtual space remain frozen in showroom multisig accounts tied to specific coordinates of CoArt VR Space. This space will consist of them because VXL tokens are equal to cubic feet of virtual reality.

The CAV tokens, you used to convert to VXL will be returned to our pool of tokens intended for interaction with external exchanges. They will be used again, only after the entire volume of the first ring of VR showrooms, amounting to 18'000'000 cubic feet (Ft³), has been fully distributed among the multisig user accounts in the form of VXL tokens.

Thus, the circulation of VXL / CAV tokens is driven by the limited volumes of virtual reality of CoArt VR Space, which are offered for reservation and use as our specialized Metaverse expands.

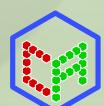
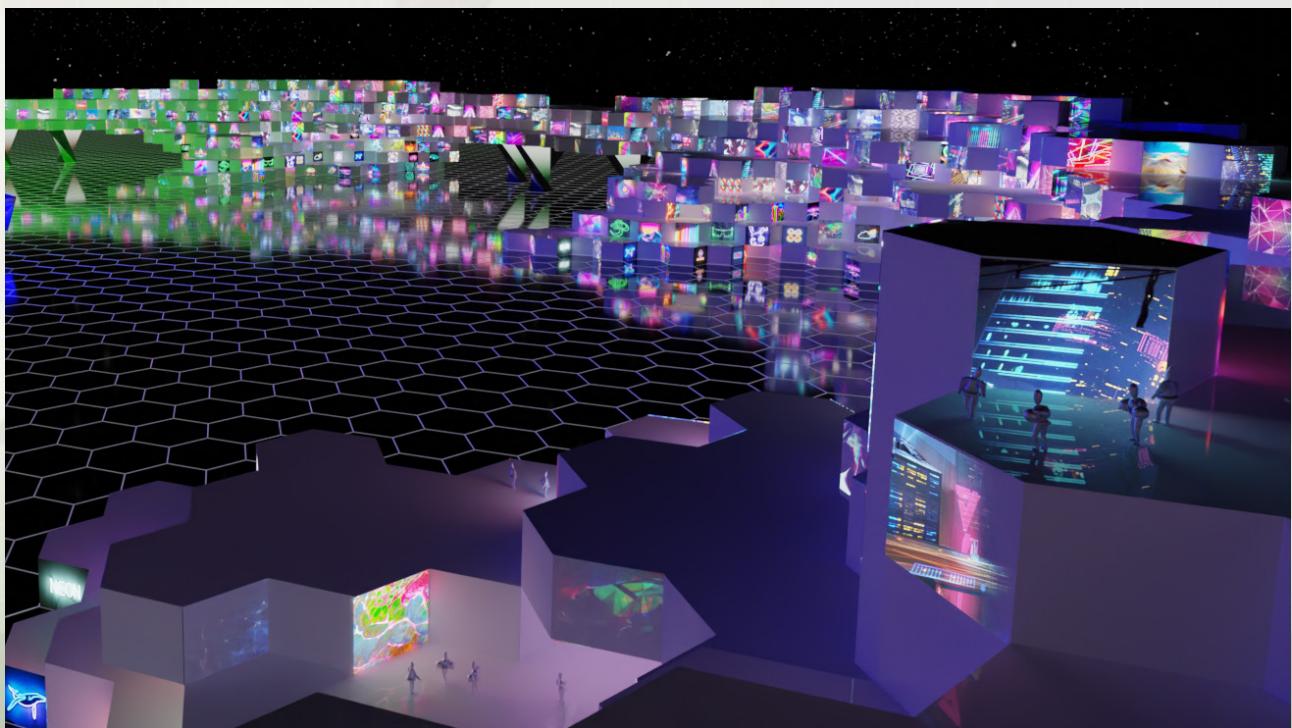


6. TOKENOMICS

6.1. Escrow mechanism

We create an on-ramp payment gateway with an escrow mechanism that allows sellers and buyers to pay and receive rewards in any freely convertible currencies.

When Seller puts an art object for sale in the showroom, platforms automatically create a CoArt-NFT of this asset.



6. TOKENOMICS

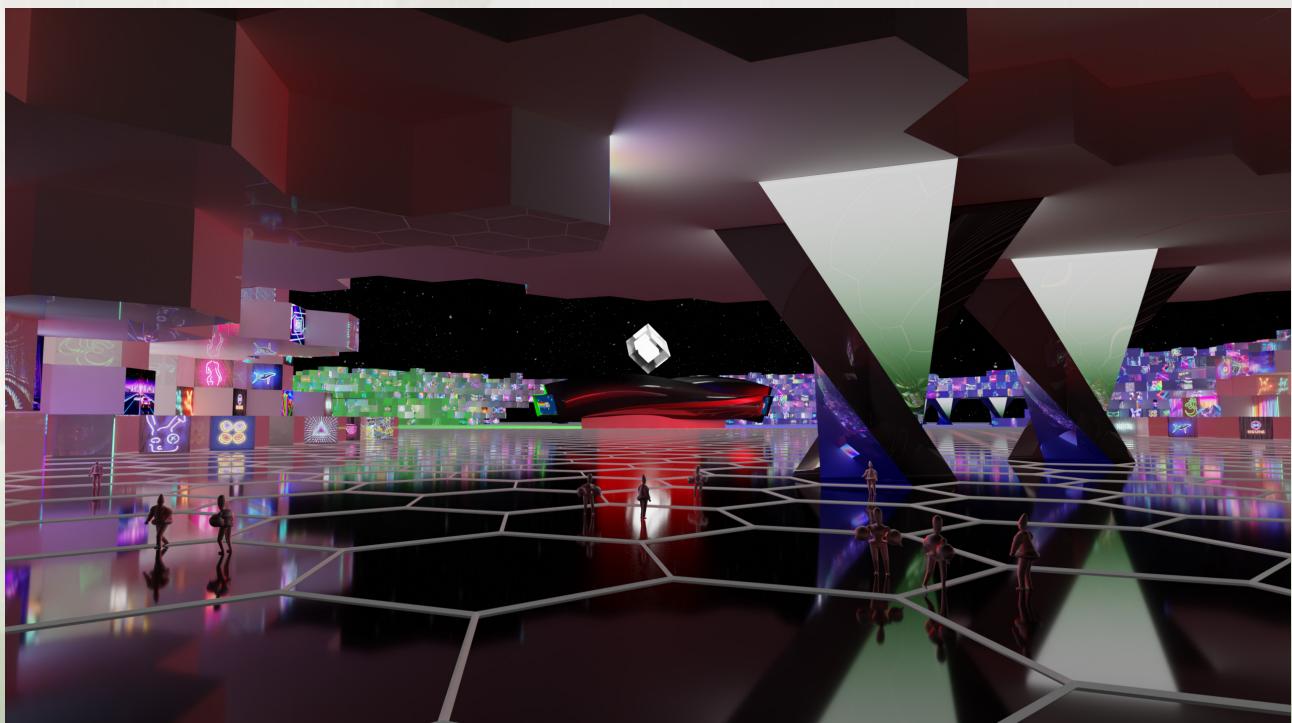
6.2. Token allocation

The total emission of service tokens (VXL) of the ecosystem is 900 million. The issue will be carried out in stages.

This number includes 18 million ERC20 and BEP20 CAV tokens issued for early crowdfunding and interaction with Uniswap and PancakeSwap exchanges. Users can convert these tokens into VXL tokens, as we offer new CoArt VR Space sectors for reservation and use.

VXL tokens are used only for fixing and changing the spatial coordinates of VR galleries in CoArt Space.

We fully intend to use received funds during the token sale crowdfunding for the development of the project. You can find the exact information on the distribution of funds in the smart contracts of the respective CAV tokens. The specific allocation of funds depends on the current needs of the project.



6. TOKENOMICS

CoArt is not only Coin-Art and Co-Investment Art but also Collaborative Art. Therefore, we immediately invite artists and art dealers to create collaborations to jointly occupy the most attractive places in the first "belt of galleries" surrounding the Main Square and the Central Museum CoArt VR Space.

For registration in the referral program, we give one cubic yard (Yd^3) of virtual space CoArt VR Space, consisting of 27 VXL-tokens of volume, corresponding to one cubic foot each.

VXL is an abbreviation of the word "Voxel" — cubic pixel — the minimum brick of our new VR space.

Tokens are transferred to the participant of the referral program immediately upon completion of registration — to the newly generated CoArt wallet.

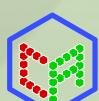
VXL tokens by themselves do not have any given spatial coordinates, being completely fungible tokens. Only by registering VXL tokens in the CoArt VR Space coordinate system users lock them to a specific part of the space.

With one cubic yard ($Yd^3 = 27 \text{ VXL}$), it is already possible to register the coordinates of the new VR showroom. In such a "virtual cube" with a side length of three feet, it will already be possible to exhibit an art object (for example, one painting, a small statue, or jewelry).

However, the official space of the VR showroom of the first ring of galleries surrounding Central Square is 468 cubic yards, which is equal to 9977 VXL.

It is clear that by adding VXL tokens 1+1, it is hard to collect the gallery space. So, collaborations make it possible to increase the space of the gallery.

The first collaboration of two members, each holding one Yd^3 (27 VXL), will double the total amount. Which they then jointly own.



6. ТОКЕНОМИКА

The collaboration will give them four cubic feet of VR Space for two, as co-owners of one multisig-account, which is the basis of the new VR gallery. A multisig account in the Symbol blockchain network, confirming their ownership of a specific showroom with unique coordinates in VR-space.

When a third member joins them with one yard earned for registering in the referral program, their total area will double again using this formula:

$$(4 + 1) \times 2 = 10 \text{ Yd}^3 (270 \text{ VXL}).$$

So three of them will already own ten cubic feet of their growing art collaboration.

Further like this:

Fourth participant: $(10 + 1) \times 2 = 22 \text{ Yd}^3 (594 \text{ VXL})$

Fifth: $(22 + 1) \times 2 = 46 \text{ Yd}^3 (1'242 \text{ VXL})$

Sixth: $(46 + 1) \times 2 = 94 \text{ Yd}^3 (2'538 \text{ VXL})$

Seventh: $(94 + 1) \times 2 = 190 \text{ Yd}^3 (5'130 \text{ VXL})$

Eighth: $(190 + 1) \times 2 = 382 \text{ Yd}^3 (10'314 \text{ VXL})$

Thus, having a sufficient amount of VR space, a group of eight co-owners of a multisig account can register specific coordinates in the first, most commercially attractive, CoArt VR Space gallery ring.

After that, the group can expand its VR showroom without attracting new participants to the collaboration but simply buying additional space in the form of ERC20 or BEP20 tokens circulating in the CAV market.

Consider that such a VR showroom, in the new Metaverse, can be obtained simply with collaboration and then increase as much as you like, adding the volume as needed - participation in the referral program becomes very attractive.

After all, the area acquired in this way can not only be used independently but also profitably sold as CoArt VR Space launches, occupying attractive places in the belt of galleries surrounding the Main Square at an early stage.



7. FUTURE OBJECTIVES

As it was said, the monopoly position of several auction houses and fifty galleries and mega-dealers artificially limits the growth of the world art market, which is not in the interests of three large and dynamically growing groups — new artists, collectors, and art consultants from among Millennials.

The market-limiting monopoly also ignores the interests of even larger groups of retail investors and traders with a long-standing interest in alternative investments such as Blue Chip Artwork.

It is crucial to understand that HNWI collector-investors — traditional clients of mega-dealers — also need new players on the market who could buy high-value art assets jointly. Deloitte directly points to new types of collective investment instruments as a clear trend that is gaining popularity.*

Therefore, there is reason to believe that a secondary market for a new type of derivatives backed by the value of physical and digital art assets will appear shortly. There are all prerequisites for this. It is what markets, investors, and retail traders want. Therefore, already at the stage of the first iterations, we lay the possibility of fragmenting the crypto certificates of art assets for fractional ownership. This will be in demand when the legal basis for the turnover of such assets appears.

The art market depends on a high level of WOM (Word-of-Mouth) Marketing.** Therefore, we have created our communication channels in social media (Facebook, Instagram, YouTube, Twitter, ClubHouse, Reddit, Telegram, Medium). There we keep in touch with artists, collectors, and experts. We can confidently speak about the great demand for our services. Thanks to the constant contact with our target audience.

After the first iteration, CoArt Marketplace will show its effectiveness — it is necessary to develop a global marketing campaign that brings the CoArt platform to markets in North America and Southeast Asia.

* <https://deloitte.com/lu/en/pages/art-finance/articles/art-as-investment.html>

** <https://investopedia.com/terms/w/word-of-mouth-marketing.asp>

<https://deloitte.com/lu/en/pages/art-finance/articles/art-as-investment.html>

