NFTS : A NEW ART MARKET OR FINANCIAL FAD ?

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DEN-SITY GN+

POLITECNICO MILANO 1863
SCHOOL OF DESIGN

GROUP 8

NFTs
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INTRODUCTION

To mirror the concept of art ownership in a digital age, NFTs (non-fungible tokens) are certificates stored on a blockchain that guarantee sole ownership of an asset. They are called non-fungible because they assure its unique character.

The technology has been present since 2010 but became notable in 2017 with the explosion of CryptoKitties, collectible virtual cats. It became recognized by the art world when traditional galleries and auction houses began including them in their sales.

This project aims to investigate the world of NFTs to understand how this phenomena is developing, what is being sold, who is buying and selling them and their visual aesthetics.

To analyse, NFTGO was used - an aggregator of NFTs sales. It gathers complete data on sales live, including a broad range of NFTs categories and a long sales history. The aggregator can only include sales on open-platform sites, so does not include private NFTs sales. It lists the top 100 sold NFTs of all time. These top 100 were recorded, alongside the top 25 of each NFT category, in October and November 2021.

NFT WORLD

An introduction into the main characteristics of the NFT world

MAIN CONCEPTS OF THE NFT WORLD

So, let's start from the beginning...

THIS IS NYAN CAT.

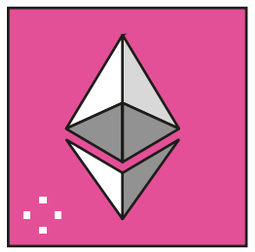
It is a GIF of a rainbow feline, half cat and half poptart, that was a **viral meme back in 2011.** In february of 2021, the original GIF was sold at an online auction for an equivalent of **$600,000 USD.**

But... how someone can own the original copy of a GIF that was pervasive around the internet?

WELL, IT WAS SOLD AS AN NFT.

NFT stands for NON- Fungible Tokens.

They are pieces of digital content linked to the blockchain. They are designed to give the buyers the ownership of the work.

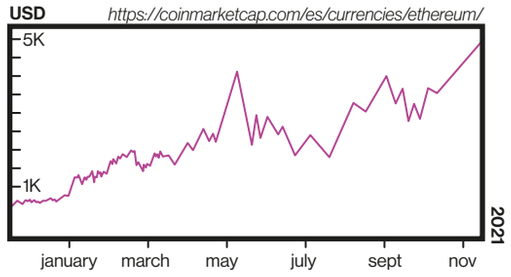


AND HOW WAS IT BOUGHT?

NFTs are part of the Ethereum blockchain.

Ethereum is a cryptocurrency, its blockchain supports NFTs. It is constantly changing its value and was made as a global platform for decentralized applications, enabling users around the world to write and run software resistant to censorship, downtime and fraud.

NFT
=
$4,656.22
USD
**Up to date*



BUT... HOW CAN SOMETHING TURN INTO AN NFT?

An artist **create** a piece of content.

Opens a **crypto wallet** and enter the marketplace by paying the taxes with currency. (ETH)

The digital object is turned into an NFT. **"Minted."**

It is assigned a **unique digital token.**

And a **historical ownership** data is attached.

And now, the NFT ready for being sold in the marketplace!

SO, WHERE IS IT SOLD?

NFTs are sold through 2 different kinds of platforms. There are Open Platforms where anyone can participate and Curated Platforms that recquire a private invitation.

OPEN PLATFORMS

OpenSea *Rarible* *Mintable*

CURATED PLATFORMS

SuperRare *Nifty Gateway* *ArtBlocks*

HOW ARE THEY CLASSIFIED?

Within the Open Platforms there are similar categories that can be found. This categories help to classify the collections of NFTs.

Art *Collectibles* *Games* *Metaverse* *DeFi* *IP* *Social* *Music* *Utility*

WHAT IS A COLLECTION?

Collections are made by private and public creators, they are accumulations of NFTs with similar characteristics.

Crypto Punks *Bored Ape Yacht Club* *Fidenza* *Ringers* *Chromie Squiggle*

AND FINALLY, WHAT ELSE DO WE NEED TO KNOW?

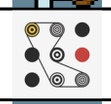
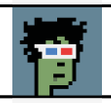
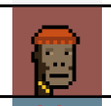
CREATOR	SELLER	BUYER	TRANSFER	BURN
Person who made the token and minted it.	Person who sells the token, doesn't have to be the creator.	Person who gets the token by paying for it. The last buyer is the current owner.	When a token is moved from one wallet to another. Could not involve a payment.	To destroy the token, eliminating it from the Blockchain.

The analysis that you are about to read was made by using NFT GO. NFT GO is an aggregator of NFT's sells.

Now, let's talk about the Top 100 NFTs of all times. →

TOP NFTs

TOP 10 SOLD NFTS FROM ALL TIME ON NFTGO

#	ARTWORK	TITLE AND CREATOR	PRICE
1*		CryptoPunk #9998 By Larva Labs	**529. 738. 887 $**
2		CryptoPunk #3100 By Larva Labs	7. 560. 180 $
3		CryptoPunk #7804 By Larva Labs	7. 551. 742 $
4		Ringers #109 By Dmitri Cherniak	6. 933. 483 $
5		CryptoPunk #8857 By Larva Labs	6. 636. 056 $
6		Ringers #879 By Dmitri Cherniak	5. 687. 173 $
7		CryptoPunk #5217 By Larva Labs	5. 443. 032 $
8		CryptoPunk #7252 By Larva Labs	5. 337. 719 $
9		CryptoPunk #6275 By Larva Labs	5. 117. 838 $
10		CryptoPunk #2338 By Larva Labs	4. 366. 337 $

The database gathered for this project and the complete information about the top 100 NFTs sold in NFTGO and the top 25 of each category can be seen on:
shorturl.at/qCMX2

* *This sale is not counted towards the total volume of the collection. it occurred using a flash loan, where the buyer and seller were the same. Whilst it is recorded on the blockchain as a sale, it is not a legitimate sales*

IMAGES OF TOP 11-100 OF ALL TIME ON NFTGO

Nº 100
1. 058. 213 $

Although the price of the top ten sold NFT varies significantly, those ranking 11 to 100 do not vary greatly.

CATEGORIES

THE CATEGORIES FOUND ON NFT GO

CONCEPT	DESCRIPTION
Art	Created by an artist with a NFT certificate. They can be static images, videos, gifs, photographs, installations. This content can be also generated by algorithms.
Collectibles	A digital counterpart to the physical phenomenon of trading cards. They are represented by digital characters, and each belongs to a wider collection.
Games	Assets for video games such as characters, skins and tools. They are sold in limited editions, so are exclusive for their buyers.
Metaverse	Assets, specially pieces of land, in virtual reality worlds.
DeFi	Decentralized finance is a financial system based on blockchains, used mostly for real estate investments.
IP	Intellectual property assets sell the rights to certain artworks. Usually NFT owners do not have the copyright of the artwork they buy, however this category of NFTs offers the possibility of rights to the artwork.
Social	Memberships for specific social clubs are sold.
Music	Original songs, usually generated by algorithms.
Utility	Each ethereum profile and contract is represented by a long code. This NFT category gives users the chance to shorten their code to a simple word, such as chocolate.eth.

PROTOCOL 1

What sales trends are shown amongst the top sold in NFTGo?

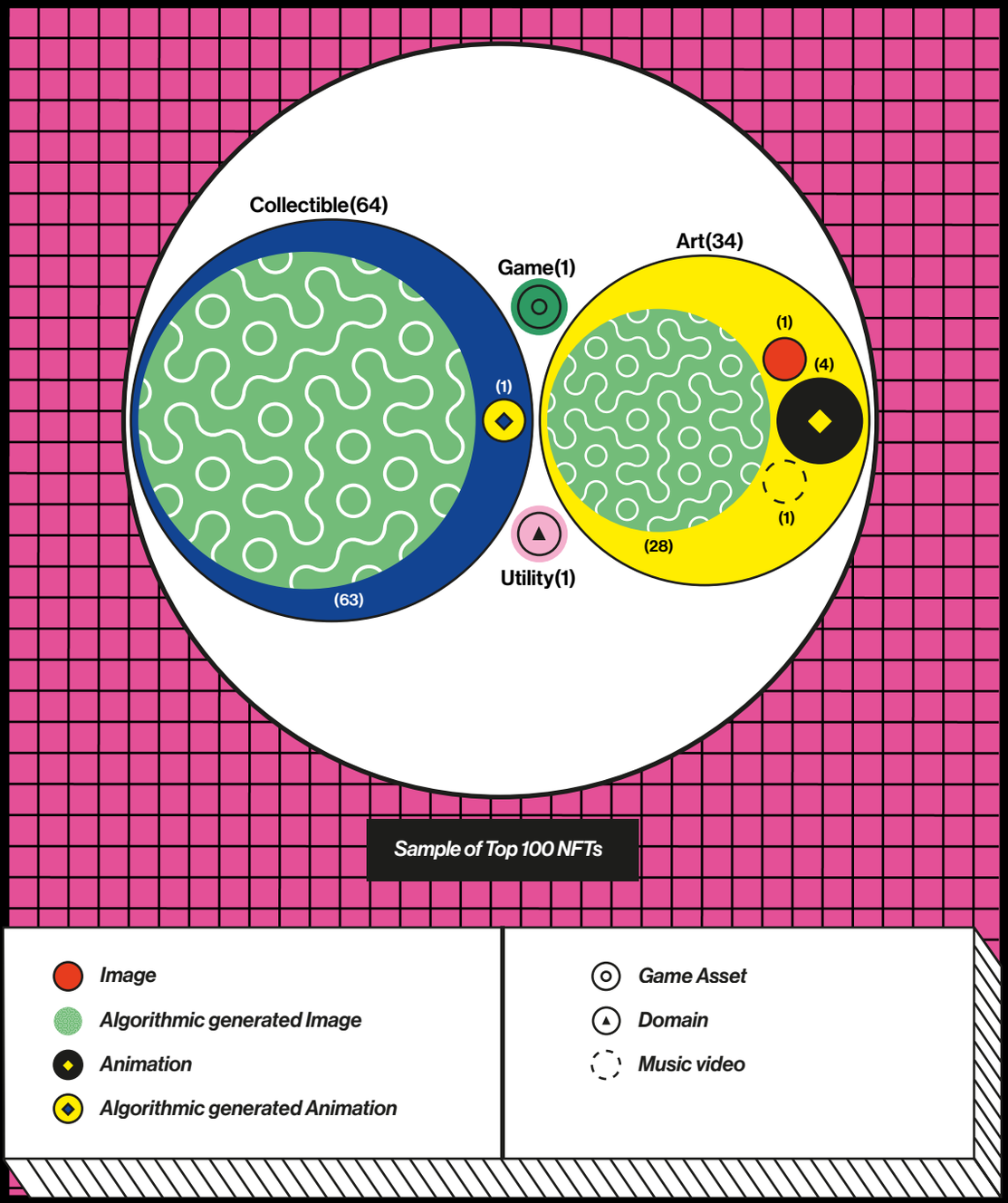
Looking at the top 100 overall sales, plus the top 25 sales of each NFT category, we focus on what were the most sold categories of NFTs, their prices and the amount of times they resold. The research shows us which directions the market is taking.

FINDING #1

Collectibles and art dominate the NFT market. Only 4 of the 9 NFT categories can be found in the top 100 sold

TOP 100 NFT'S SOLD BY CATEGORY AND FORMAT

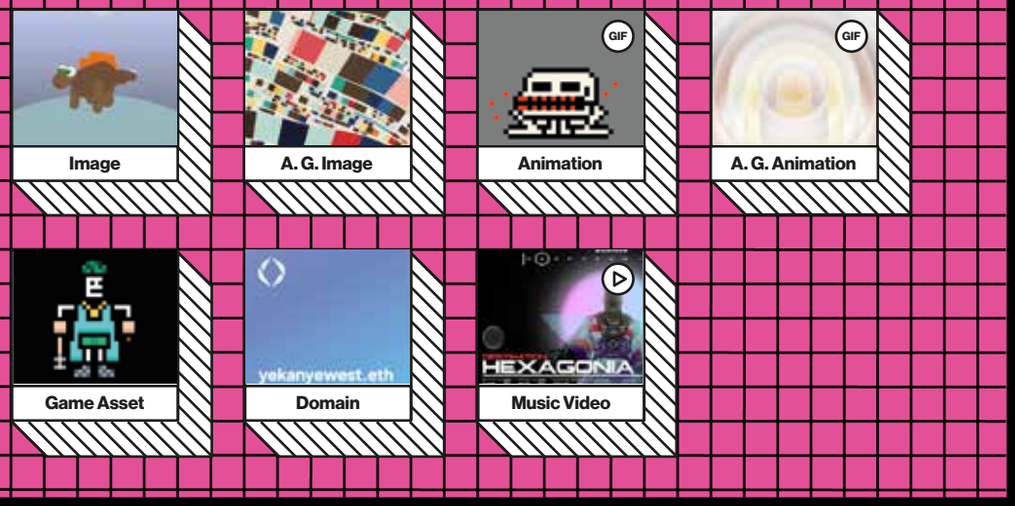
The following graph shows the total number of the TOP 100 sold NFT's, classified by categories and the different formats they can have



DESCRIPTIONS OF FORMATS

Here, we take a look into the description of the formats of the NFT's going deeper into how the pieces of digital content are created

FORMAT	DESCRIPTION
Image	Visual Static Representation
Algorithmic generated Image	Algorithmic generated NFT's also known as computer-generated. It's generated by an autonomous system.
Animation	Moving images digitally created.
Algorithmic generated Animation	Algorithmic generated NFT's also known as computer-generated. It's generated by an autonomous system.
Game Asset	Blockchain games that allow users to purchase in-game assets as collectibles. They can be used as weapons to complete tasks or to be sold to other users, within the game and on other NFT Marketplace.
Domain	Blockchain domains turn complex hexadecimal wallet adresses into easy-to-remember names.
Music video	Music videos and concerts from DJ's and musicias are being sold as NFT's.

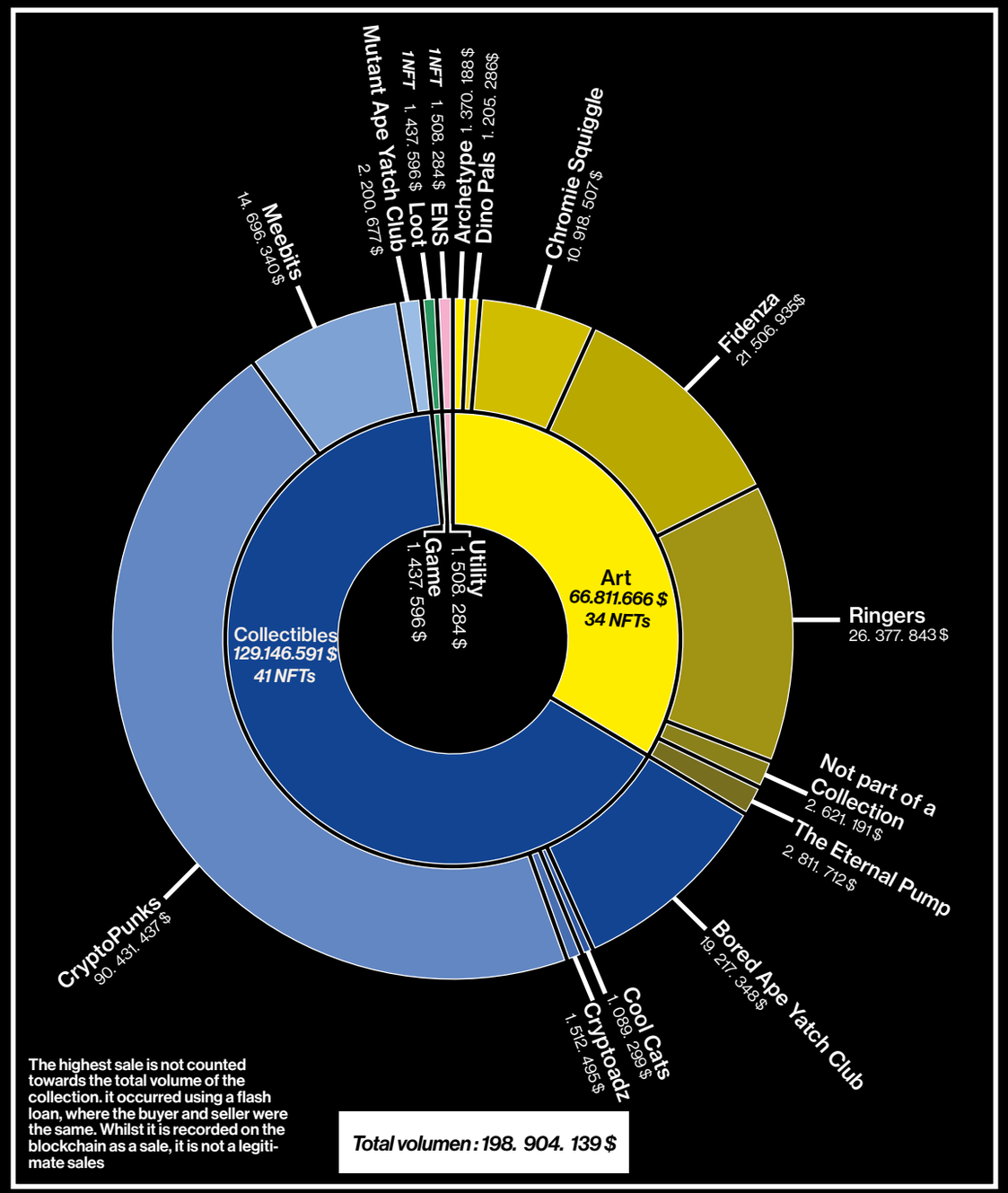


FINDING #2

Within the top 100 sold, the majority of money is spent on collectibles, with the largest portion circulating being spent on cryptopunks

PROPORTION OF MONEY IN TOP 100 SOLD NFTS BY CATEGORIES AND COLLECTIONS

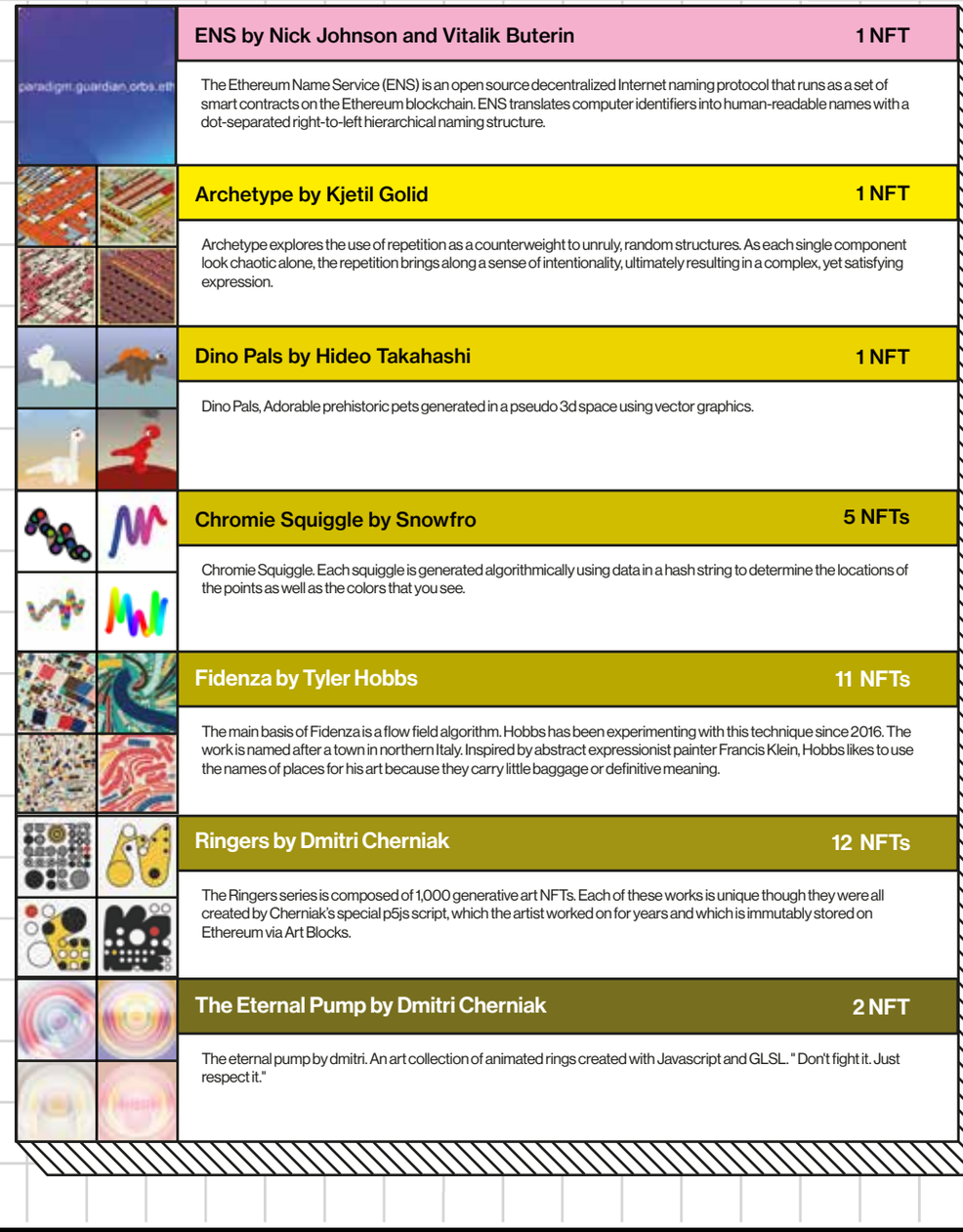
The following graph represents the total volume of USD of the Top 100 NFT's on NFTGO, classified by categories and collection inside the categories



The highest sale is not counted towards the total volume of the collection. it occurred using a flash loan, where the buyer and seller were the same. Whilst it is recorded on the blockchain as a sale, it is not a legitimate sales

Total volumen : 198. 904. 139 $

DESCRIPTION OF THE COLLECTIONS (PT. 1)



ENS by Nick Johnson and Vitalik Buterin — **1 NFT**

The Ethereum Name Service (ENS) is an open source decentralized Internet naming protocol that runs as a set of smart contracts on the Ethereum blockchain. ENS translates computer identifiers into human-readable names with a dot-separated right-to-left hierarchical naming structure.

Archetype by Kjetil Golid — **1 NFT**

Archetype explores the use of repetition as a counterweight to unruly, random structures. As each single component look chaotic alone, the repetition brings along a sense of intentionality, ultimately resulting in a complex, yet satisfying expression.

Dino Pals by Hideo Takahashi — **1 NFT**

Dino Pals, Adorable prehistoric pets generated in a pseudo 3d space using vector graphics.

Chromie Squiggle by Snowfro — **5 NFTs**

Chromie Squiggle. Each squiggle is generated algorithmically using data in a hash string to determine the locations of the points as well as the colors that you see.

Fidenza by Tyler Hobbs — **11 NFTs**

The main basis of Fidenza is a flow field algorithm. Hobbs has been experimenting with this technique since 2016. The work is named after a town in northern Italy. Inspired by abstract expressionist painter Francis Klein, Hobbs likes to use the names of places for his art because they carry little baggage or definitive meaning.

Ringers by Dmitri Cherniak — **12 NFTs**

The Ringers series is composed of 1,000 generative art NFTs. Each of these works is unique though they were all created by Cherniak's special p5js script, which the artist worked on for years and which is immutably stored on Ethereum via Art Blocks.

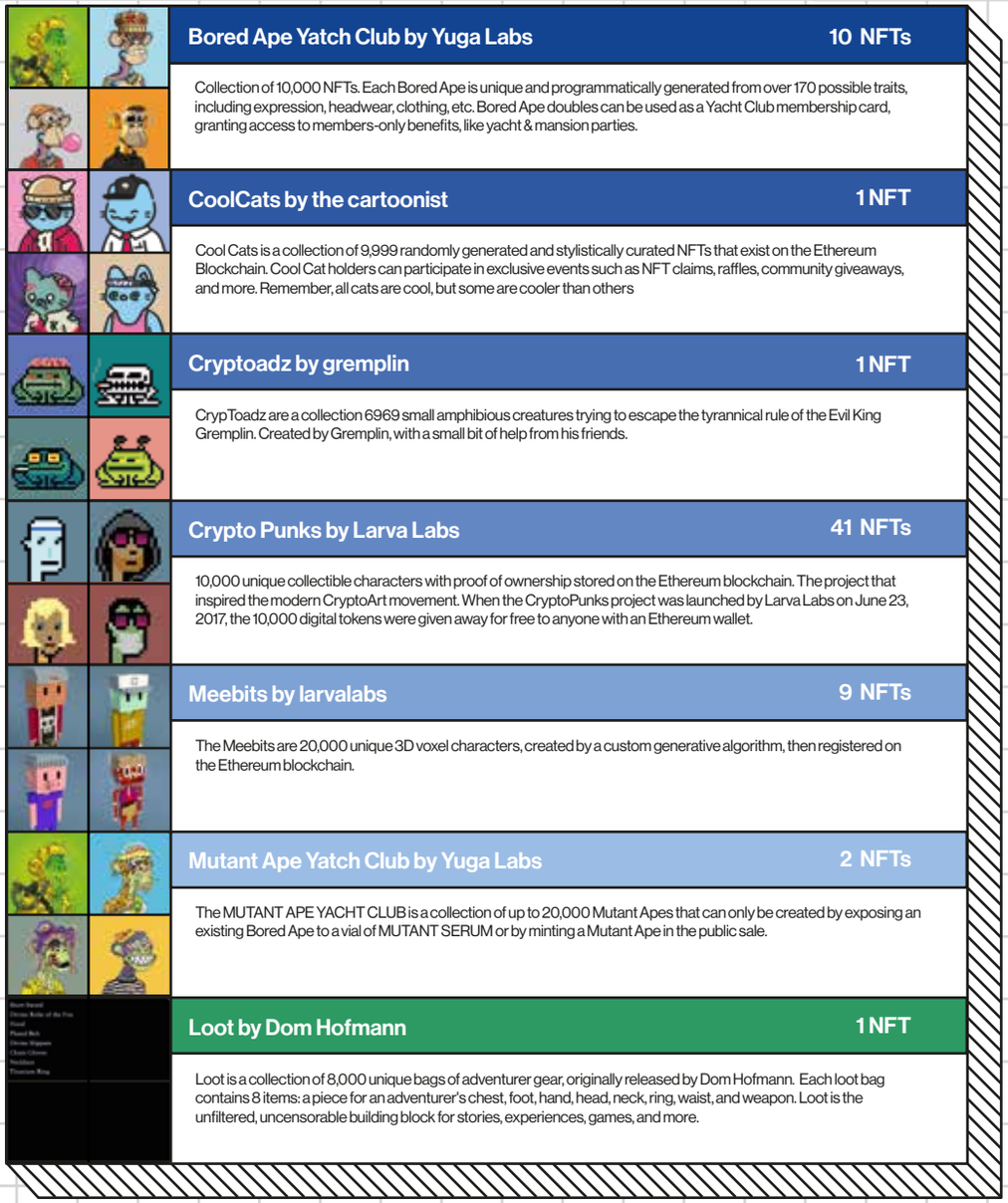
The Eternal Pump by Dmitri Cherniak — **2 NFT**

The eternal pump by dmitri. An art collection of animated rings created with Javascript and GLSL. " Don't fight it. Just respect it."

FINDING #3

NFTs are gaining value as they are resold

DESCRIPTION OF THE COLLECTIONS (PT. 2)



Bored Ape Yatch Club by Yuga Labs — 10 NFTs

Collection of 10,000 NFTs. Each Bored Ape is unique and programmatically generated from over 170 possible traits, including expression, headwear, clothing, etc. Bored Ape doubles can be used as a Yacht Club membership card, granting access to members-only benefits, like yacht & mansion parties.

CoolCats by the cartoonist — 1 NFT

Cool Cats is a collection of 9,999 randomly generated and stylistically curated NFTs that exist on the Ethereum Blockchain. Cool Cat holders can participate in exclusive events such as NFT claims, raffles, community giveaways, and more. Remember, all cats are cool, but some are cooler than others

Cryptoadz by gremplin — 1 NFT

CrypToadz are a collection 6969 small amphibious creatures trying to escape the tyrannical rule of the Evil King Gremplin. Created by Gremplin, with a small bit of help from his friends.

Crypto Punks by Larva Labs — 41 NFTs

10,000 unique collectible characters with proof of ownership stored on the Ethereum blockchain. The project that inspired the modern CryptoArt movement. When the CryptoPunks project was launched by Larva Labs on June 23, 2017, the 10,000 digital tokens were given away for free to anyone with an Ethereum wallet.

Meebits by larvalabs — 9 NFTs

The Meebits are 20,000 unique 3D voxel characters, created by a custom generative algorithm, then registered on the Ethereum blockchain.

Mutant Ape Yatch Club by Yuga Labs — 2 NFTs

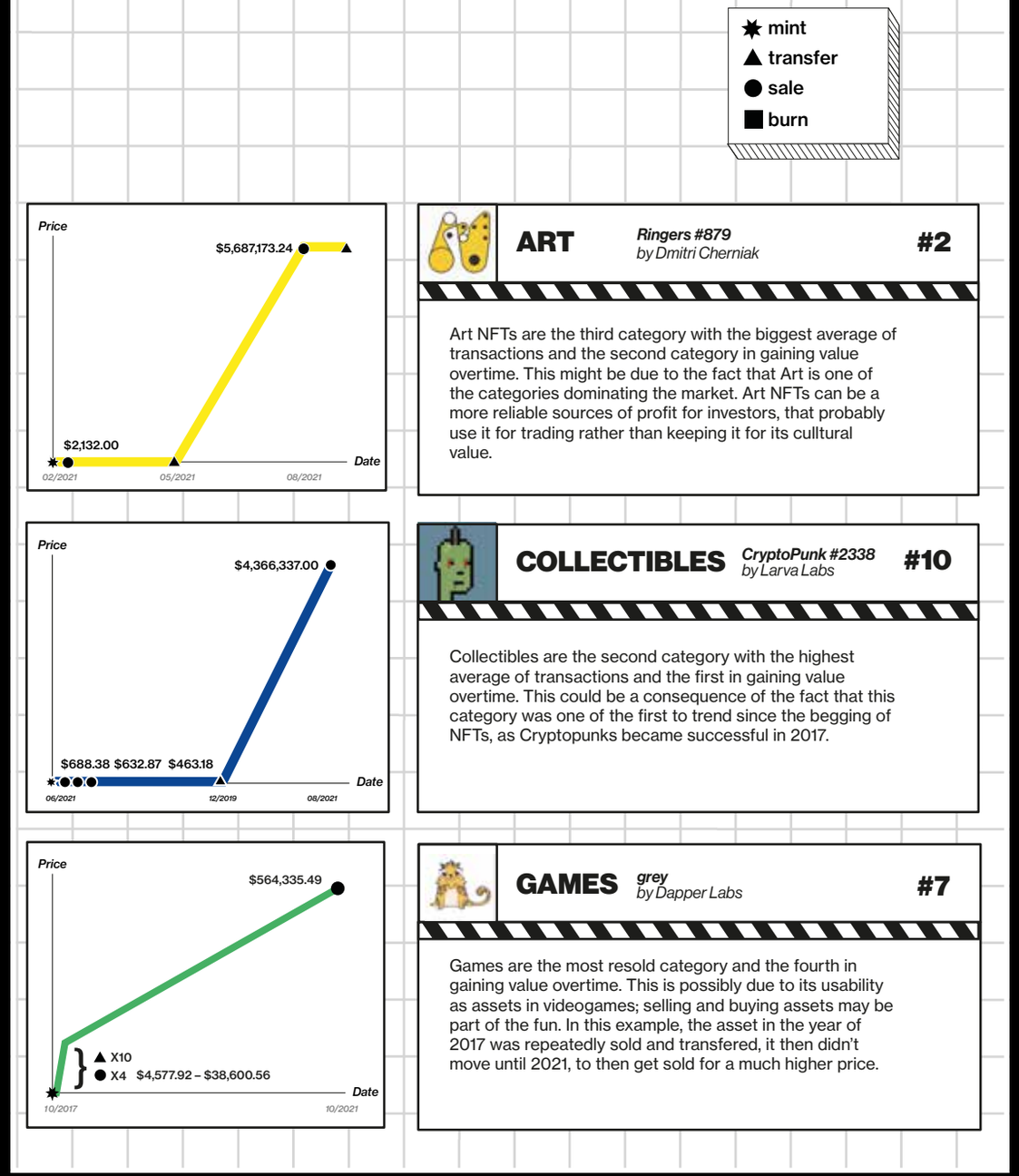
The MUTANT APE YACHT CLUB is a collection of up to 20,000 Mutant Apes that can only be created by exposing an existing Bored Ape to a vial of MUTANT SERUM or by minting a Mutant Ape in the public sale.

Loot by Dom Hofmann — 1 NFT

Loot is a collection of 8,000 unique bags of adventurer gear, originally released by Dom Hofmann. Each loot bag contains 8 items: a piece for an adventurer's chest, foot, hand, head, neck, ring, waist, and weapon. Loot is the unfiltered, uncensorable building block for stories, experiences, games, and more.

TIMELINES OF THE NFT´S WITH MOST TRANSACTIONS PER TYPE (PT. 1)

NFTs can be moved in various ways - mint (created), transfer (non-fee), sale, burn (destroyed). Certain categories exhibit different behaviours. Below shows an NFT per category, chosen as a median for the number of times sold, to represent how this category behaves. We watch their lifespans to see what transactions they take.



ART *Ringers #879* *by Dmitri Cherniak* **#2**

Art NFTs are the third category with the biggest average of transactions and the second category in gaining value overtime. This might be due to the fact that Art is one of the categories dominating the market. Art NFTs can be a more reliable sources of profit for investors, that probably use it for trading rather than keeping it for its cullturall value.

COLLECTIBLES *CryptoPunk #2338* *by Larva Labs* **#10**

Collectibles are the second category with the highest average of transactions and the first in gaining value overtime. This could be a consequence of the fact that this category was one of the first to trend since the begging of NFTs, as Cryptopunks became successful in 2017.

GAMES *grey* *by Dapper Labs* **#7**

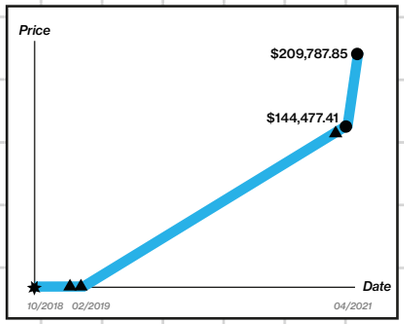
Games are the most resold category and the fourth in gaining value overtime. This is possibly due to its usability as assets in videogames; selling and buying assets may be part of the fun. In this example, the asset in the year of 2017 was repeatedly sold and transfered, it then didn't move until 2021, to then get sold for a much higher price.

FINDING #4

Similar to the stock market, some NFTs will be sold instantly, whereas others will be retained as their speculative value increases.

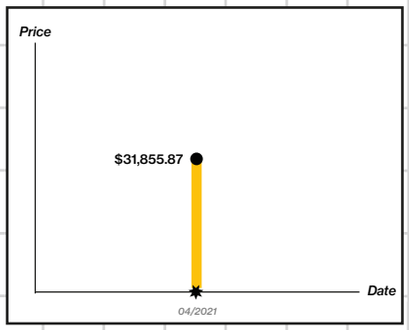
TIMELINES OF THE NFT´S WITH MOST TRANSACTIONS PER TYPE (PT. 2)

Transfering an asset multiple times is very recurrent in every type and it remains unknown the reason behind it. It may be related to private transactions between two users outside platforms or with accounts used to buy and others to store, for example. Many transfers happen right after an assets gets minted.



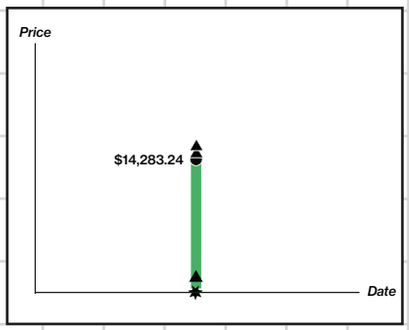
METAVERSE *Amazing big estate in a Prime location* *by Decentraland* **#11**

Metaverse assets are still not as profitable as other categories. The possible explanation behind this is is that this field is still new and unexplored. However, there is potential: recently Facebook changed its name to Meta. Marc Zuckerberg expects it to gain increasing popularity in the next 5 to 10 years.



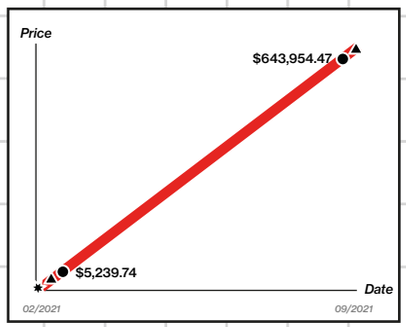
DEFI *Uniswap - 1% - USDT/WETH - 1982.3<>3991.8* *by Uniswap V3 Positions* **#1**

DeFi assets probably moves less than other categories because some investments may take longer to increase its profits. The nature of this kind of product differs a lot from others. The profile of buyer is probably also more specialized in finances rather than speculators, visionnaires and collectors



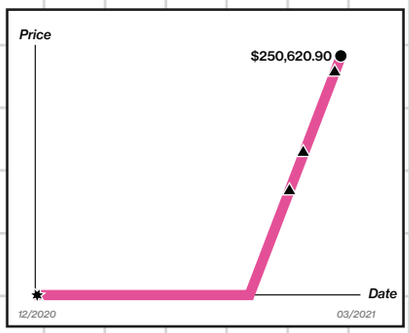
SOCIAL *Club721 Membership* *by The Club721* **#1**

Social, which is overall about memberships, are not highly sold and transferred. This might happen because of the exclusivity of the memberships, owners might prefer to keep it and make usage of its advantages.



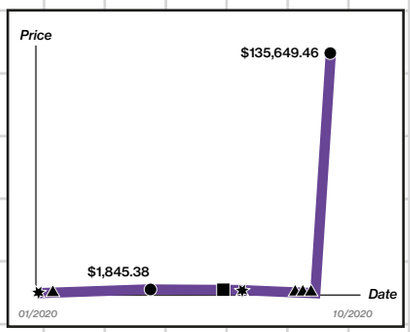
MUSIC *EulerBeats Genesis LP 15* *by EulerBeats* **#1**

Music is still a small market in the world of NFTs. This is shown by the slight increase in price overtime and in the below small amount of transfers and sales. Another aspect to take into consideration is the lack of popularity of these algorithmic generated songs.



IP *Beeple Everydays - Raw #152/100* *by Beeple* **#1**

Considering the profit potetntial of the intellectual property of a trendy cryptoartist, it is understandable why those assets are less sold compared to other categories: keeping it and using the copyrights to earn money on merchandising and reproductions may be the biggest advantage of this category.

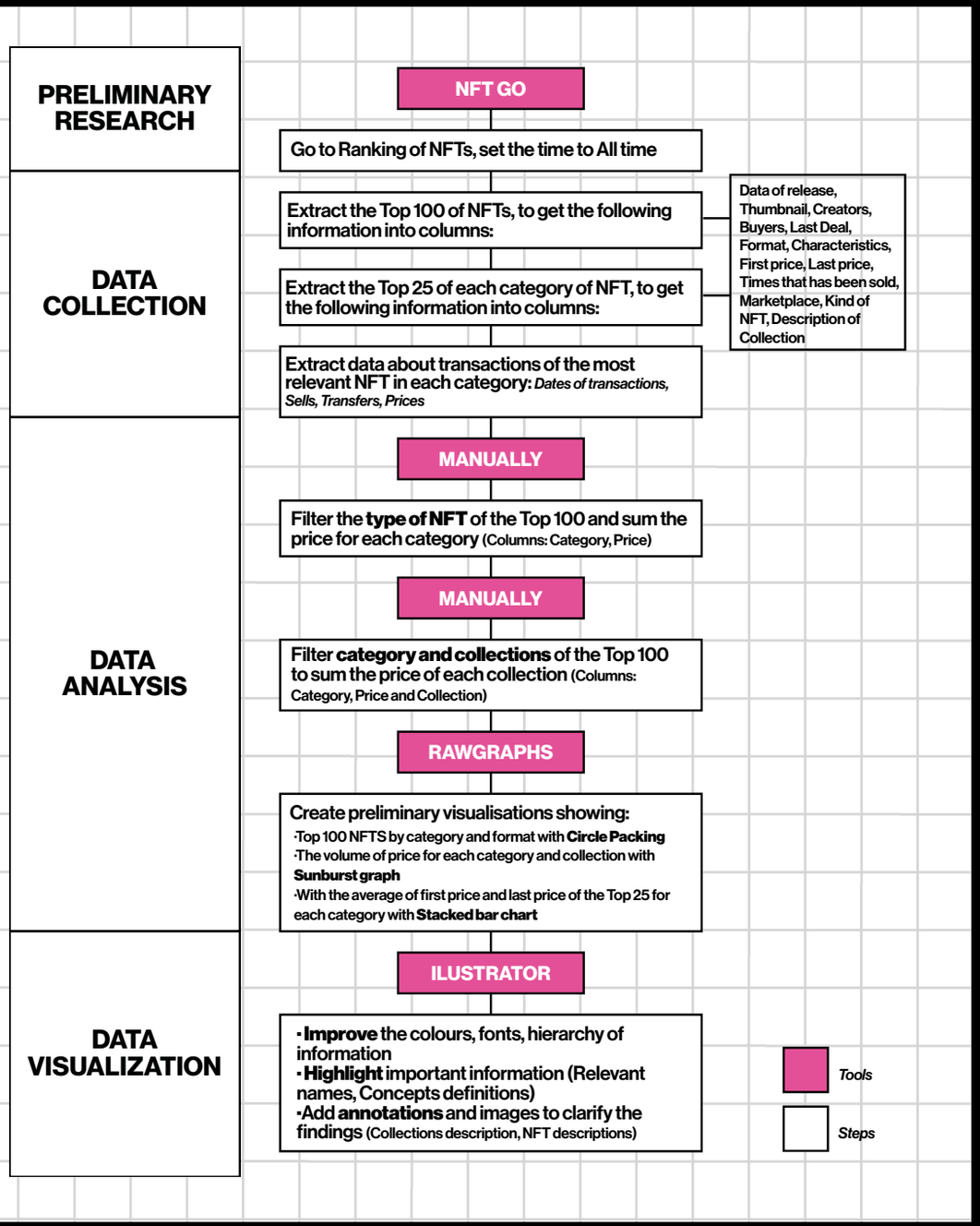


UTILITY *wei.eth* *by ENS* **#3**

Utility is the only category in which the action of burning, an asset can be observed. The average of sales is low, but there are still a lot of movements. The reason behind it remains unknown.

PROTOCOL DIAGRAM #1

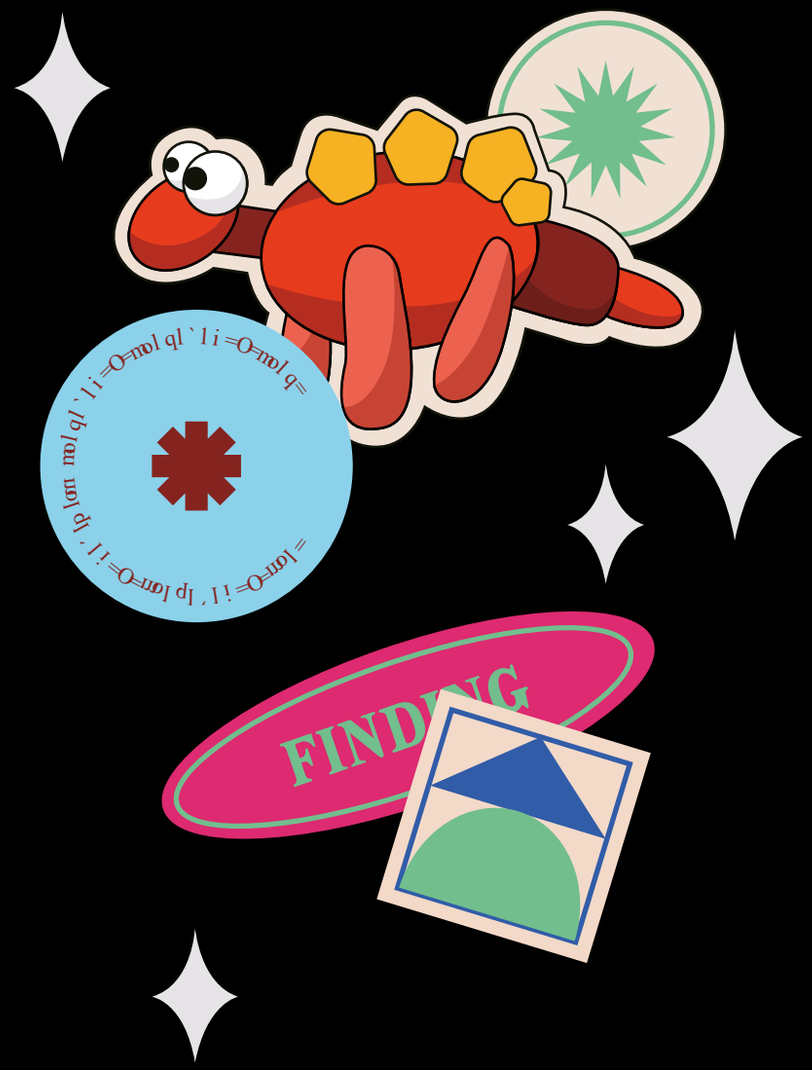
PROCESS TO CREATE THE VISUAL REPRESENTATION OF PROTOCOL 1



SUMMARY OF FINDINGS

Collectibles and art dominate the market, with algorithmic generated content very present in the top sales - a novel innovation compared with the traditional art world. There is a lot of buzz around a few NFT collections, namely cryptopunks, fidenza and ringers, which are being resold many times, and very quickly, generating significant sums of money. This suggests they are not only being valued for their artistic merit, but being used as a financial tool.

Newer NFT forms, such as the metaverse, still only hold a small portion of the market, but by looking at the previous explosion of collectibles and art, and following developments in world affairs, they may increase to enormous values over time.



PROTOCOL 2

Who are the creators and buyers of the top NFTs in NFTGo?

To have a deeper understanding of NFTs, we analysed the main actors involved in the market according to NFTGo: creators and buyers. We wanted to understand what kind of people they were, how diverse the market was and what their intentions were with NFTs. For a deeper analysis of the actors, we did further research outside of NFTGo.

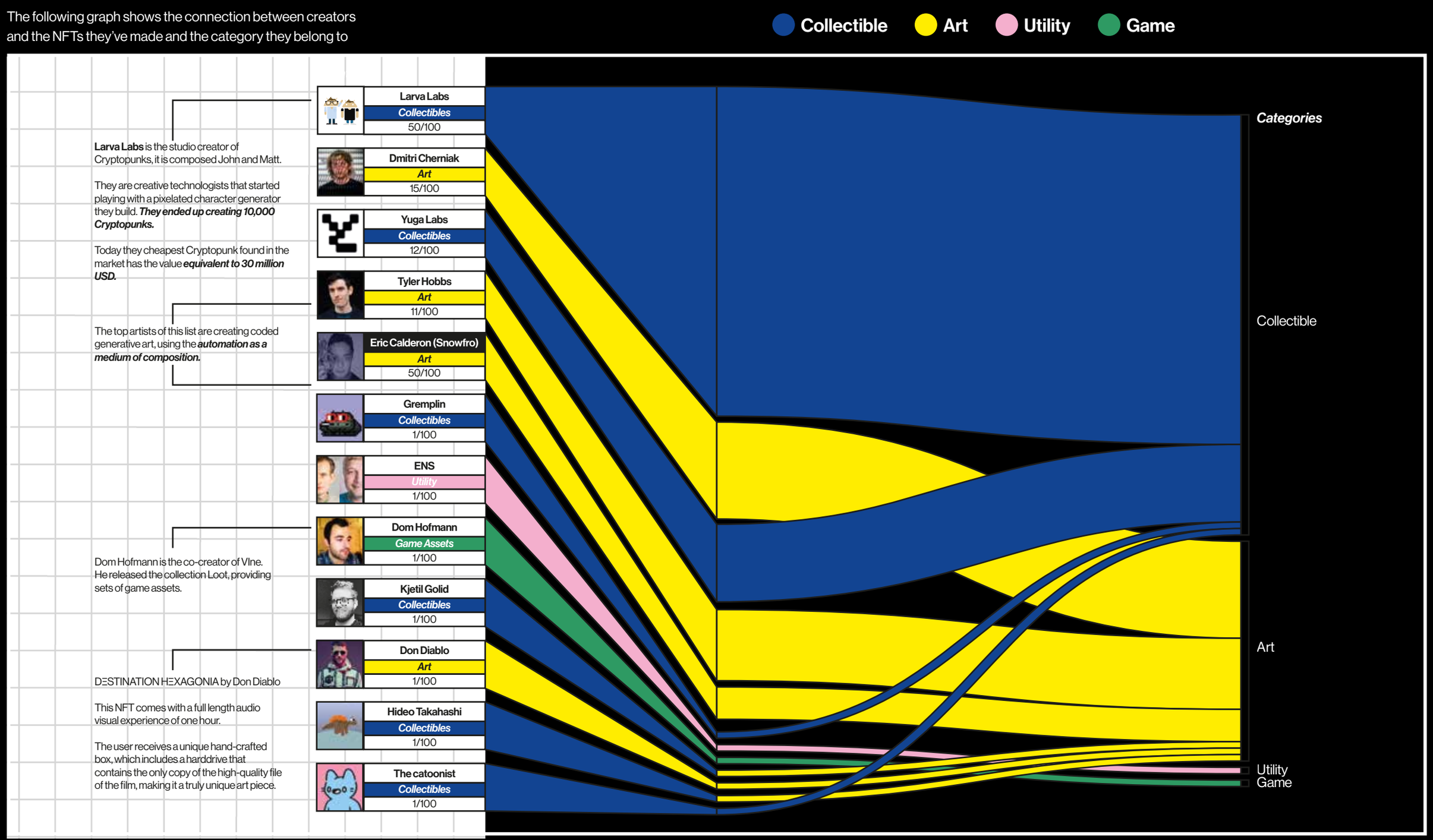
FINDING #1

In the top 100 NFTs sold there were only 12 creators, 4 of them creating the majority on the Top 100.

This creators are focusing in one area. They only create one type of NFT's.

CREATORS AND THE NUMBER THEY HAVE SOLD IN THE TOP 100

The following graph shows the connection between creators and the NFTs they've made and the category they belong to



Larva Labs is the studio creator of Cryptopunks, it is composed John and Matt.

They are creative technologists that started playing with a pixelated character generator they build. ***They ended up creating 10,000 Cryptopunks.***

Today they cheapest Cryptopunk found in the market has the value ***equivalent to 30 million USD.***

The top artists of this list are creating coded generative art, using the ***automation as a medium of composition.***

Dom Hofmann is the co-creator of VIne. He released the collection Loot, providing sets of game assets.

DΞSTINATION HΞXAGONIA by Don Diablo

This NFT comes with a full length audio visual experience of one hour.

The user receives a unique hand-crafted box, which includes a harddrive that contains the only copy of the high-quality file of the film, making it a truly unique art piece.

FINDING #2

There are more than 90 buyers in the top 100 NFTs. Compared with the few creators, this shows an imperfect competitive market, whereby the sellers to buyers ratio is imbalanced

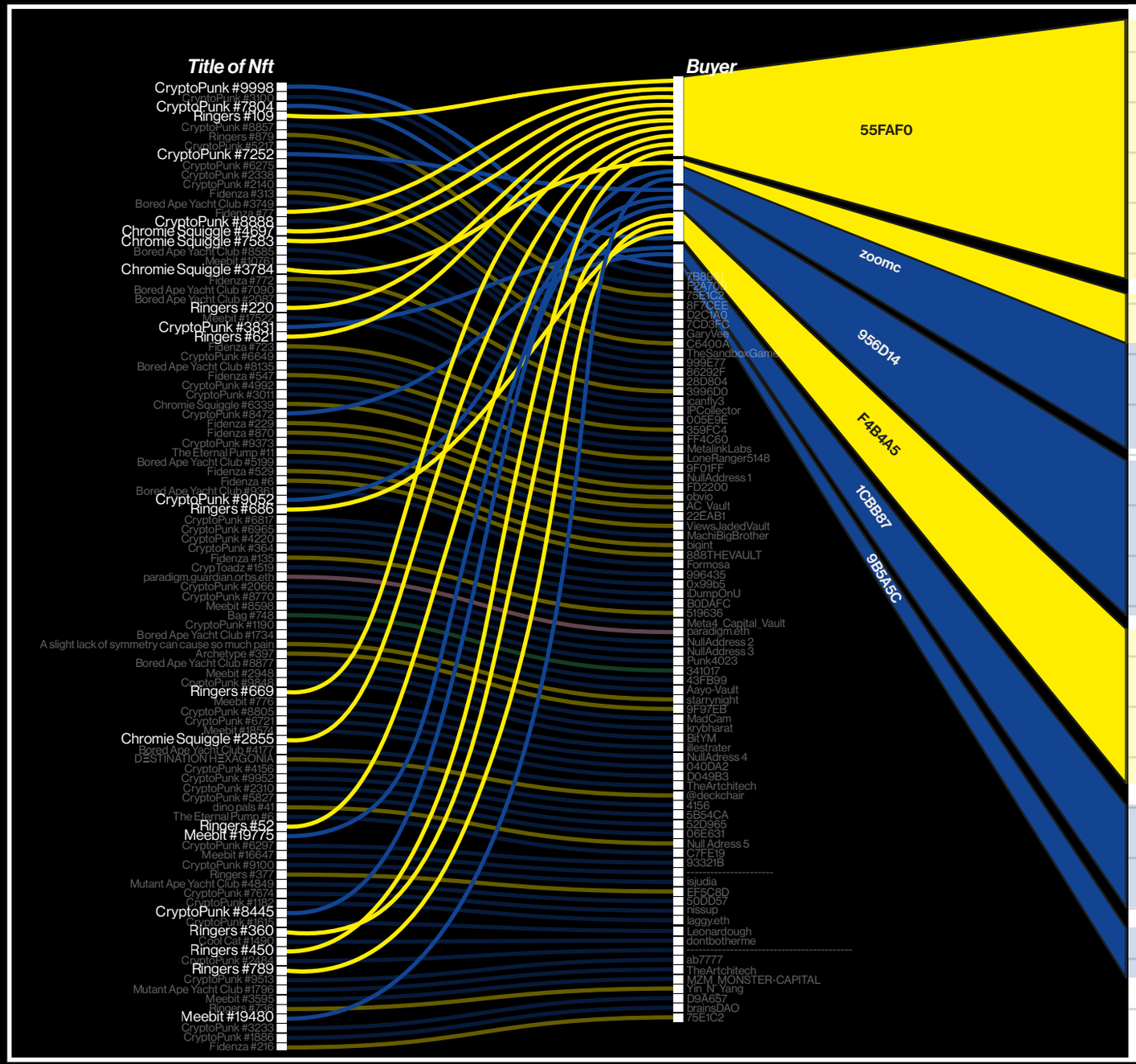
FINDING #3

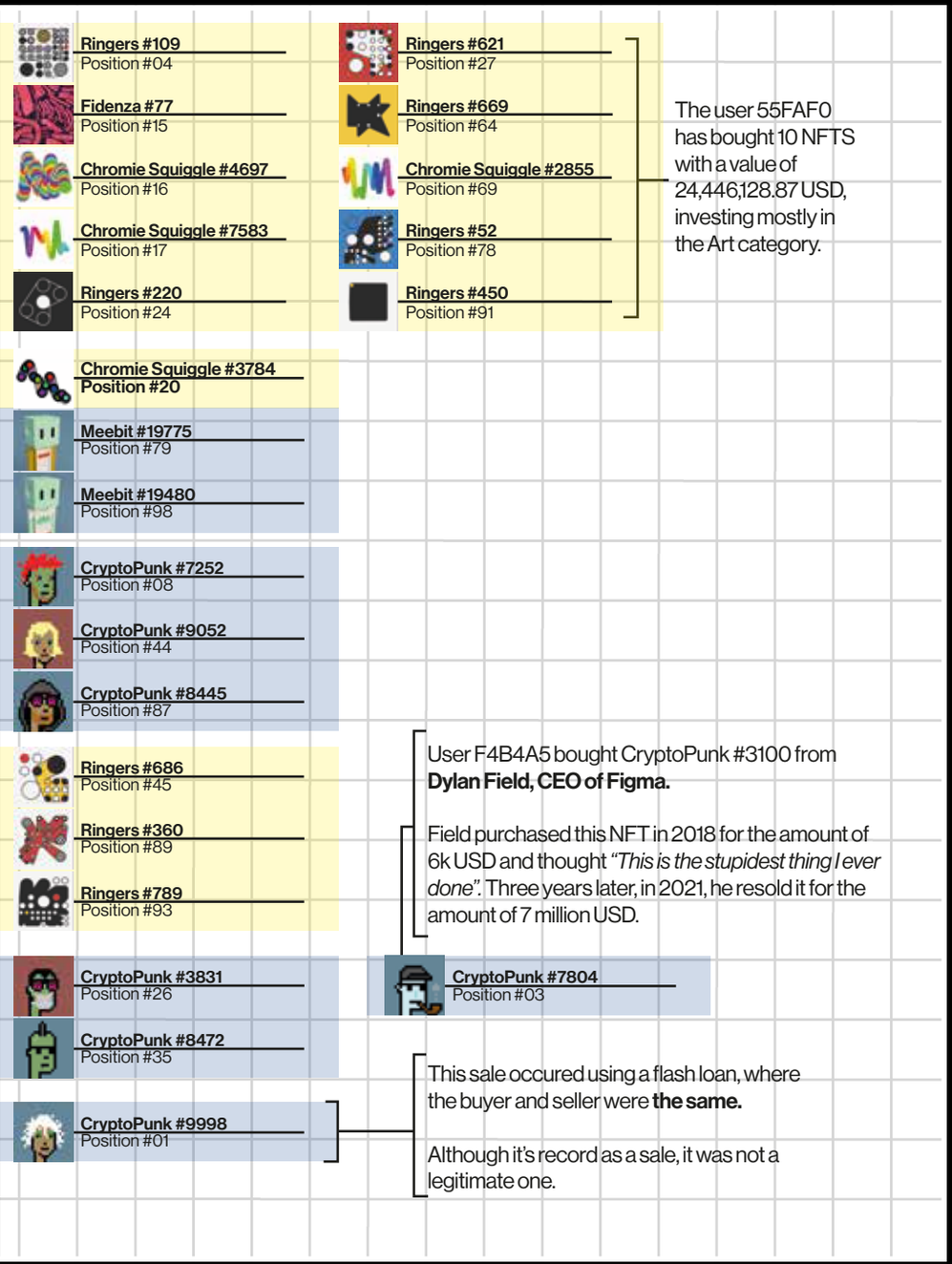
Some of the buyers, that collected pieces of the top 100, bought more than one piece from different collections within the categories of collectibles and art.

TOP NFT BUYERS

The following graph shows the connection of Top NFTs sold and their unique buyers.
It also presents a breakdown of the buyers who bought more than one piece.

Collectible Art



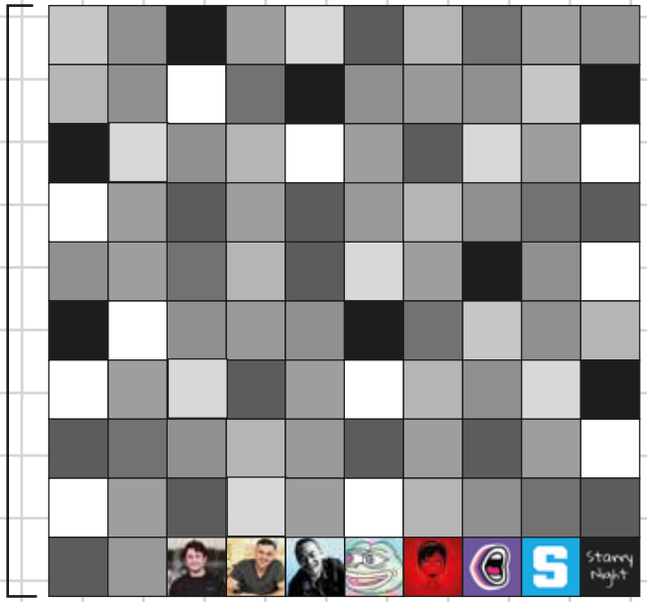


FINDING #4

The market is not transparent. Unlike the traditional art market, most buyers are untraceable anonymous usernames.

ANONYMITY OF BUYERS

This graph represents the 100 Buyers of the Top NFTS. In order to find their identities, each buyer was tracked with the name of the NFT that they own and the transactions they've made in the past 3 years.



92%
are anonymous

3%
are individuals

5%
are associations

BUYERS WITH PUBLIC IDENTITY

Individuals

Dylan Field
CEO of Figma

Gary Vaynerchuk
CEO of @Vaynermedia

Jeffrey Huang
Entrepreneur and A-list celebrity

Associations

VincentVanDough
Starry Night Cofunder

Metalink
Re-sells

Pranksy
NFT collector, Co-Founder and owner of NFTBoxes.io

The Sandbox
Global Community

Starry Night Capital
Assembling the world's finest collection of NFTs Van Dough, Su Zhu and Kyle Davies.

PROTOCOL DIAGRAM #2

PROCESS TO CREATE THE VISUAL REPRESENTATION OF PROTOCOL 2

PRELIMINARY RESEARCH

DATA COLLECTION

NFT GO

Go to Ranking of NFTs, set the time to All time

Extract the Top 100 of NFTs, to get the following information into columns:

Data of release, Thumbnail, Creators, Buyers, Last Deal, Format, Characteristics, First price, Last price, Times that has been sold, Marketplace, Kind of NFT, Description of Collection

GOOGLE AND OPEANSEA

Research each NFT to get the platform it was sold in and data about creators and buyers that could not be found on NFTGO. *Collect usernames, profiles and relevant information.*

GOOGLE DOCS

Add this information on a Google docs

DATA ANALYSIS

RAWGRAPHS

Create preliminary visualisations showing:
·Top 100 NFTS by category and format with **Circle Packing**
·The volume of price for each category and collection with **Sunburst graph**
·With the average of first price and last price of the Top 25 for each category with **Stacked bar chart**

MANUALLY

Identify relationship between anonymous buyers and identified ones with **Waffle graph**

DATA VISUALIZATION

ILUSTRATOR

- **Improve** the colours, fonts, hierarchy of information
- **Highlight** important information (Relevant names, Concepts definitions)
- Add **annotations** and images to clarify the findings (Collections description, NFT descriptions)

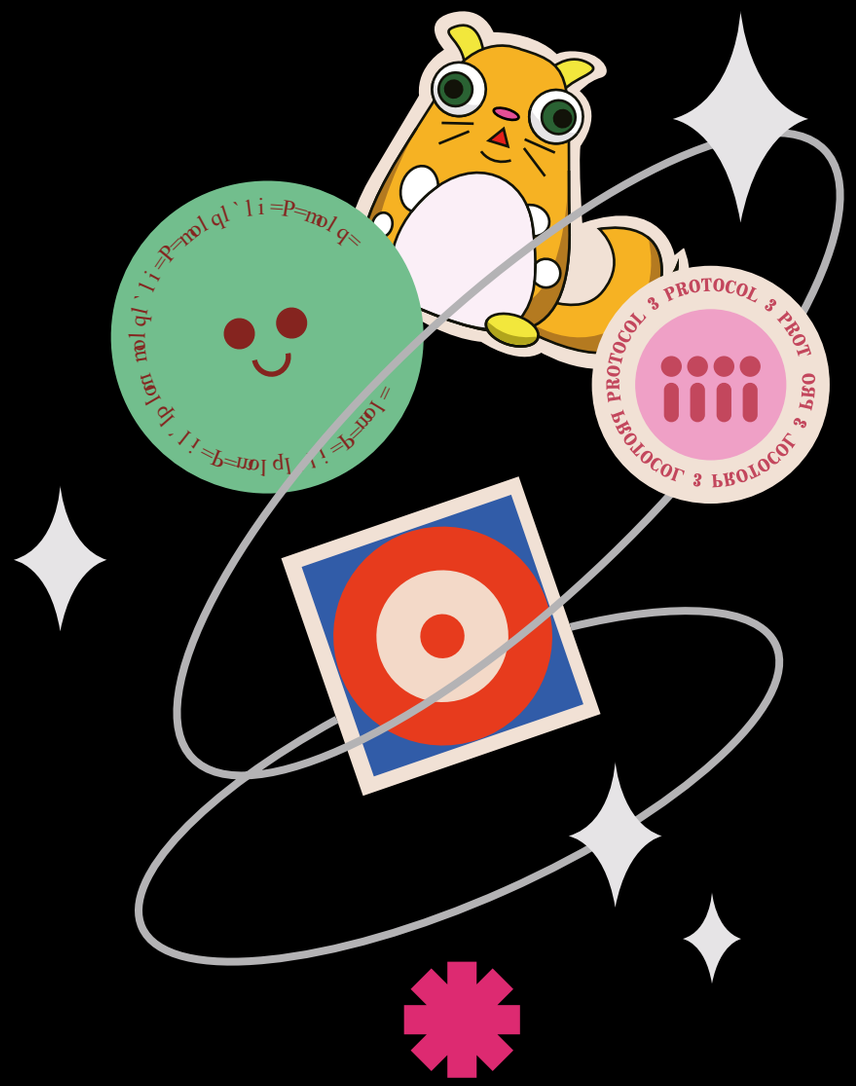
Tools

Steps

SUMMARY OF FINDINGS

Collectibles and art dominate the market, with algorithmic generated content very present in the top sales - a novel innovation compared with the traditional art world. There is a lot of buzz around a few NFT collections, namely cryptopunks, fidenza and ringers, which are being resold many times, and very quickly, generating significant sums of money. This suggests they are not only being valued for their artistic merit, but being used as a financial tool.

Newer NFT forms, such as the metaverse, still only hold a small portion of the market, but by looking at the previous explosion of collectibles and art, and following developments in world affairs, they may increase to enormous values over time.



PROTOCOL 3

What are the visual aesthetic trends in the top NFTs in NFTGo?

NFTs are created in a virtual space. As a novel medium, we wanted to explore the visual aspects of NFTs to see if they follow styles found in traditional art. We also wanted to see how categories differ, thus understanding if buyers value different things when they buy the art (e.g aesthetic appeal versus financial benefit).

FINDING #1

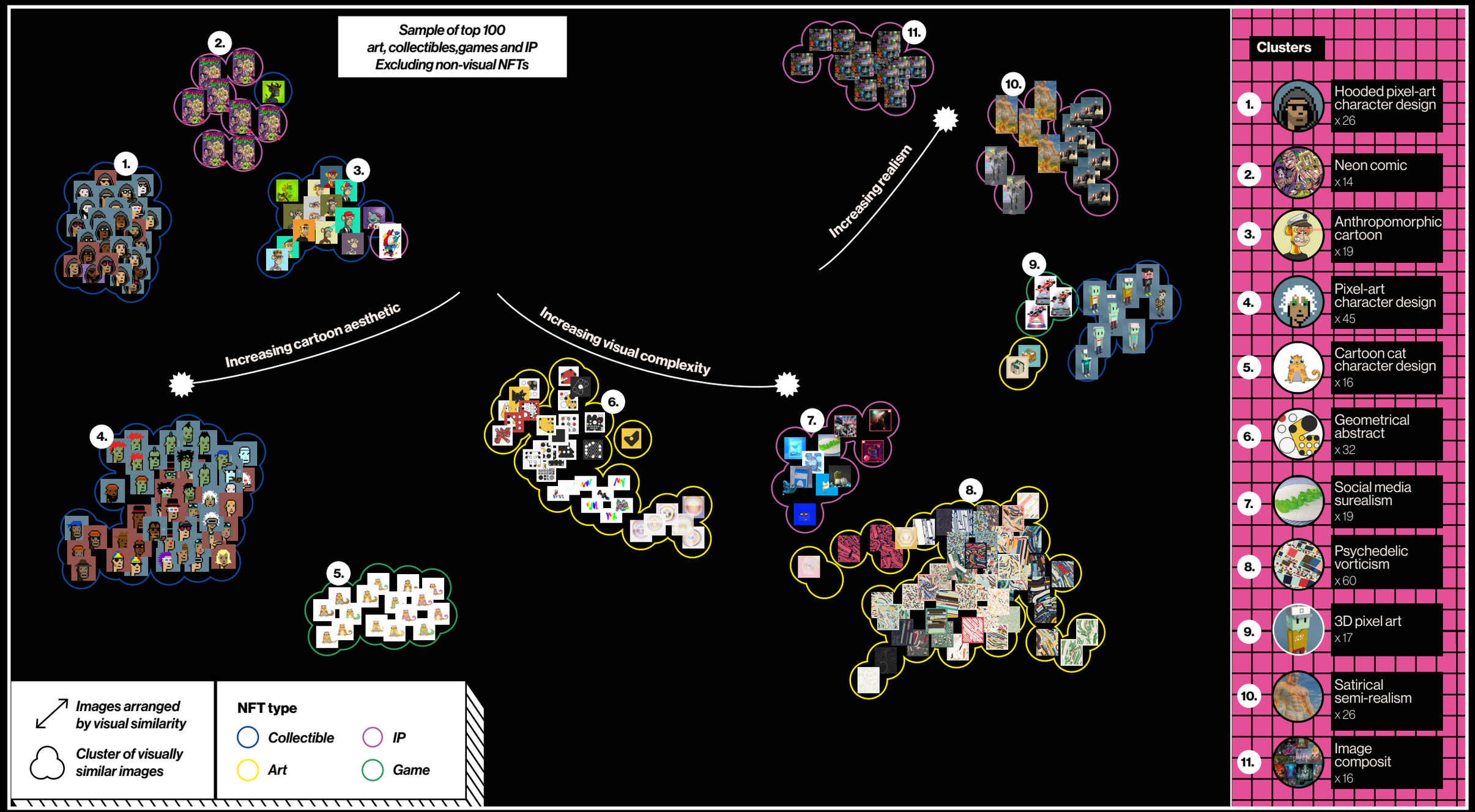
Collectibles are exclusively cartoons, the art usually has strong influence from traditional abstract art, and IP is often surrealism with comical themes

FINDING #2

The visual aesthetics of NFT categories are strongly dictated by their collection

MAP OF VISUAL SIMILARITY OF ART, COLLECTIBLES, GAMES AND IP IN NFT GO

UMAP created using PixPlot

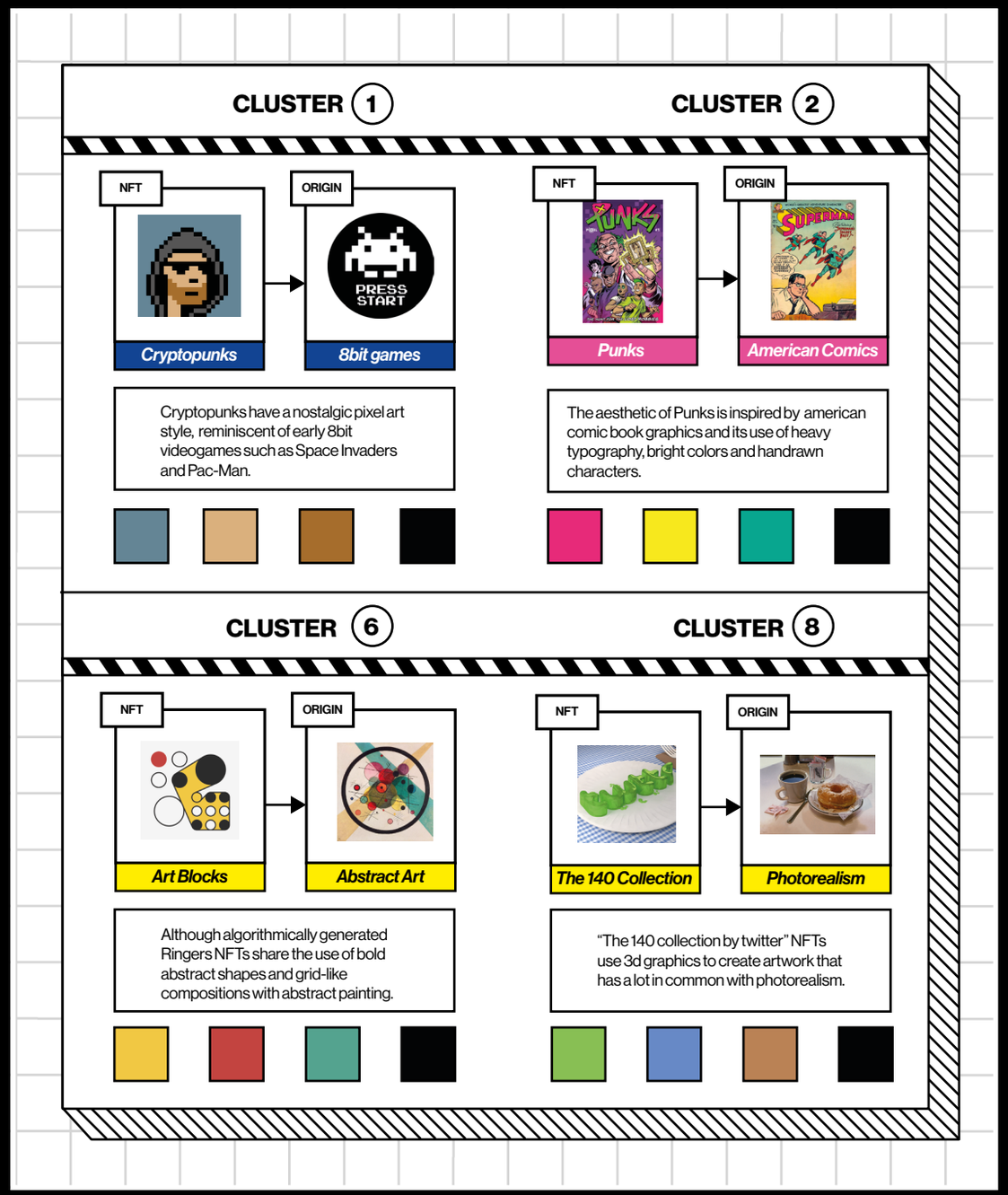


FINDING #3

There are visual aesthetics common to the top selling NFT artworks. Some are inspired by fine art movements such as abstract art, others by the world of comic books and gaming

UPPER CASE DESCRIPTION OF GRAPH

There are visual aesthetics common to the top selling NFT artworks. Some are inspired by fine art movements such as abstract art, others by the world of comic books and gaming

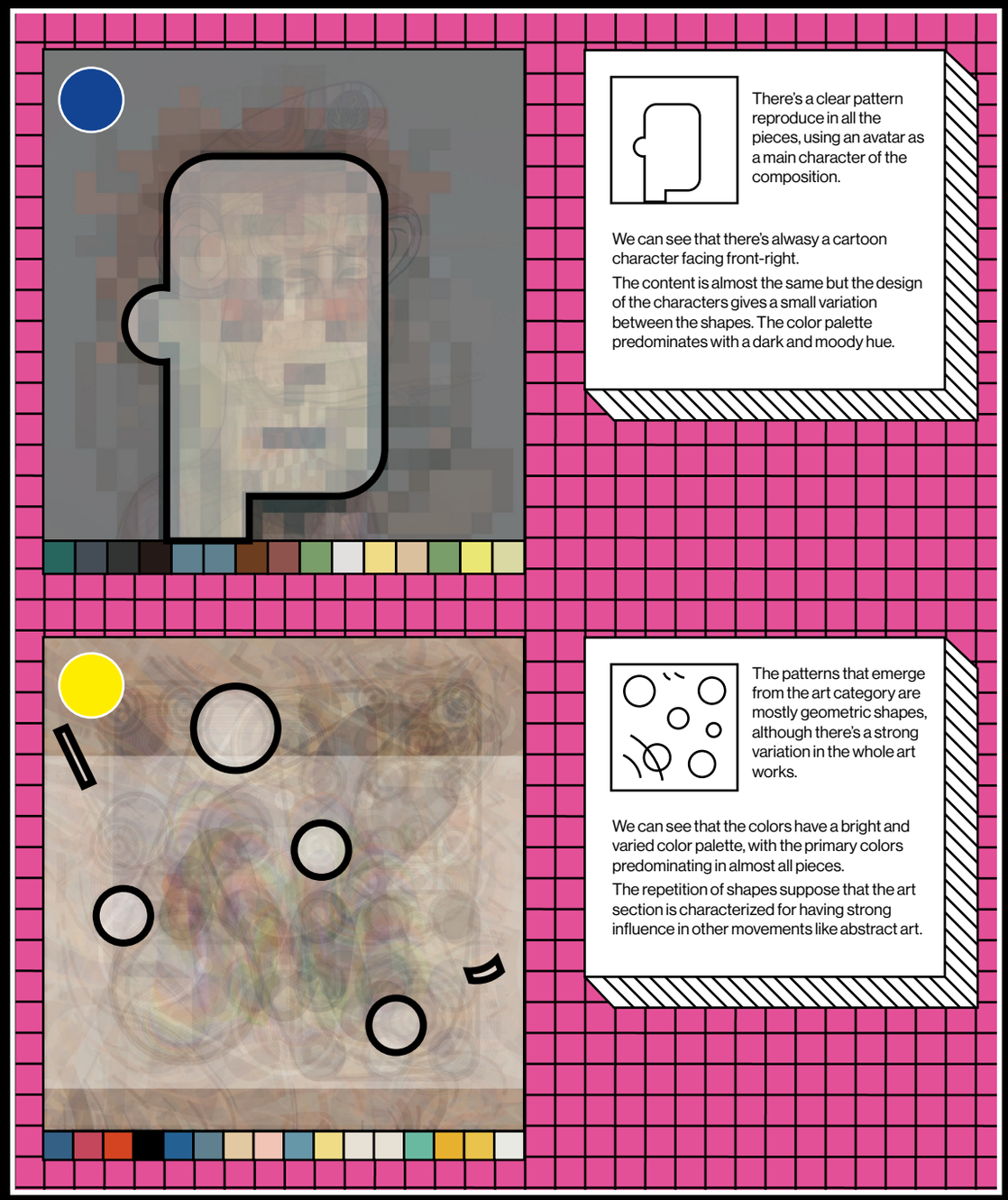


FINDING #4

Collectibles all follow a very similar pattern, displaying as a cartoon avatar. Art has a more varied pattern and colour scheme

COMPOSITE IMAGES OF COLLECTIBLES AND ART

The top 100 collectibles and art were overlayed to find visual patterns amongst the images



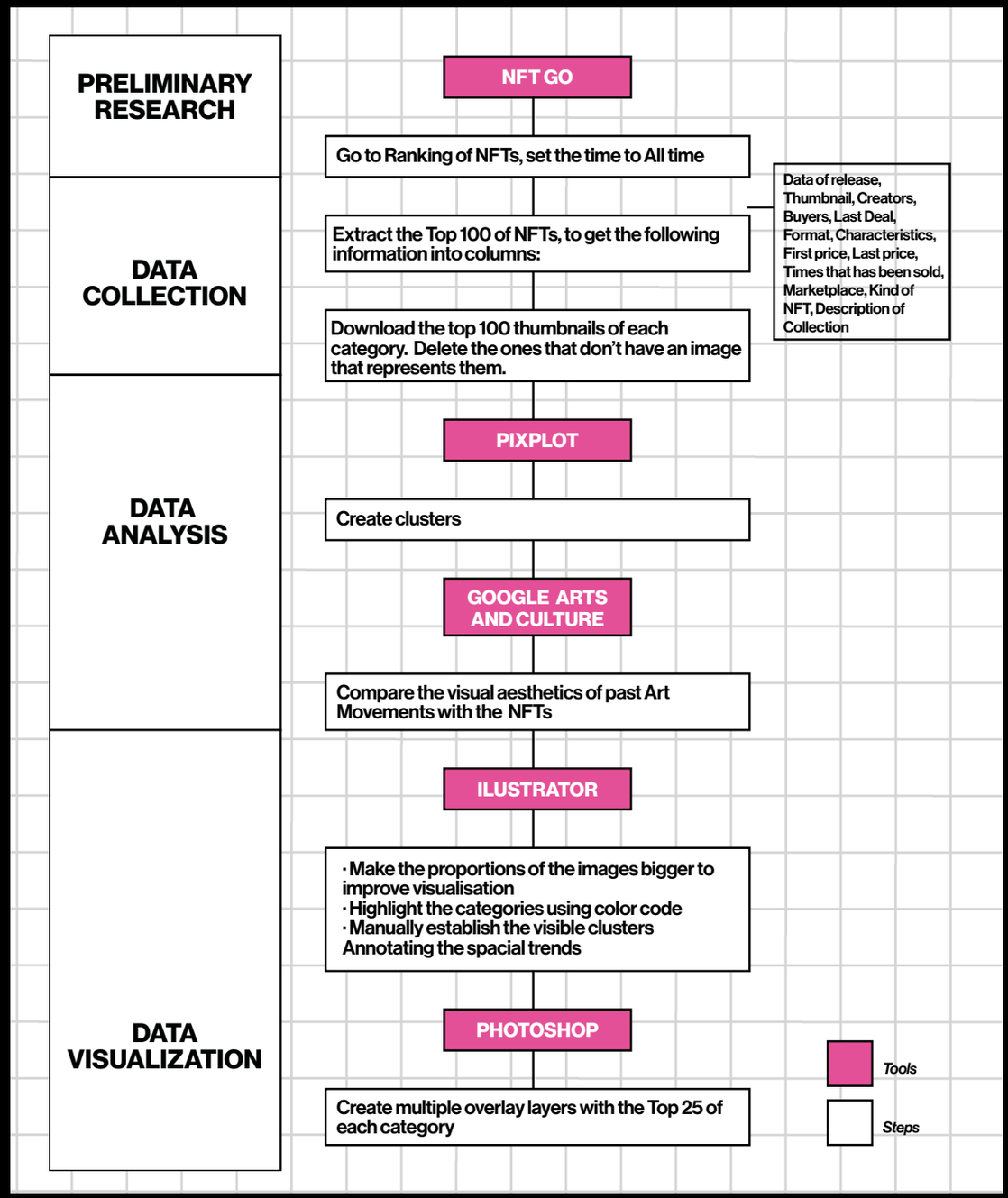
Collectible Art IP

SUMMARY OF FINDINGS

Collectibles are all almost identical, along with the previous findings of fast selling for high price, this suggests they are not being purchased for their artistic merit, but rather their use as a financial tool. The fact that art has a more varied aesthetic, taking inspiration from the traditional artworld, marries up to the theory that art collectors may consider NFTs the new art market, showcasing these pieces in digital galleries.

PROTOCOL DIAGRAM #3

PROCESS TO CREATE THE VISUAL REPRESENTATION OF PROTOCOL 3



CONCLUSION

NFTs were originally hailed as level-playing field for artists, putting the power of digital art sales into the artists' hands. It was a space for new artistic mediums to flourish, including algorithmic art. While the creativity of NFTs can be found and the passion for their art is appreciated by some buyers, our research shows that just a few individuals and studios dominate the market, with financial interests playing a key role in their sales.

For some, the opportunity to admire digital artworks is the center of the NFT market, but for others they are simply investments with a colourful pixelated face.