WHITEPAPER

ACYC

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Foreword

The work on this whitepaper began in mid-2022, and the topic of NFTs has been at the forefront since the beginning of 2021. NFT technology has been in development since 2014. Interest in NFT has exploded with the sale of the Beeples artwork. Oliver Meyer, the founder of ACYC, has been actively involved in the crypto market since 2016, researching the background to the market, the technology and its future. When NFT technology first became interesting in mid-2021 and the market developed around NFT technology, similar patterns emerged as have been observed in the young crypto market since 2016. We are talking here about the strong volatility, demand and instability of the young web3 technologies. Based on the past development of fungible tokens, it was therefore possible to estimate what the short-term future looks like for NFTs.

In 2023-24, the word NFT is reluctantly used due to the poor development of the market around NFT technology. Instead, terms such as digital assets or digital twin are used. However, this does not fully describe what NFT is. This is because NFT can be used not only for digital assets, but also for all analog assets.

Here in this whitepaper and beyond, we continue to use NFT as a descriptor to express what technology our tools and services focus on.

So when we talk about NFT in this whitepaper, we are referring to all physical and digital assets that will be delivered as NFT in the future.

Executive Summary

This whitepaper looks at the development and current trends in the market for non-fungible tokens (NFTs) in order to understand the conditions that govern this market and what future events should be considered. This white paper also looks at a solution to advance and apply the technology of the NFT layer. There are different approaches with a wide variety of applications to give NFT a benefit in the current world. Our solution with ACYC aims to bring coordinated applications to realize a significant digitization of all asset-related metadata on the asset lifecycle in the secondary market in order to make the secondary market more transparent, sustainable and valuable. However, ACYC began with the development and market launch of its own metadata provider trendhub.one. ACYC helps to gain sufficient knowledge, network and reputation in the field of metadata. But trendhub.one is now much more than just a simple metadata provider. trendhub.one is a democratized valuation method in the form of a social media platform that has integrated token-based gamification as its engine. In this way, trendhub.one delivers a significant improvement in valuations for all types of assets worldwide in the spirit of web3. To ensure that this system can survive sustainably on the web3 market and not fade away like many other decentralized web3 valuation

applications, the ACYC team has expanded this type of technology with a social media component and provided the incentive to be financially involved with a crypto token ecosystem. The aim of trendhub.one is to promote trust, information equality and market growth in the NFT layer. Furthermore, NFTtrust for displaying metadata on third-party sites and NFTident for recording metadata are also planned and already in development. More on this in later sections.

It is widely accepted that **NFTs have significantly changed the market for digital assets**. Previously, buying and selling digital assets such as images, audio and video files was mostly an unstandardized, sometimes offline process that often required third parties acting as agents. Today, NFTs are often used as digital certificates of authenticity. They ensure that among a multitude of potentially completely identical copies, only one file can be considered a signed original and hence are used to buy, own and sell digital assets. However, after a short and massive surge in 2021, the NFT market collapsed in 2022, displaying growth rates of around -90 percent ("**surge-and-collapse**").

This discussion paper argues that - next to macroeconomic factors (war in Ukraine) and macro-societal (Covid-19 lockdowns) factors - **deal fever and fraud are two main drivers behind the collapse** and that the growth potential of the NFT market remains extraordinarily high, if these challenges can be mastered. **Deal fever** stems from buyers being driven by the fear of missing out on significant capital gains ("**FOMO**"), combined with the **lack of structured information and communication** about NFTs. This makes the market vulnerable to single news and hence high price and activity volatility. **Fraud** seems to be ubiquitous and has likely reduced the trust into the market.

While there have been innumerable technical innovations in the NFT space, these two challenges at least partly **call for social innovation**. In order to re-establish trust and prevent a second surge-and-collapse, a social corrective is required. This paper argues that **collecting, generating, condensating and displaying reliable valuation-relevant data on a decentralized ledger of a democratic entity** is to be the most promising way to do so. The NFT community should work on making this happen.

ACYC aims to reform the NFT market by creating platforms to transparently evaluate NFTs and their creators. A central data connection node (ACYC Protocol) will facilitate the exchange of standardized NFT metadata. This system is designed to increase trust and reduce information asymmetry. ACYC aims to create an accessible and trustworthy NFT ecosystem. To this end, comprehensive metadata is collected to help users make informed investment decisions and optimize interaction with NFTs. ACYC positions itself as a purpose-driven organization that aims to have a positive impact on NFT creators and buyers. By providing valuable and reliable information, it aims to increase trust and reduce market manipulation.

trendhub.one, which emerged from NFTaggregator.io (02.2021-03.2022), offers a platform for surveys, social media interactions and ratings. Innovative visualizations (3D format) and a decentralized structure enable deep user participation. The platform's goal is to help billions of people make better decisions based on real user experiences, both in their personal and professional lives. Good decisions require good, all-encompassing reviews. The foundation of trendhub is based on the thesis that reviews are best when an economic risk is taken with the review. Only then is a user sufficiently informed to give a meaningful review. Within the platform, this means that CRED tokens worth one US dollar must be staked. The risk taken can then be monetarily rewarded if the review is successful. In addition to issuing tokens for participating in surveys, the platform generates revenue through the sale of NFT reviews and partner revenue from NFT marketplaces. Effective customer acquisition and retention are critical to the platform's success.

ACYC is contributing to exactly that - a future where trust, transparency, and efficiency are the cornerstone principles fostering the development and growth of the NFT ecosystem. **We empower NFT buyers to make good decisions** supported by balanced, reliable and socially controlled data about NFTs by leveraging the collective knowledge of the NFT community and supplying them with reliable, condensed and easily understandable data for well-informed decisions.

ACYC is building **four products** which, in close interaction, aim to do so and hence **move the NFT market significantly forward**. Together they make sure

(1.) to **create** a new level of evaluation and make it accessible to the world.	**trendhub.one**
(2.) to **enable** metadata providers to store their data in the NFT.	**NFTident.io**
(3.) to **import & display** of valuations and other metadata to the point of sale.	**NFTtrust.it**
(4.) to **supply this data where it is needed most** - at the point of sale.	**ACYC protocol**

1. **trendhub.one ("trendhub")** is a gamified token-based NFT rating method that aims at collecting, generating, condensating and displaying reliable and valuation-relevant data on NFTs. Users shall be able to **find all relevant NFTs** (art, collectibles, gaming, metaverse) on the platform, and to **search and compare them based on reliable valuation-relevant metadata.** The metadata is not only collected from third parties. The platform will also allow users to playfully discuss and poll the true value of the NFTs in a unique way: a competitive poll between various NFTs. In doing so, **valuation-relevant meta data is not only collected, but also created**. Thus, the NFT community has the

perfect **place to exchange opinions and vote on NFTs**, which gives them the means to **spend fun time online and equip them with the relevant data to make good buying decisions**, including social checks and balances.

2. **NFTident.io ("NFTident")** is an app that subsequently records metadata about NFTs. The main focus of the NFTident app, however, is on the correct recording of data about the NFT. The creation of NFTs is carried out using existing blockchains, which are automatically selected for the respective NFT by the NFTident APP. The user must link his wallet to the app to create the NFT and to record data about the NFT. The NFTs are stored by the user himself.

   To correctly record the data for the legally compliant creation of NFTs and for subsequent data access, NFTident provides the function of providing the correct input fields for selection using AI and algorithms so that the user is always guided to the correct input for creating the NFT and building the correct asset data. Using lidar technology, the physical asset is geometrically recorded and saved and recorded as an original with copy protection integrated in the asset. For example, it is important for companies to create legally compliant NFTs that comply with the established norms and standards of their industry so that their NFTs remain tradable in the future. It should also be possible to add assets that are already in the lifecycle to a digital twin as NFTs by correctly preselecting the input fields for the asset in the NFTident APP. This allows users of all types to record their assets digitally in a comprehensive manner.

3. **NFTtrust.it ("NFTtrust")** In order for the lifecycle asset metadata to be available for the asset at the point of sale, dNFTs are primarily required that have additional fields available in their protocol and enable qualified metadata providers to display the lifecycle metadata. Even if no additional service is required to display the dNFT metadata, ACYC, the ACYC protocol and the NFTident app are still required to qualify and authorize the metadata providers and to enter the lifecycle metadata for the dNFT. For NFTs that also want to display their lifecycle metadata at the point of sale, however, an interface is required at the point of sale. This is where NFTtrust comes into play. NFTtrust consists of two functions: importing dNFTs or NFTs and displaying the lifecycle metadata in a separate field on the sales page.

4. The **ACYC protocol** aims to establish a **central interface between entities that deliver metadata about NFTs and entities that use such data**. The protocol will facilitate the exchange of standardized NFT metadata and provide a scalable high-security and low-carbon infrastructure. It will do so by creating a **central node for data exchange, and thus reduce the number of connections required between participants**, leading to a more efficient and scalable infrastructure. To address security and continuity concerns, the ACYC protocol will use dynamic

NFTs ("dNFTs"), that have encoded smart contract logic, allowing it to automatically change its metadata based on external conditions. The smart contract triggers changes in the dNFT's metadata, which changes the dNFT's attributes. **The changes are saved on the blockchain, making it difficult to withhold, compromise, or destroy the data. Faulty data entries can always be reset to earlier versions.** NFT marketplaces or stores will obtain the dNFT and display it next to the underlying NFT for which the dNFT entails the data. This standardized approach **will make it easier for companies to contribute, obtain and process NFT data, ultimately driving market efficiency and transparency.**

These products are created and run by a highly experienced team of tech entrepreneurs. They have a proven track record of developing innovative solutions in the tech industry and are passionate about creating a more secure and efficient NFT ecosystem. With their expertise and dedication, users can trust that these products are designed with their needs in mind and will continue to evolve to meet the demands of the market.

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A view on the beginning of the NFT space

NFTs and the ownership problem for digital assets

Essentially, an NFT is a securely transferable data storage, stored in a public ledger of a blockchain. For digital assets, NFTs are often used as digital certificates of authenticity. They ensure that among a multitude of potentially completely identical copies, only one file can be considered a signed original. They are used to buy, own and sell

- digital art work and collectibles (e.g., OpenSea, Rarible, SuperRare),
- gaming items and in-game assets (e.g., Helix, Illuvium),
- assets in the virtual world such as real estate (e.g., Roblox, Sandbox, Decentraland),
- music and other forms of digital media (e.g., SanSound, BandRoyalty),
- rights such as the right to access a premise or club (both real and virtual), or to execute a voting right (coachella, Azuki)
- certificates of authenticity and location of physical assets (BrickEstate, RedSwan, Realesto).[1]

It is widely accepted that NFTs have significantly changed the market for digital assets. As digital assets can be copied easily, quickly, infinitely, at low cost and without a loss in quality, it is impossible to tell apart the original and the copy - which in the past made it very hard to effectively and efficiently identify the owner of digital assets and transfer the ownership.[2] Of course, intellectual property laws know property rights also for digital assets, including ways to transfer and enforce them (including copyrights, which are typically not included in NFTs[3]). But this is mostly an unstandardized, sometimes offline process and often requires agents such as marketers or lawyers. On top of that, possession of digital assets is very easy to obtain and almost bears the same fruits as ownership itself. Hence, ownership rights were hard to be secured and transferred effectively. As markets can't operate without clear property rights and the ability to enforce them, markets for digital assets tend to struggle to operate efficiently and at scale.[4]

Software companies solved the problem by selling hardware (CDs), requiring user codes and delivering software as a service. Gaming companies sell digital assets that only function in their own controlled environment: the game. For digital art and collectibles, NFTs were the solution: "In doing so, they make it possible to build markets around new types of transactions - buying and selling products that could never be sold before, or enabling transactions to happen in innovative ways that are more efficient and

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[1] ResearchGate
[2] OneArtNation, Harvard Business Review
[3] SocialSamosa
[4] Harvard Business Review

valuable."[5] NFTs sought to empower digital creators to effectively own and monetize their artwork and cultivate their communities directly, without interference from agents.[6] This is directly obvious in the markets for digital art and collectibles, but also in the gaming industry. Due to the wake of various metaverses, creating and selling digital assets has become a vibrant business.[7]

The NFT trading surge-and-collapse in 2021-22

Depending on whether one considers 'Colored coins' by Meni Rosenfeld, Vitalik Buterin and Yoni Assia or 'Quantum' by Kevin McKoy as the first ones, minting NFTs started in 2012 or 2014 respectively. The NFT market has seen tremendous growth ever since. It peaked in late 2021 when the number of sales and active wallets hit all-time highs.[8] Various NFTs sold for unprecedented prices, sometimes in the millions of USD[9], even on well reputed platforms like Christie's and Sotheby's.[10]

Half a year later, however, the number of monthly sales went from almost 5.4m on Sep 1, 2021 to 1.3m on May 12, 2022 (-75 percent) and the number of monthly active market wallets had gone from over 1m in December 2021 to little over 400,000 in May 2022 (-59 percent).[11]

Graph 1: Number of NFT sales and active wallets trading NFTs 13 May 2021 - 12 May 2022.
Source: Graph by NonFungible, obtained from Vulcan Post (retrieved 5 April 2023)
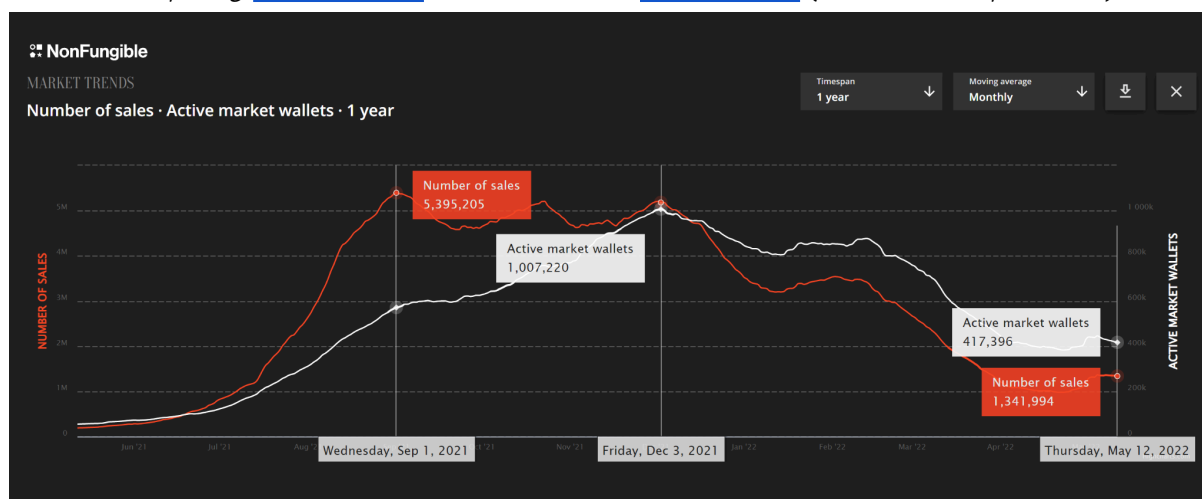
[5] ibidem
[6] Vulcan Post, NFTnow, OneArtNation
[7] Cointelegraph
[8] Vulcan Post, NonFungible
[9] NFTnow, ChainWitcher
[10] Christie's, Sotheby's
[11] Graph by NonFungible, obtained from Vulcan Post

A report by Protos from June 2021 supports this, showing that the number of NFT transactions on Ethereum dropped by over 90 percent between May and September 2021.[12]

Potentially further fueled by the collapses of Terra Luna in May 2022[13] and FTX in November 2022,[14] this trend has continued to this day: Current data by NonFungible[15] shows that the number of monthly sales went down to 333,521 (-94 percent compared to Sep 1, 2021) and the number of monthly active wallets went down to 129,670 (-87 percent compared to Dec 3, 2021). The global number of unique buyers has even gone down to 86,798. Even though the monthly trading volume is still at a considerable volume of roughly 467m USD (coming from over 4bn USD in September 2021), it is fair to say that the market for NFTs imploded.

Graph 2: Number of NFT sales and NFT Sales volume NFTs 6 Apr 2022 - 5 Apr 2023. Source: Graph by [NonFungible](#) (retrieved 5 April 2023)
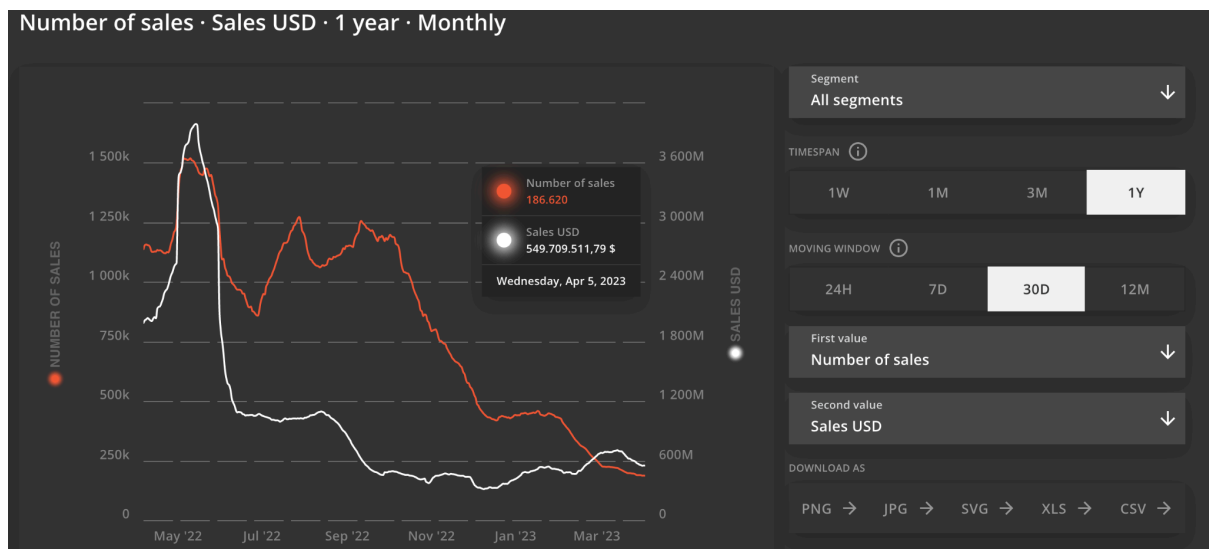
Graph 3: Number of NFT sales and active market wallets 30 Mar 2023 - 5 Apr 2023. Source: Graph by [NonFungible](#) (retrieved 5 April 2023)

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[12] [Protos](#)
[13] [BBC](#)
[14] [Forbes](#)
[15] [NonFungible](#)

While the development has not been identical across all segments, all of them were affected, as can be seen from the comparison of the segment-specific graphs:

Graph 4: Number of NFT sales and NFT sales volume 6 Apr 2022 - 5 Apr 2023.
Source: Graph by [NonFungible](https://nonfungible.com) (retrieved 5 April 2023)

ART
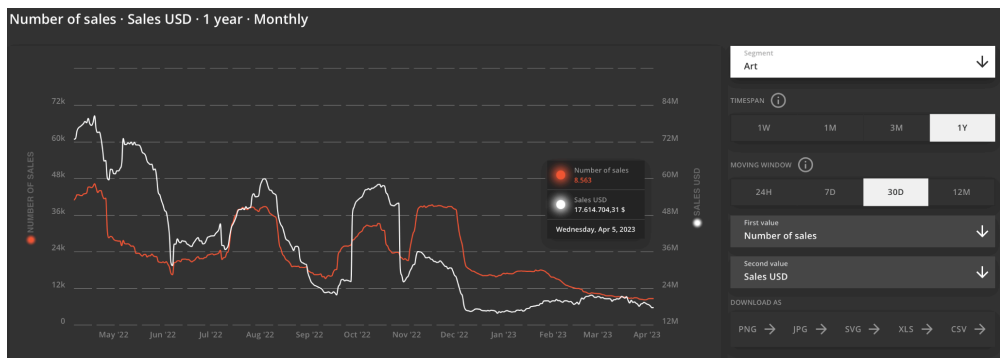
COLLEC-TIBLES
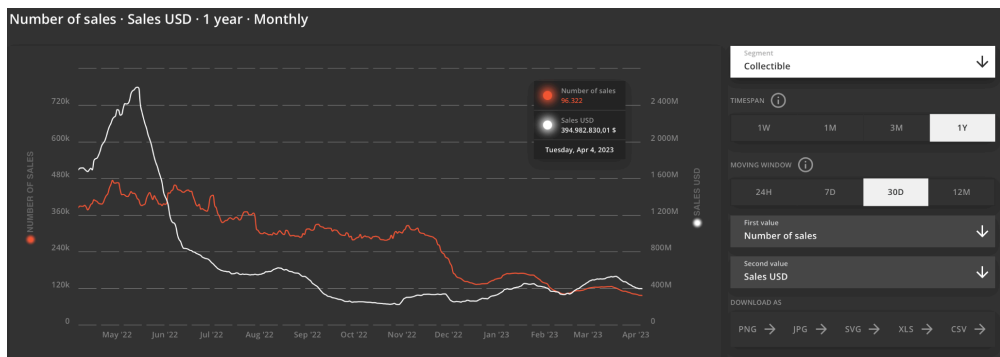
GAMING
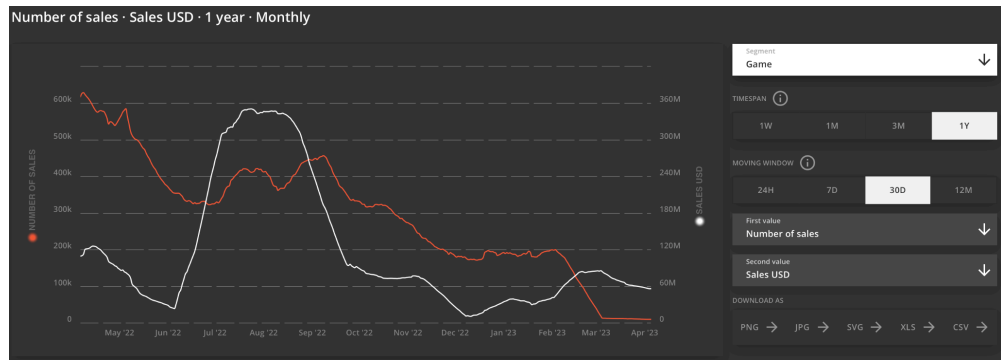
META-VERSE
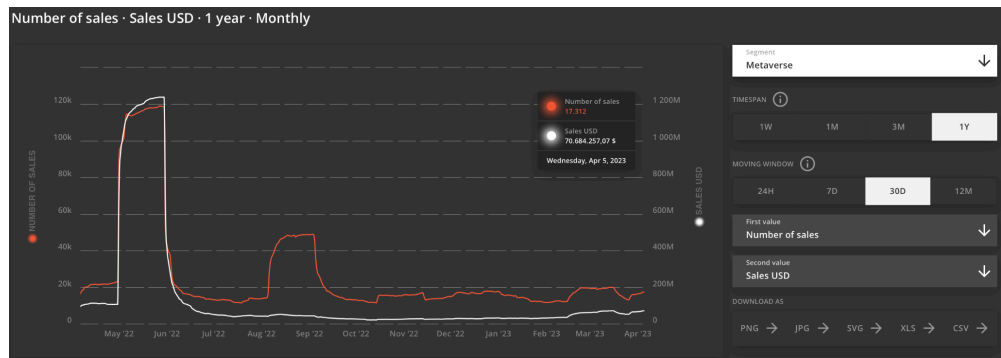
UTILITY
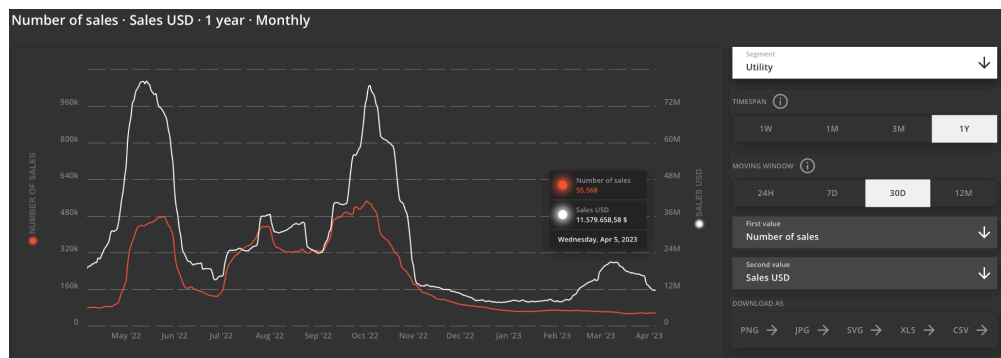
Accordingly, the general interest in NFTs has fallen sharply, as indicated by a 90 percent decline in Google searches for "NFT" since its peak in calendar week 4 of 2022 (=100).[16] Meta even pulled out of NFTs completely in March 2023.[17]

Graph 5: Interest in the search term "NFT" over time
Source: Graph by [Google Trends](#)

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[16] [Google Trends](#)
[17] [The Verge](#)
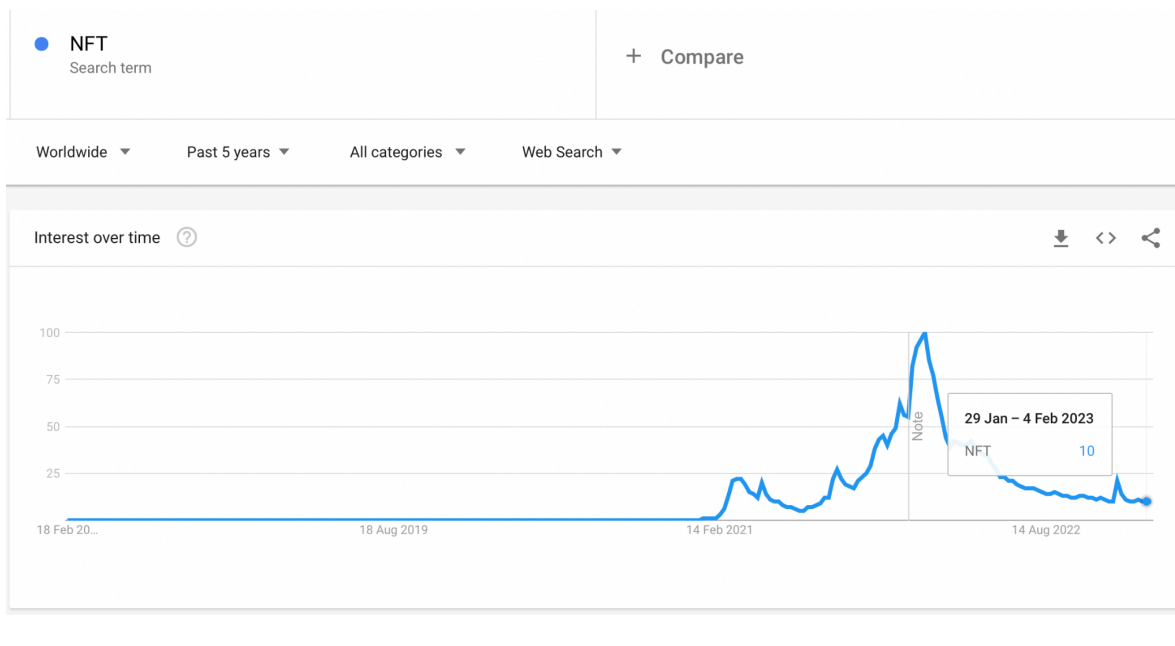
Reasons for the 2022 NFT trading collapse

Overview

Despite all the bad news, there are positive indicators as well: After ebay entered the NFT space in 2021[18] and offered its first NFT collection in May 2022,[19] Amazon announced in January 2023 to enter the NFT arena.[20] Hence, two of the biggest ecommerce players seem to double down on the market. Furthermore, some analysts expect a significant increase in market size over the coming years - even after the steep downward trend of the world economy and NFT market was in full swing: End of May 2022, SkyQuest Technology expected the NFT Market to reach a value of 122 bn USD by 2028, implying a CAGR of over 34 percent from 2022 to 2028.[21] In June 2022, Research and Markets forecasted a 35 percent CAGR (4.5x) 2022-27 of the NFT market.[22] Given that the market collapsed by about 90 percent, a growth of 4.5x would mean that almost half of that loss would be recuperated in the next 4 to 5 years.

Is this possible? And if yes, what needs to happen in order for the NFT market to show this growth?

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[18] [Reuters](#)
[19] [Techcrunch](#)
[20] [Cryptonews](#)
[21] [GlobeNewswire](#)
[22] [PRnewswire](#)

Before going into these questions, it is important to know who is owning or interested in NFTs, before turning towards political and macroeconomic aspects followed by NFT market-specific aspects.

NFT investor demographics

Geography: Using data from Google Trends, Statista data shows that the interest in NFTs is highest in East Asia and Oceania: The most interested people live in China, Hong Kong, Singapore and Macao. Taiwan and South Korea are also in the top ten. Apart from Gibraltar, there is no European country among the top ten and Cyprus is the only European country in the top 25. Canada and the US come in on ranks 27 and 40 respectively. The first large European economy is Switzerland, ranking at 46. Europe's biggest economy, Germany, ranks at 124.[23]

Graph 6: Interest in NFTs by country, top 15 countries
Source: Graph by [Statista](#)

Characteristic	Dec 2021	Jan 2022	Feb 2022	Mar 2022	Apr 2022	May 2022	Jun 2022	Jul 2022	Aug 2022	Sep 2022	Oct 2022	Nov 2022
China	100	99	94	87	85	100	94	100	100	100	100	100
Hong Kong SAR	60	75	91	93	100	98	100	98	100	92	96	94
Singapore	75	84	100	100	96	91	94	90	89	83	83	81
Macao	36	49	67	67	70	68	68	69	69	70	70	72
Nigeria	27	32	44	47	56	63	68	68	68	68	68	68
Gibraltar	66	100	93	85	89	76	79	76	71	74	74	64
Taiwan	26	36	56	57	65	59	60	57	54	56	55	55
South Korea	43	45	45	45	50	50	50	50	50	50	49	51
Andorra	56	59	68	58	60	62	57	54	50	53	48	48
Bermuda	41	57	67	59	51	50	46	45	45	45	45	47
Lebanon	31	40	56	58	60	54	53	51	49	48	47	47
Georgia	18	23	32	38	43	45	44	44	42	46	43	47
Mongolia	51	55	58	54	53	53	54	53	51	50	51	46
St. Helena	30	35	35	32	36	37	37	40	41	41	43	46
Cyprus	42	51	58	55	55	52	51	50	49	46	46	45

In line with that, CashNetUSA[24] found that people from Singapore and Hong Kong are most interested in NFTs - measured by online searches per capita. The rest, however, differs widely: Canada, Iceland, US, Liechtenstein, San Marino, Australia, New Zealand and Malta follow.

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[23] [Statista](#)
[24] [CashNetUSA](#)

With regards to NFT ownership, India leads the way with 7% of people owning NFTs, followed by Vietnam (6%), Hong Kong and Singapore (both 5%), Brazil, Ghana, Indonesia, Nigeria and the Philippines (all 4%). The US comes in on no. 10 (3%), followed by Ireland, Kenya, and Canada.[25]

Graph 7: NFT ownership by country, top 15 countries
Source: Graph by [Finder](#)

Country	Sep 22 ▼
🇮🇳 India	7%
🇻🇳 Vietnam	6%
🇭🇰 Hong Kong	5%
🇸🇬 Singapore	5%
🇧🇷 Brazil	4%
🇬🇭 Ghana	4%
🇮🇩 Indonesia	4%
🇳🇬 Nigeria	4%
🇵🇭 Philippines	4%
🇺🇸 United States of America	3%
🇮🇪 Ireland	3%
🇰🇪 Kenya	3%
🇲🇾 Malaysia	3%
🇻🇪 Venezuela	3%
🇨🇦 Canada	2%
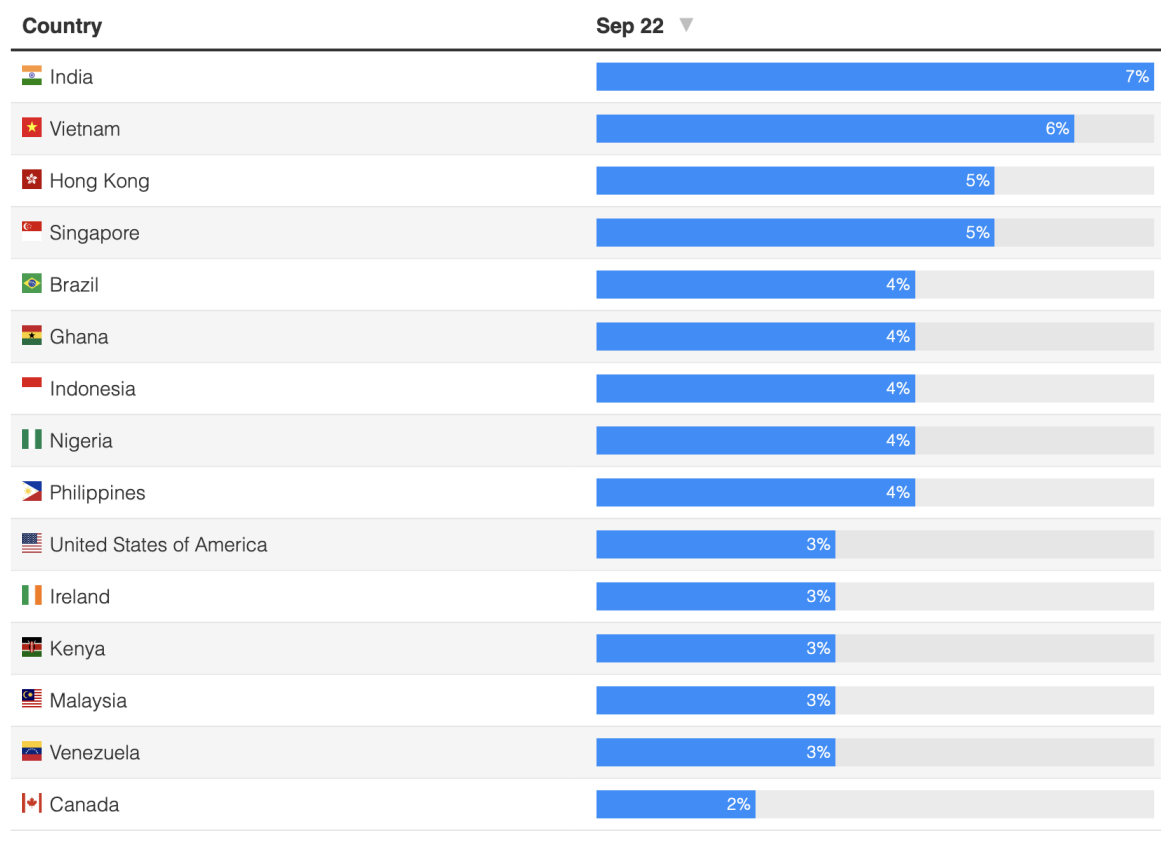
Altogether, it seems fair to say that the engagement in NFTs seems to be highest in East Asia, Oceania and North America.

Age: According to Finder data, 18-34 year-olds are most likely to own an NFT in most countries, except for Hong Kong, Vietnam, Ghana and Kenya.

Graph 8: NFT ownership by country, top 15 countries
Source: Graph by [Finder](#)

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[25] [Finder](#)

Chart legend: ■ 18-34 ■ 35-54 ■ 55+

Country	18-34	35-54	55+
Singapore	9%	4%	3%
India	8%	7%	5%
United States of America	5%	3%	
Nigeria	5%	4%	4%
Brazil	5%	4%	3%
Philippines	5%	3%	2%
Hong Kong	5%	6%	5%
Indonesia	5%	3%	4%
Ireland	5%	2%	2%
Vietnam	5%	6%	11%
Ghana	4%	3%	9%
Malaysia	4%	3%	2%
Australia	4%	3%	
Kenya	4%	3%	5%
Argentina	3%	2%	1%
Norway	3%	2%	
Sweden	3%	2%	
Mexico	3%	2%	1%
Venezuela	3%	3%	2%
Colombia	3%	2%	2%
Canada	3%	2%	
United Kingdom	3%	2%	
New Zealand	3%	1%	2%
South Africa	3%	2%	2%
Germany	2%	1%	
Japan	2%	2%	2%

Data by the US Census Bureau for the US is a bit more granular: It shows that 18-24 year-olds are the most engaged age group regarding NFTs. 14 percent are trading NFTs and 18 percent are interested in doing so. They are followed by the 25-34 year age group with 8 percent trading and 11 percent interested.[26]

Gender: According to data by Finder, men are more likely to own an NFT. On average, about 4% of men worldwide report owning an NFT, compared to 2% of women. The gap between men and women is widest in the United States, where 4% of men report owning an NFT, and only 1% of women. The difference is lowest in Japan, where 2% of women own an NFT compared to 1% of men.[27]

Income: Data by the US Census Bureau shows an interesting divide in NFT investments depending on income for the US: People with an annual income of less than 25,000 USD are equally likely to invest in NFTs as those earning more than 150,000 USD annually. Middle-income respondents (25,000 to 150,000 USD) were the least interested, with up to 94% not interested in NFT at all.[28]

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[26] Civic Science
[27] Finder
[28] Civic Science

Graph 9: NFT ownership by income group, United States
Source: Graph by [Civic Science](#)

Which of the following best describes your experience with non-fungible tokens (NFTs)?
by **Income**
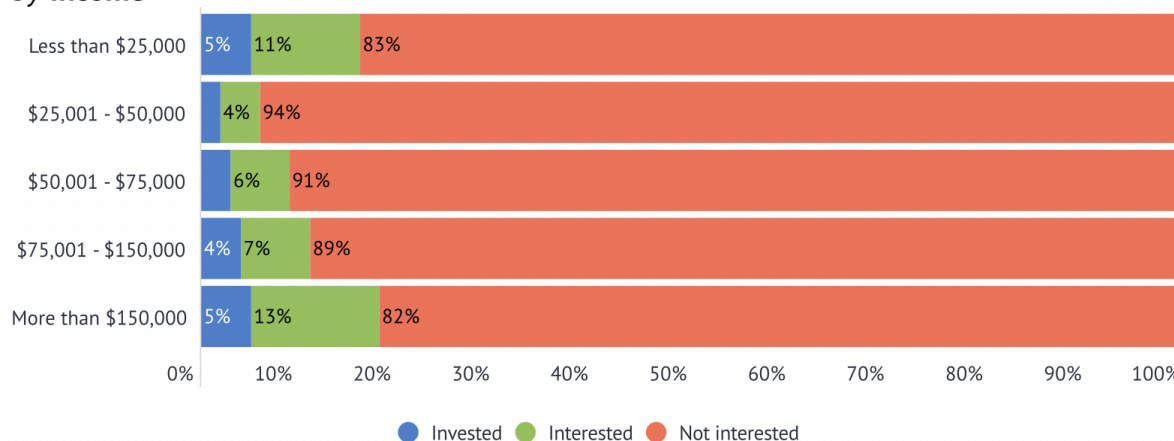
It is noteworthy that in the area of crypto currency, investors mostly only invest their disposable income.[29] Of course, this might be different for NFTs. However, it is likely that there is a considerable overlap between traders of NFTs and cryptocurrencies.[30]

Information sources: It is also remarkable that NFT and cryptocurrency investors turn mainly to online sources for their research. According to a study by Strategy&, YouTube, websites, forums and Instagram of the top four sources of information. Also Binance finds that 52 to 60 percent of cryptocurrency investors turn mainly to online sources for research.[31]

Political and macroeconomic factors leading to the 2022 NFT trading collapse

Looking at The Dotcom bubble helps understand the macroeconomic dynamics. The Dotcom bubble was a speculative frenzy in the late 1990s and early 2000s that saw the rapid rise and fall of many internet-related companies. From 1994 to its peak in March 2000, the Nasdaq stock market index increased by over 10x and subsequently fell by almost 80 percent from its peak by October 2002. Nevertheless, it recovered and grew by almost 100% over the next two years, reaching the levels of early 1999.[32]

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[29] [Binance](#)
[30] [Security.org](#)
[31] [StrategyandPwC](#), [Binance](#)
[32] [Marketwatch](#), [YahooFinance](#)

Graph 10: Development of Nasdaq 1994-2018.
Source: Graph by [Yahoo Finance](#) (retrieved 5 April 2023)

The reasons for the Dotcom bubble and its burst are numerous. Among the most prominent are:[33]

1. **Technology shift:** Investors were excited by the prospect of the web 2.0 revolutionizing industries and creating new opportunities for businesses to grow and thrive. As a result, there was a rush of investment into internet-related companies, many of which had little or no earnings and were operating at a loss.

2. **Availability of funds:** Funding from venture capitalists was easily available due to low interest rates. A lowered top marginal capital gains tax in the United States encouraged individuals to invest in shares, including internet-related companies that were performing very well despite bad traditional metrics such as the price-earnings-ratio.

3. **Public encouragement:** Investment banks encouraged investments in technology companies as they profited significantly from initial public offerings of these companies.

This led to a frenzy of buying and selling of technology stocks, driving up the prices to unsustainable levels. And it came to a strong surge when various events shook that house of cards, for example:

- Japan's economic outlook for 1999 and 2000 was not positive.[34]
- Mid 1999, the Federal Reserve Bank started to increase their interest rates.

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[33] [News-Gazette](#), [Strategic Organization](#), [BusinessInsider](#) retrieved from [archive.org](#), [BusinessInsider](#), [Totally wired](#)
[34] [JRI](#), [cao.go](#)

- Warning voices urged a stricter look at corporate key metrics or even predicted that many internet companies would soon file for bankruptcy.[35]
- Yahoo! and ebay ended their merger talks.[36]
- Microsoft was about to lose an antitrust case and saw a sharp decrease in its share price.[37]

This led to the realization that many Dotcom companies were overvalued and had little or no earnings to support their stock prices. Additionally, many of these companies were operating in an unproven market, with no clear path to profitability. The effect was reinforced by the fact that many employees of technology companies sold their shares directly after their lock-up periods, which led to a further decrease of the share prices.

The similarities with the situation in the NFT market in 2021 and 2022 are uncanny:

Technology shift: The transition from Web 1.0 to Web 2.0 played a significant role in the Dotcom[38] bubble and its aftermath. Web 1.0 was characterized by static, one-way communication where users were primarily passive consumers of content. Websites were often informational in nature and focused on presenting information to users in a static manner. The transition from Web 2.0 to Web 3.0 is still ongoing, but it represents another major shift in the evolution of the Internet and the technology industry. While Web 2.0 was focused on user-generated content and interactive communication, Web 3.0 is focused on decentralization, interoperability, and machine-to-machine communication - and hence driving growth beyond the current levels. Yet, Web 3.0 is still in its infancy and hence Web 3.0 companies are also operating in an unproven market, with no clear path to profitability - just like Dotcom companies in the late 1990s.

Availability of funds: Just like in the late 1990s, in 2021, during the hype of the NFT market, money was easily available. Interest rates were at record lows and venture capital investments at record highs.[39] 2022 was very different, however: After Russia's invasion of Ukraine in February 2022, energy prices increased strongly due to the war and sanctions.[40] Interest rates followed shortly thereafter, in an attempt to curb inflation.[41] As a result 2022 saw a strong decline in venture capital funds.[42] Moreover, private consumption decreased[43] and along with it most likely also the willingness to invest into NFTs as disposable incomes (that investors mostly started to deteriorate. Especially, the investor group earning less than 25,000 USD annually, is likely to slow down or stop trading as their disposable income will deteriorate most due to inflation.

[35] Barrons, Bloomberg
[36] CNN
[37] NewYorkTimes
[38] Bankrate
[39] DW, Factset
[40] ECB
[41] Reuters, NewYorkTimes
[42] Deloitte
[43] CrunchBase

Public encouragement: Also during the NFT hype, there was a lot of public encouragement. This aspect will be discussed in the next chapter.

This (admittedly superficial) look at the political and macroeconomic environment suggests that these aspects might have played a notable role in the NFT market decline. Hence, it is not unlikely that the market recovers once these macroeconomic factors improve.

However, a closer look at Graph 1 reveals that the number of NFT sales and active market wallets already started to decrease months before Russia's invasion of Ukraine. This trend was only accelerated by the political and economic developments after February 2022. In line with that a study by Strategy& shows that 36% of German cryptocurrency and NFT buyers had already reduced their investments in Q4 of 2021.[44] Hence, not everything can be explained by macroeconomic factors. NFT market-specific aspects will be discussed in the following chapter.

NFT market-specific aspects leading to the 2022 NFT trading collapse

What needs to happen in the NFT space in order to get back on the growth track? Factors suspected to prevent NFT mass adoption are:[45]
1. **Accessibility:** It is tedious to trade NFTs because it requires a certain level of technical understanding and skill.
2. **Scalability:** In some cases the blockchain technology was unable to handle the high market demand.
3. **Environmental impact:** It takes a high amount of energy to run blockchains.
4. **Real life utility:** Often, NFTs do not play a role in people's real (offline) lives - or their virtual lives do not play a big enough role in their lives as a whole.
5. **Security:** NFTs can get (and already got) stolen when the smart contract security is inadequate.
6. **Fraud:** NFTs get faked, illegally minted from someone else's artwork, or sold in fake NFT stores.
7. **Valuation:** There is a lot of uncertainty in determining the fair price of an NFT.

All of them are reasonable barriers to NFT adoption beyond the levels of 2021. But not all of them are likely the reason for the sudden decrease in NFT trading in 2022, as a closer look reveals:

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[44] StrategyandPwC
[45] Cointelegraph, NFTify

Accessibility and scalability

It is apparent that problems with accessibility and scalability did not prevent people from trading in 2021. Hence, the lack of access or technical scalability cannot be causal for the sudden drop. Nevertheless, it is not unlikely that the strong surge in NFT prices motivated NFT buyers to accept the fact that trading NFTs is tedious in return for extraordinary profits. When the market declined, generating profits became increasingly hard, which might have been a reason to slow down or stop trading. This is underpinned by the fact that some NFT buyers are so-called 'flippers' trying to buy low and sell high quickly.[46] And it would also be in line with OECD data from the Asian cryptocurrency market: The most important reason to trade cryptocurrencies is to "make money quickly".[47] And while this might not be the same for NFTs, it is likely that there is a considerable overlap between traders of NFTs and cryptocurrencies.[48]

Altogether, it seems likely that improved accessibility and scalability will increase the NFT market growth. Technical and usability innovations will help to do so. However, it seems unlikely that problems with accessibility and scalability were an important reason for the surge in NFTs and are a main driver to recover from the crisis.

Environmental impact

There is very little data about how important environmental aspects are for NFT buyers. However, concerns about the environmental impact of cryptocurrency increased among buyers, journalists, academics and policy makers.[49] While this did not specifically mention NFTs, it suggests that there is a growing awareness about the environmental cost of blockchain-based technologies. The environmental impact of NFTs specifically has also been a topic of discussion and debate, during which several artists and art fans have expressed concerns about the environmental impact of NFTs, to the point where companies canceled their plans to launch NFT businesses after a public outcry for environmental reasons.[50] As awareness of the environmental impact of NFTs has grown, one might speculate that buyers have become more hesitant to buy and invest in NFTs, which could contribute to the decline in demand.

However, the timing speaks against it: In May 2021, Ethereum announced that it will reduce its energy consumption by 99.9 percent through changing from a proof-of-work to a proof-of-stake mechanism.[51] However, as mentioned before, the number of NFT transactions on Ethereum dropped by over 90 percent between May and September 2021 - so after this announcement.

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[46] Colormatics
[47] OECD
[48] Security.org
[49] See for example: Morgan Stanley, New York Times, CNBC, Columbia University, White House
[50] See for example: Wired, TheVerge, ArtNews, CNN
[51] Ethereum

Moreover, while there is a public debate about it, ecological considerations do not seem to play a big role for crypto currency and NFT buyers. Recent studies about their attitudes and behaviors do not even touch upon this topic.[52]

Altogether, concerns about the environmental impact of NFTs might have played a role, but are unlikely to be an important driver.

Real life utility

The time spent online and gaming has significantly increased during the COVID-19 lockdowns, which means that - in absence of real life encounters - the digital life became more important to many.[53] Interestingly, over 75% of e-sports fans are interested in NFTs.[54] Accordingly, real life utility of digital assets is likely to have increased during the COVID-19 lockdowns as people's online lives played a bigger role than ever before.

What about the timing? The first lockdown in Wuhan, China, started in January 2020.[55] Globally, most of the lockdowns happened in 2020 and 2021, only very few were still imposed in 2022.[56] The hype around NFTs rather suddenly started mid 2021, the decline started in the beginning of December 2021 and accelerated in February 2022 (see Graph 1). This seems to be consistent with the idea that more time online results in more engagement with NFTs: One could argue that in 2020 people spent time online in a 'usual way' (websites, social networks, gaming, etc.) and after a while extended their activities to such things like NFTs. This is in line with research showing that the most important sources of information are social media, websites and forums.[57] In any case, many people did presumably have more time to invest into NFT research and trading during lockdowns as meeting people outside their household was not an option.

However, it should be mentioned that the hype around NFTs began only shortly after artist Beepl sold "Everydays: The First 5000 Days", an NFT-linked digital collage for 69 m USD on March 11, 2021. This might be a coincidence, but also hints towards other motives like buyers' greed that caused an 'NFT gold rush'.[58]

Altogether, real life utility seems to be a considerable driver of NFT investments. The return of a 'normal life' without lockdowns in 2022 might have contributed to a reduced interest in NFTs. This is in line with the fact that from May to November 2022, China was the country with the highest interest in NFTs (see NFT investor demographics), a time when only China still imposed large-scale lockdowns.

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[52] OECD, Binance, StrateguandPwC
[53] Pew Research, Frontiers, DAK, PubMed, WEF, Forbes
[54] Codeless
[55] AP News
[56] Wikipedia
[57] Binance, StrateguandPwC
[58] Yahoo Finance, Entrepreneur

Security, fraud, and valuation concerns

Security, fraud, and valuation concerns remain as potential drivers of the surge-and-collapse starting in 2021. All of them essentially come down to a lack of trust and reliable information. Given the macroeconomic dynamic in 2022 and the presumed decrease in disposable income resulting from that, it is likely that the importance of these aspects has increased during that time. As it will remain a problem also in more prosperous times, these aspects will be the focal point of this discussion paper.

In connection with security, fraud, and valuation concerns, this paper argues in favor of two important reasons for NFTs' surge-and-collapse in 2021-2022:
1. **Deal Fever:** FOMO combined with the lack of structured information and exchange about NFTs makes the market vulnerable to single news and hence high price and activity volatility.
2. **Fraud:** Fraudulent business practices seem to have been ubiquitous and have likely reduced the trust into the market.

It is impossible to prove this hypothesis without directly asking people that pulled out of the market, but the argument can be underpinned by the following observable indicators and logic.

Deep Dive: Deal Fever

Deal Fever can be characterized as "going forward with a deal without performing enough analysis and due diligence beforehand. Getting enthralled in the excitement of a potential deal can either lead to you making a bad deal or paying too much. (It) is all about pursuing the end goal at all costs instead of thoroughly looking at the means, and fully evaluating whether the deal will be good (…)"[59]

A key driver of Deal Fever in the NFT space seems to be the fear of missing out, or 'FOMO'. This is "the feeling of apprehension that one is either not in the know or missing out on information, events, experiences, or life decisions that could make one's life better."[60]

In order for FOMO to happen, NFT market participants would first of all have to be influenced by others. This can be supported by the fact that the crave for NFTs differs by location, as a recent study of CashNetUSA found.[61] Hence, it is likely that the crave for NFTs is a social construct, i.e. it is influenced by a person's media consumption or social contacts, be it in real life or online. This was presumably also fueled by high-profile

[59] Dealroom
[60] Wikipedia
[61] CashNetUSA

celebrities embracing NFTs, such as musicians and sports stars[62] as well as the widespread use of social media influencers promoting NFTs.[63]

Influencers deserve a closer look: Next to NFT creators that promote their artwork, influencers also play an important role in the NFT space. They are either selling their NFTs or allow NFT creators to promote their work to a broader audience by tapping into existing communities.[64]

> *(…) influencers have an outsized impact on the NFT space. Equally as important as the artists and creators themselves are the celebrities, curators, marketplace owners, and tastemakers who promote NFT projects on YouTube, Instagram, Discord, and, of course, Twitter (…).[65]*

> *(T)hey can be the decisive factor between a successful or failed launch.[66]*

Often, people follow them for advice and guidance on how to navigate the NFT market. Hence, NFT influencers do not only leverage their reach, but also their credibility and trust with their followers. But what earns them trust?
- Their reach on social media (working as social proof),
- The belief that they have above-average experience or success in collecting or investing in NFTs,
- The ability to break down complex topics into simple and actionable insights that inexperienced users can understand.[67]

So trustworthiness is key. However, concerns have been raised regarding that. It has been criticized that they merely give buying advice instead of substantially examining and criticizing the art work.[68] On top of that, their advice in some cases seems to be more driven by their personal interest than that of their followers:

> *A common criticism of NFT influencers is that they are paid to promote projects that they never actually vetted properly, often leaving behind disgruntled investors. (…) Some of the biggest influencers fail to do proper due diligence and will promote nearly anything for money. And what's even worse is when they do so in a concealed way.[69]*

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[62] Harvard Business Review
[63] SocialSamosa, TokenizedHQ, Jennifer Kate
[64] Ibidem
[65] Decrypt
[66] TokenizedHQ
[67] TokenizedHQ, Jennifer Kate
[68] Monopol-Magazin
[69] TokenizedHQ

As payment is frequently made in the form of free NFTs, influencers have a vital interest in hyping certain NFTs rather than giving solid advice.[70]

Does all of this lead to FOMO? Various publications[71] indicate that FOMO seems to have been a serious issue in the NFT space - to the point that even help guides have been published online[72] or businesses are bearing the term "FOMO" in their names.[73]

> *The whole market is driven by FOMO and Hype.[74]*

> *The feelings of greed, fear, and anxiety have reached their peak in NFT investing and need to be addressed. People are investing in NFTs with money they can't afford to lose and with the hopes that empty promises lead to execution.[75]*

As commentators of the NFT space utter, the NFT hype was driven by the wish to get rich quickly:

> *Of course, it's hard not to get hyped by a get-rich-scheme where so many actually have gotten rich quick: with so much vapor changing hands for so much money, you can't spell NFT without FOMO.[76]*

> *We've had amazing stories of rags to riches come ups, people pulling themselves and their families out of crippling debt, and others making a significant impact in their communities.[77]*

And FOMO seems to be consciously instrumentalized by businesses:

> *Projects will create a reality where they are, without a doubt, the next "blue chip." They will convince you that they will sell out immediately and reach the moon in a beat. They're the chance of a lifetime for you. They're the project that will make all your dreams come true."[78]*

> *Because 99% of NFT & Crypto projects are built to create FOMO, and many of them are VERY GOOD at it! Which creates the perfect environment for scammers to successfully scam you.[79]*

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[70] The fact that Meta pulled out of NFTs might change their role, but this remains to be seen.
[71] For example: Ebutemetaverse, TechCrunch, CyberScrilla, Nefture, Patlid
[72] Ebutemetaverse, Patlid, Ledger
[73] FOMOlab, thatFOMOisreal
[74] Rikam Palkar
[75] Ty Herrenbruck
[76] CashNetUSA
[77] NFTnow
[78] Nefture
[79] ibidem

This anecdotal evidence suggests that the NFT space was characterized by a trader mentality (looking for short term gains from price fluctuations), rather than an investor mentality (looking for long term gains from investing in assets that are sold below their 'inner value'). This argument can be underpinned by the fact that important drivers of 'value' have not materialized yet. Forbes defines value as follows:

Value = Scarcity + Utility + Reputation + Liquidity [80]

Scarcity is a dilemma for creators, owners and businesses since scarcity is necessary to make art valuable, but at the same time limits growth.[81] So value and explosive growth as it has been seen in the NFT space are a paradox. However, this could be alleviated by an increase in demand and real-life utility, for example through substantial growth of the metaverse, which could create a surge in demand for NFTs. This, however, is still in its infancy.

While Gartner predicts that 25 percent of people will spend at least one hour per day in the Metaverse by 2026[82], real-life utility of NFTs is still low for the majority of applications. As long as digital art and metaverses are things mostly *imagined* to be mass-adopted in the future (instead of being so now), assets for such occasions will remain an investment based on speculation on their real-life utility in the future.[83] On top of that, the use of the Metaverse might in some instances be possible only through local monopolists - like gaming companies or hardware providers (e.g., virtual reality goggles).

In addition, the NFT market is a place of high pace and uncertainty, which is hard to keep up with, even for professionals:

> *There's a running joke within the industry that days in web3 are like months in the web2 world. As exaggerated as it seems, it's also true. No matter how hard you try, it's impossible to keep up with all of the information.[84]*

On top of that, especially at 2021 prices, a lot was at stake. Prices of NFTs were skyrocketing and in many cases barely affordable.[85]

> *Life-changing sums of wealth can be made, lost, or stolen overnight.[86]*

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[80] Forbes
[81] Spiceworks
[82] Gartner
[83] Forbes, Cointelegraph, NFTify
[84] NFTnow
[85] ChainWitcher, NFTnow
[86] NFTnow

As a result, the NFT space is "an industry fueled by FOMO, FUD, luck, and deep emotions."[87]

All of that comes in combination with the fact that there are very few guidelines on how to determine the 'inner value' or a fair price of an NFT. Unlike regarding the evaluation of stock prices or companies, there is neither technical analysis, nor a mathematical scheme to determine the 'inner value' of art, let alone digital art. The value of NFTs is a social construct. Anyone can assign any value to it. Hence, "people can't determine the factors that might drive the price of NFTs. Due to this, the fluctuations in prices remain constant, and evaluation of NFT becomes a big challenge."[88]

Given this evidence, it seems fair to conclude that the NFT space in 2021 suffered from Deal Fever.

Deep Dive: Fraud

Fraud is ubiquitous in the NFT market[89] and it can happen on the individual level or as a market manipulation. On the individual level, scammers trick individual people into revealing their wallet details (phishing scams, customer support impersonation, airdrop scams) or selling their NFTs at very low prices (bidding scams).[90] The bigger problem seems to occur on a market level, though: As the NFT market is relatively small, it is prone to manipulation.

- In **Rug-Pull scams**, fraudsters hype a specific NFT (often through social media) but disappear after receiving funds from NFT buyers - as happened in the 'Frosties' case.[91]
- Similarly, in **NFT investor scams**, developers hype an entire NFT project and disappear after receiving funds from venture capitalists or other investors - as happened in the 'Evil Ape' case.[92]
- In **pump-and-dump schemes**, scammers artificially inflate NFT prices by misrepresenting the asset and spreading misleading information about it - in order to sell it at the inflated price and also vanish right after the sale.
- When **selling plagiarized NFTs**, fraudsters sell fake NFTs as originals and the NFT price plummets after the plagiarism becomes known. The problem is huge: In January 2022, OpenSea tweeted that more than 80 percent of NFTs minted using its minting tool were fake.[93]

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[87] ibidem; "FUD" is an acronym for "fear, uncertainty and doubt"
[88] Geekflare
[89] Forbes, inews, TheVerge, The Guardian
[90] Cloudwards, NFTically
[91] Justice.gov
[92] The Crypto Times
[93] Twitter

- **Wash trades** are a market manipulation, in which an investor sells and buys the same assets in order to create misleading, artificial activity and prices in the marketplace. Wash trading patterns seem to be ubiquitous in the NFT space. Two examples:
  - End of 2021, a Crypto Punk #9998 sold for 532m USD, a mind-boggling number even compared to the already high prices that Crypto Punks typically yield. The person who bought it, bought it from itself - presumably to inflate prices or to gain publicity.[94]
  - In January 2022, the NFT market unexpectedly grew by 129 percent month over month. Much of the increase was due to the newest competitor on the NFT marketplace scene: Looksrare. The marketplace was only launched on January 10 and had already generated a volume of more than two billion dollars in its 19 days of existence.[95] CryptoSlam estimates that more than 8.3 bn USD worth of wash trades have been made on the market place, the vast majority of its sales volume to that date.[96]

To be fair, scams also exist in other asset classes than NFTs. However, other asset classes, such as the markets for stocks, bonds or real estate, are more heavily regulated and have stricter disclosure requirements: They for example require regular financial statements, prospectuses, land registers, notaries, etc. In contrast to that, NFT buyers are not only facing scams. They also struggle to find all the necessary information about an NFT. There are platforms showing details of NFTs and helping evaluate them (e.g. Etherscan, NonFungible, NFTpricefloor, rarity.tools), but these information are very basic and make it hard to identify fraudulent patterns.

Implications for the future of NFTs

In order to become a fully functioning market, the NFT space lacks not only better technology for aspects like improved accessibility, scalability and security. **It requires a corrective to counter deal fever and fraud and replace it by trust and price stability. How can this be achieved? Through the collection, generation, condensation and simple display of data that is reliable and relevant for valuation**.

1. In a world of 'socially assigned value' and a lack of mathematical schemes to check the 'inner value' of an item, social checks and balances might be the only adequate way to prove or disprove the alleged value of NFTs. As opposed to sellers that are very good at creating FOMO, buyers don't seem to have much of a voice in the market. They compete with each other for the best deals rather

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[94] InfluencerMarketingHub
[95] The Block, t3n
[96] Decrypt, Twitter

than collaborating in order to identify FOMO or fraudulent patterns. Hence, they are exposed to the risk of being scammed or ripped off by FOMO-induced overpricing. In the future, they should have joint forums in which they support and inform each other about certain aspects of NFTs.

2. As the NFT space is hard to oversee, NFT buyers need data about the 'socially assigned value' of an NFT. This could be drawn from the currently known sources as well as the forums mentioned above.

3. This data needs to be enhanced by fraud prevention data. Unlike 'socially assigned value' this can probably be inferred from technical data such as the number and frequency of trades, the trustworthiness of the wallets that have been involved, persistence of price levels (lack of outliers), comparing trading volume to social media metrics, fraud detection indicators in social media profiles, transparency on press coverage on fraudulent patterns or scandals, etc.[97]

4. This data needs not only be available. It must also be
   - Condensed (ratings, scores, etc.),
   - at hand at low costs (free of charge, available from a few places), and
   - have a low likelihood of being displayed in a manipulative or hyped way.

What are appropriate means to this end?
- **Decentralization:** The technical tools are already at hand. Blockchain technology is ideal to create the necessary trust – by making the data public and hard to manipulate.
- **Democratization:** The organizational tools are also at hand. In order to avoid the manipulation by a well-informed centralized entity (such as influencers, creators or companies) at the expense of the uninformed crowd, the collection, generation, condensation and display of relevant data can be done by a decentralized autonomous organization ("DAO").[98] In such a DAO, decisions are made publicly and with the participation of all token holders, which effectively prevents manipulation.

To sum it up: It is likely that deal fever and fraud are important drivers of the surge-and-collapse in 2021-22. In order to prevent that from happening again, a social corrective is required. Collecting, generating, condensating and displaying reliable and valuation-relevant data on a decentralized ledger of a democratic entity seems to be the most promising way to do so. The NFT community should work on making this happen.

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[97] See also Coingecko
[98] Coindesk

ACYC is building three products that work closely together to do this and significantly advance the NFT market. Together, they ensure that they provide valuable information about the NFTs (assets) in question (NFTident.io), that they provide indications of the trustworthiness of originators and the valuation of assets (trendhub.one), and that they provide this data where it is needed most - at the point of sale (NFTtrust.it). They are described in more detail later in this paper.

Introducing ACYC

Overview

ACYC aims to revolutionize the NFT market by establishing platforms that provide a transparent metadata structure and democratic assessment of NFTs through trendhub.one. This initiative will be complemented by the ACYC protocol, a centralized data connection node that ensures seamless exchange of standardized NFT metadata among NFT-related entities. These efforts are designed to foster trust, reduce information asymmetry, and stimulate market growth, ultimately creating a more efficient, trustworthy, and accessible NFT ecosystem for creators and buyers alike.

In addition to these capabilities, ACYC specializes in the post-sale phase of assets, offering unparalleled insights into their lifecycle. Unlike primary market solutions that focus on origin and production, ACYC utilizes cutting-edge NFT layer technology to meticulously document and evaluate assets. This technology captures and tracks both digital and analog processes, providing stakeholders with a comprehensive view of asset conditions, usage history, and other critical factors.

By collaborating with a network of partners and leveraging advanced tools, ACYC ensures that stakeholders have access to reliable and comprehensive metadata. The platform not only aggregates vital data but also facilitates trust and confidence in transactions through a community-driven rating system. This innovative approach aims to transform the secondary market, enabling buyers to make well-informed decisions based on detailed asset information, thus promoting a more informed and trustworthy environment in the NFT space.

Background & Details

Focus on Digitization in Supply Chain Services

For some time now, many supply chain services have been focusing heavily on using digitalisation to make product supply chains in the production process transparent, with the aim of providing customers at the point of sale with background information on the origin, materials, working conditions and suppliers in order to promote trust in the product.

Companies Innovating Supply Chain Transparency

We have companies such as retraced.com, prewave.com and IBM that are using software, AI and algorithms to find new ways of achieving transparency in the supply chain. Blockchains such as Aura, Lukso and vechain are starting to create a digital twin for products and make their data available in a decentralised manner in order to give all participants in the supply chain access, to provide their data as suppliers and to react to data.

Ongoing Digitalization in the Primary Market

The digitalisation of the supply chain from product manufacture to the handover of the product to the customer is already in full swing. It will certainly take another 10 years for full digitalisation to permeate the supply chain for all manufacturers and their manufacturing processes, but digitalisation in the primary market with the new Web3 technologies is unstoppable.

ACYC's Focus on Secondary Market Metadata

At ACYC, we focus on the digitisation of metadata, which starts from the moment the customer holds the product or asset in their hands for the first time in the initial sale. We are therefore positioning ourselves primarily on the general secondary market.

Goals and Criteria in the Secondary Market

We have exactly the same goal as the projects in the primary market. We want to give customers at the point of sale more background information about the development process of the asset. Only in the case of the secondary market, we are dealing with other criteria that are important for the customer at the point of sale. These are, for example, the history of use, condition, modification, repair and certain types of repair, repair

history and certain types of valuations in this context or other aspects.

The Future of Assets with NFT Layer Technology

If we are talking about assets here and not just products, then it must be understood from here on that we are thinking about the future of assets with the NFT layer technology. We are talking here about all assets from the areas of Digital (art, games, inventory, music, software, tickets, …), Physical (real estate, jewellery, art, cars, inventory, …), Natural & Built (trees, soils, buildings, roads, infrastructure, …) and Biological animals (livestock, pets, wildlife) plants, crops, …). The NFT layer technology makes it possible to log all digital processes and assets and, for the first time, to record all analogue processes and assets using NFT technology. We can thus store all data digitally with NFT and query it in a decentralised manner without an intermediary with public and private restricted access. IOT drives this process even further by automatically recording external influences using sensor technology. Decades of development are currently bringing together technologies that enable us to deal with our environment in a completely new way. In this context, we see that we can make all our assets, whether digital or analogue, transparent throughout their entire life cycle with their various influences. This enables us to be informed about the condition and inventory of our assets at all times and everywhere. This asset transparency helps us to better understand the value of our assets and to communicate these values to others.

Network of Partners and Tools for Asset Transparency

ACYC provides a network of partners in combination with the appropriate tools so that we can achieve a state in the future where we can easily record all influences on our assets manually and automatically with one tool. This is exactly what will enable us to know the condition and value of our assets and offer confidence in the purchase at the point of sale in the second-hand market.

The ACYC Protocol

ACYC has the task of providing the infrastructure for internal and external tools as well as for the partners. ACYC will develop a protocol that guarantees data transfer independently of the various blockchains and NFT technologies. ACYC also has the task of acting as a service platform that selects, qualifies and provides suitable partnerships for the tools.

A project specific key components

In future, ACYC will be a metadata aggregator for NFTs. Metadata includes, for example, sensor data, certificates, usage history, condition history, repair data and numerous types of ratings. In the future, investors and buyers will have more background data on products and services to make a comprehensive investment or purchase decision.

However, ACYC is based on its own metadata provider trendhub.one. trendhub.one is a decentralized, community-driven rating system that creates ratings and ACYC transmits these ratings to marketplaces, shops and other third parties on request. Because of this crucial step and because it is also part of our origin story, we now see the process of launching ACYC via trendhub.one as a key component in building a solid foundation to develop the ACYC infrastructure.

Our identity - purpose, vision, and mission

Despite the notable amount of greed-driven deal fever and fraud, there is also a considerable amount of NFT idealists who change something for the better. We want to be that. Hence, ACYC is a purpose-driven organization that aims to make a positive and lasting impact for NFT creators and buyers.

We believe that creators and buyers are more likely to invest time and money into NFTs, if they feel well-informed about them and their value. This can be achieved by providing them with valuable information and thus increasing their level of trust. As a consequence, high-quality NFT creators will benefit, which in turn benefits buyers.

Purpose	Nurture trust into NFTs by providing valuable information.
Vision	We empower NFT buyers to make good decisions supported by balanced, reliable and socially controlled data about NFTs by…
Mission	…leveraging the collective knowledge of the NFT community and supplying them with reliable, condensed and easily understandable data for well-informed decisions. Technically and data-wise, all our products are always rock-solid. If products are driven by social interaction, we will make them playful and easy to engage with wherever possible.

Why did we choose this identity? Evidence suggests that in the past, the creation of FOMO has been instrumentalized as a targeted manipulation technique to create deal fever among buyers. On top of that, wash trades and other kinds of fraudulent behavior

were identified to manipulate buyers and prices.[99] These techniques were presumably employed to generate profits from selling NFTs to buyers that are infected with deal fever and not equipped with the right tools to identify fraudulent patterns. As shown above, there is reason to believe that this aspect, among others, led to a collapse of the market in 2022.

ACYC aims at making NFT buyers fit to spot and withstand these techniques. Relevant and reliable information about NFTs, their creators as well as their promoters (influencers) are an effective antidote. However, there is no platform that makes all or most of the valuation-relevant information available. On the contrary, 'shopping clubs' for NFTs are emerging that deliberately withhold information for non-members, such as Premint.xyz. This will further increase the information asymmetry between buyers and sellers.

In contrast, ACYC aims to empower buyers with trustable and relevant data: trendhub and NFTtrust will facilitate the generation of decentralized, democratic, and data-powered ratings for NFTs, where the educated community agrees on the true value of an NFT. On top of that, ACYC aims to simplify the complex process of exchanging NFT data between various market players to make this information widely available.

But who makes sure that ACYC isn't deceiving its users for its own benefit? In order to prevent the management of ACYC from manipulating their products to the detriment of users, ACYC will employ certain aspects of a decentralized autonomous organization ("DAO"). What is a DAO? As opposed to a traditional business organization with shareholders, executives and boards taking decisions about the organization's future direction, DAOs do not concentrate the decision-making power in such a centralized group. Instead, they take decisions through a governance process with community proposals and votes: A DAO is run through the use of smart contracts, which lay out the rules that govern the DAO and are used to execute decisions. For that purpose, a DAO issues governance tokens. Anyone holding governance tokens can make decision proposals that are then voted on by the other token holders. If a proposal achieves a certain number or share of votes, it is accepted and executed according to the rules within the smart contract. This decentral and democratic decision is the main difference from traditional businesses, where decisions are made by a central management body, employed by the shareholders.[100]

However, especially legal, personnel and financial matters are strongly regulated by laws that often hold the management of a legal entity personally liable for the actions of the entity. Hence, these aspects must not be given into the hands of a community of token holders that do not bear this responsibility. Product developments, however, can be democratized to a certain extent. With products like the ones from ACYC, not all

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[99] See Deep Dive: Fraud
[100] NFTnow, Coindesk, 101Blockchains

changes can and should be voted on, as this will slow down or even hinder the product development. But changes of considerable importance should. Hence, developments of high importance will be voted on by the holders of governance tokens. On top of that, product changes can be suggested and voted on by holders of governance tokens. All token holders as well as the users of ACYC products ("community") will be informed about all product changes of medium or high importance. On top of that, the community will be able to make their own product change proposals in order to vote on them on trendhub.

What follows are descriptions of the four products envisioned to fulfill purpose, vision and mission.

Our Strategy

Future Growth of Metadata Providers

We foresee the emergence of many metadata providers in the future, particularly with the advent of NFT technology. These providers will collect metadata on a wide range of products, items, houses, building materials, and all kinds of physical and digital goods. Through NFT technology, we will have a digital ledger for each of these goods that captures various metadata. This digital ledger is the NFT. The manufacturer of the goods can use this ledger to represent the entire supply chain, and all participants in the supply chain can access it to add new metadata and view previously recorded metadata. This allows for tracking the current ownership, sales points, and locations of the goods.

ACYC's Role in NFT Metadata Integration

ACYC aims to identify all points where an NFT is sold, traded, or transferred and provide a window for displaying relevant metadata from providers, filtered by ACYC. With NFT technology and ACYC, it will be possible to filter and present live metadata according to the historical and current requirements at each point, enabling a comprehensive evaluation of goods based on accurate background information. This facilitates informed decisions regarding the purchase or transfer of NFTs.

Focus on Ratings and Metadata Partnerships

trendhub focuses on the most commonly used metadata—ratings. Since ratings are the most frequently used metadata in Web2, right after attributes and descriptions, ACYC will take on the task of building numerous partnerships with marketplaces, shops, and magazines in Web3. The ACYC aggregator network will enable other metadata providers

to utilize ACYC's infrastructure to transmit their metadata to all shops worldwide through a single partner.

Access to Comprehensive Information

End customers or users of these metadata will always have access to all relevant information where it matters, thanks to the comprehensive network provided by ACYC.

Vision of ACYC

ACYC collects and distributes metadata about NFTs so that users can make better decisions about how to interact with and use the right NFTs. So that billions of people can use a secure Web3.

Introducing trendhub

trendhub.one is a new kind of social media platform that doesn't just focus on playing media in a social media post to create a basis for discussion. trendhub instead offers a virtual 3D multimedia space that combines several social media posts on one topic. A hub topic can be created by the creator or any individual community member. This builds a qualitative consensus of content on the topic to create a broader basis for discussion. trendhub offers a new way to consume, explore and discuss topics in a more layered way.

In each virtual space, each like after a community interaction leads to a clear result that is captured in clear indicators from which a trend can be derived. In the future, this trend will be used to gain clearer insights into many areas of daily life and business around the world.

The users who create the trend will participate financially in the value creation of the content. This breaks up the traditional power structure in social networks.

The use cases provided by influencers, companies, organizations and each individual community member in a virtual trend hub space go beyond our previous idea of how we experience content in social media.

Our History

Three Perspectives of trendhub

Basically, trendhub can be viewed from different perspectives in the following 3 ways. On the one hand, trendhub can be a NEXT-GEN survey platform and on the other hand a pure social media platform. Another way is to use trendhub as a decentralized community-driven evaluation platform. All 3 views can be mapped individually with trendhub. These 3 settings NEXT-GEN survey, social media and community-driven evaluation platform can be controlled via the content in the hub, whereby the title and the question about the content in the carousel are specifically re-examined and evaluated by the participants.

Branding and Design Considerations

In the course of preparing for market entry, we asked ourselves how we should brand and design trendhub. Either we align ourselves with one of these 3 use cases or we find a middle ground. In order to make a decision here, trendhub must be viewed from its UX and core functionality. trendhub has 4 main pages on which the user interacts with content, one of which, the hub page itself, is unique in its composition on the Internet and is not presented in the slightest like this on any other platform. But what characterizes the hub page and what added value does it bring? To do this, you first have to understand how all other social media platforms such as Facebook, Instagram, Twitter and Co are structured. Essentially, each of these platforms is in most cases about the presentation of media data such as an image or video in a post format, which also includes a description of the post with hashtags and emojis. In addition, there is always a like button in the lower post area, which also serves as a collection of images (gallery) in these posts, as well as a share button and a comment area.

Unique Features of trendhub

trendhub breaks up this presentation of the post. Like all other social media platforms, trendhub has a personalized interest feed that displays posts based on the user's interest. But instead of opening the media file when the media area in the post is clicked, a media community space for this post opens on trendhub. In contrast to the gallery in conventional social media posts, the media on trendhub are clearly presented in a 3D format in a virtual space and the submission of likes and communication are placed specifically on a medium related to the post topic by the community. This means that the topic achieves a clear result from the discussion through this presentation, tools, resources and distribution of likes and comments from the community.

AI-Assist Function: Making Content Creation Accessible for Everyone

The **AI-Assist Function** revolutionizes the content creation process on trendhub, making it seamless and intuitive for all users, regardless of their expertise. This feature enables anyone to create meaningful hubs by simply describing their current situation, interest, or problem.

Based on this input, the AI generates **three tailored hub ideas**, allowing the user to choose the most relevant one. Once a hub idea is selected, the system automatically prepares the hub with the following elements:

- **Hub Title:** A clear and engaging name for the hub.
- **Hub Rules:** Guidelines to structure interactions within the hub.
- **Instructions:** Step-by-step guidance for hub participants.
- **Hub Items:** Suggestions and placeholders based on the selected topic.

With the hub fully preconfigured, users can jump directly into the creation process and begin collaborating with friends, their community, or customers.

A New Approach to Social Media Engagement

This feature challenges the traditional "99-1 rule" seen on most social media platforms, where only 1% of users actively create content while the remaining 99% are passive consumers. The AI-Assist Function transforms trendhub into an **empowerment platform**, enabling more users to actively contribute and create, rather than just consume.

By eliminating technical and creative barriers, trendhub fosters an environment where users can focus on **sharing ideas and building engaging discussions** without being bogged down by the complexities of execution. This positions trendhub as a platform that not only facilitates content consumption but actively **promotes collaborative content creation**.

Key Benefits of the AI-Assist Function

1. **Speed and Simplicity:**
   Users can create a fully functional hub in seconds, eliminating the typical challenges of brainstorming and setup.
2. **Inclusivity and Empowerment:**
   By automating the technical aspects, trendhub empowers a broader audience to take part in meaningful content creation.
3. **Enhanced Collaboration:**
   Hubs created using the AI-Assist Function serve as the starting point for interactive engagement, encouraging input and participation from communities.

Impact on Community and Business

For individual users, the AI-Assist Function makes it easy to create hubs tailored to personal interests or issues. Businesses, educators, and influencers can also leverage this feature to engage their audience in dynamic and impactful ways, fostering collaboration, interaction, and deeper insights.

The AI-Assist Function underscores trendhub's commitment to making **content creation accessible for everyone**, bridging the gap between ideas and execution, and driving the evolution of social media into a collaborative and engaging platform.

The 3-Hub Phases: Transforming Offline Discussions into an Online Experience

The **3-Hub Phases** on trendhub revolutionize the way discussions and content creation happen online, capturing the essence of collaborative offline discussions and structuring them into a seamless digital process. These phases—Contribution, Discussion, and Evaluation—provide a framework for gathering ideas, refining them through dialogue, and selecting the best contributions to create high-quality content.

In an offline setting, discussions often involve multiple participants contributing ideas, debating their merits, and ultimately reaching a consensus. trendhub replicates this dynamic by introducing a phased approach that guides creators and their communities through the content creation process in a structured yet flexible manner.

Phase 1: Contribution – Collecting Ideas

The Contribution Phase marks the start of a hub's journey. Here, community members are invited to share their ideas and content relevant to the hub's topic. This phase is designed to be inclusive and collaborative, ensuring a diverse range of perspectives.

Community members contribute via the **Contribution Button**, which allows them to upload files, submit ideas, or suggest items for inclusion in the hub. All submissions appear in an **Upcoming Item List**, a transparent and dynamic space where the community can see and engage with the proposed content.

To prioritize the most valuable contributions, trendhub uses an **Up & Down voting system**. Community members vote on the submitted items, determining their ranking within the Upcoming Item List. This participatory approach empowers the community while still allowing the creator to make the final decision on which items are added to the hub.

The Contribution Phase establishes a solid foundation for the hub by collecting a variety of ideas that reflect the interests and insights of the community.

Phase 2: Discussion – Focused Dialogue

Once the Contribution Phase is complete, the hub transitions into the Discussion Phase. This stage emphasizes dialogue and collaboration, giving the community a space to refine and debate the submitted ideas.

Unlike the previous phase, there is no **Contribution Button** or other interface distractions during the Discussion Phase. This design ensures the community's full focus is on the **Comment Section**, which becomes the central element of the hub.

Participants engage in in-depth discussions, sharing feedback, exchanging perspectives, and building on each other's ideas. The absence of additional buttons or tools highlights the importance of the comment section, creating an environment that mirrors the thoughtful and uninterrupted nature of an offline discussion.

The Discussion Phase fosters creativity and collaboration, encouraging the community to explore ideas from multiple angles and reach a deeper understanding of the topic.

Phase 3: Evaluation – Reaching Consensus

The final phase, Evaluation, is where the ideas and discussions culminate in a decision-making process. This phase focuses on selecting the best contributions to finalize the hub's content.

The community's votes from the Contribution Phase remain visible, providing a clear ranking of the submitted items. The creator reviews these rankings and uses them as a guide to decide which contributions are included in the hub. While the community's input is a significant factor, the creator retains ultimate control to ensure the hub aligns with their vision and objectives.

The Evaluation Phase brings clarity and resolution to the discussion, transforming the collective input into a polished and well-curated hub.

Redefining Online Collaboration

The 3-Hub Phases enable communities to collaborate in a structured yet natural way, replicating the flow of offline discussions while leveraging the advantages of a digital platform.

Each phase builds on the previous one, fostering engagement, creativity, and consensus. By focusing on distinct stages of contribution, dialogue, and evaluation, trendhub ensures that every idea is given the attention it deserves, and every community member has the opportunity to actively participate.

This approach not only enhances the quality of the content created but also strengthens the bond between creators and their communities. With the 3-Hub Phases, trendhub transforms the process of content creation and decision-making into a collaborative, engaging, and impactful experience.

Why the 3-Hub Phases Matter

The 3-Hub Phases bring the full lifecycle of a discussion into an online environment, offering unique advantages:

- **Collaboration:** Encourages community involvement in every step of the content creation process.
- **Transparency:** Provides a clear overview of contributions, rankings, and decisions.
- **Efficiency:** Simplifies the process of turning ideas into actionable outcomes.

Unlocking New Possibilities for Engagement

Whether for personal projects, business strategies, or educational initiatives, the 3-Hub Phases provide a structured framework to transform collective input into meaningful results. By replicating offline discussions in a digital space, trendhub creates a unique opportunity for collaborative content creation and decision-making, redefining how communities engage online.

The Curate Function: Streamlining Content Creation Through Curation

The **Curate Function** is one of trendhub's most innovative tools, designed to simplify and accelerate the process of content creation. It transforms the act of assembling items into a dynamic and engaging experience, empowering users to create fully realized hubs from curated content with minimal effort. By leveraging tags, metadata, and AI, the Curate Function enables users to focus on the creative process while the system handles much of the heavy lifting.

At the heart of this functionality lies the **Curate Page**, a workspace where users can explore and select items relevant to their interests or goals. On the left side of the Curate Page, users are presented with a personalized list of items, dynamically generated based on their preferences and previous interactions. These items, tagged and categorized for clarity, represent a curated pool of content from which users can build their hub.

The process is both intuitive and interactive. By simply clicking on items, users add them to the **Hub Creation Window** on the right side of the page, which serves as a live preview of the hub. This preview allows users to visualize how their chosen items will fit together in the final hub, with the ability to select up to nine items to form the foundation of their content.

Once the user has finalized their selection, the system's **AI-driven automation** comes into play. Based on the curated items, the AI generates a hub title, rules, and instructions, ensuring that the final product is cohesive and tailored to the chosen content. The AI utilizes the tags and metadata associated with the selected items to craft a hub that aligns with the user's goals, whether they are aiming to spark a discussion, showcase a collection, or collaborate with their community.

This functionality is not only powerful but also transformative. It removes the traditional barriers to content creation, such as time constraints or a lack of technical expertise, allowing users to focus on the ideas and topics they care about most. The entire process, from item selection to hub finalization, is designed to be seamless, empowering users to launch their hubs with just a few clicks.

The Curate Function has broad applications across various use cases. For individual users, it provides an effortless way to create hubs around personal interests or challenges, enabling deeper engagement with family, friends, or niche communities. Businesses can utilize the function to craft targeted hubs for product feedback, marketing campaigns, or customer engagement, while educators and influencers can design interactive spaces for learning, collaboration, or content promotion.

What makes the Curate Function truly groundbreaking is how it blends personalization and automation. By combining user-driven curation with AI-generated structure, trendhub delivers a solution that is as efficient as it is creative. It empowers users to take ownership of the content creation process while benefiting from tools that ensure their hubs are visually and contextually aligned with their intentions.

In essence, the Curate Function represents a shift in how we think about content creation. It transforms what was once a complex and time-intensive task into an accessible, enjoyable, and highly personalized experience. By providing users with the tools to curate and create with confidence, trendhub continues to redefine the possibilities of social media and community engagement.

trendhub as a New Kind of Social Media Platform

trendhub is, at its core, a social media platform, but one with a revolutionary focus: simplifying decision-making. For thousands of years, humanity has grappled with the

complexity of choices, from personal dilemmas to collective decisions. trendhub redefines how decisions are approached by leveraging **collaborative intelligence**, **swarm intelligence**, and **community exchange** in a structured, transparent, and interactive environment.

What sets trendhub apart is its ability to harness the collective experience and insight of its community. Traditional social media platforms prioritize passive consumption and individual content sharing. In contrast, trendhub provides tools and structures that enable communities to actively participate in discussions, contribute ideas, and collaboratively reach conclusions. This transforms the platform into a decision-making powerhouse, where users can tap into the wisdom of the crowd to gain clarity and direction.

Through clearly structured discussions, supported by features such as **3-Hub Phases**, trendhub ensures that each topic is explored thoroughly yet efficiently. This process allows users to:

- **Understand Topics Better:** The tools provided by trendhub facilitate deep exploration, ensuring that users and communities can break down complex issues into manageable parts.
- **Enhance Transparency:** By structuring discussions and visualizing contributions, trendhub makes it easier to identify key points, arguments, and insights.
- **Leverage Community Experience:** Swarm intelligence ensures that the collective knowledge and expertise of the community come together to form a clearer picture.
- **Identify Trends:** Through discussions and evaluations, trendhub highlights emerging trends that reflect community consensus, making it easier for users to align with shared perspectives.

This shift in focus—from individual posts and passive interactions to collaborative decision-making—positions trendhub as a **next-generation social media platform**. It doesn't just create content for entertainment or engagement; it creates actionable insights and builds consensus.

By fostering meaningful discussions and providing tools that guide users through contribution, discussion, and evaluation, trendhub transforms the social media experience into one that actively improves the way decisions are made. It is a platform designed not only to share but to solve, empowering users to make informed decisions with the confidence that comes from community-driven clarity.

In essence, trendhub is not just a place for sharing content but a platform that uses the power of collaboration to address one of humanity's most enduring challenges: making better decisions, faster and smarter.

Challenges of Survey and Evaluation Focus

We have found that the negative side of focusing on a survey platform is that surveys are generally boring, take up time and participants have to be paid for taking part. The situation is similar with focusing on a decentralized community-controlled evaluation platform. As with the survey platform model, this approach is based on the user's view that the evaluation action is the most important thing and that work must be done, even if it is paid for. As we have worked out, we can promote trendhub as a new type of social media platform. In this image, people associate trendhub with the ease of dealing with content and topics, as they are used to from conventional social media platforms. The only difference is that we also communicate that the discussion through the trendhub media community system can serve as a survey tool and help the community and the creator with a clear result.

Opportunities for Companies and Influencers

For companies, this can result in a new way of working with their customers in product management or marketing in order to improve their products on the one hand and to offer their customers additional added value through new content. Influencers can get various evaluations from community interaction, either for themselves or in cooperation with a company.

Launch into the NFT Market

In 2021, we entered the NFT market and achieved considerable success with NFTaggregator.io, a preliminary version of trendhub, as a social media platform specialized in the NFT market. In 9 months, we attracted 4,000 NFT art creators to our platform, who published around 150 stories daily about their NFTs. As the NFT market gradually declined, we assessed the long-term potential of our then-developed platform and investigated the current problems in the NFT market, specifically why it was declining and unlikely to recover soon. Our investigation revealed that, much like the crypto market between 2017-2019, the NFT market provided insufficient background information for inexperienced traders and prospective buyers, despite the sustained interest in investing in this market. This gap led inexperienced and willing buyers to be misled and financially exploited by elitist groups. This motivated us to counteract by beginning to digitally capture, analyze, and display social media reputations alongside NFTs, distinguishing fake accounts from genuinely established ones. Thus, since the end of 2021, our project's core mission has been to view NFTs and ratings as our driving force, fulfilling our duty in the NFT market.

Evolution to a Community-Driven Platform

By mid-2023, we had evolved NFTaggregator.io from an NFT social media platform into a decentralized, community-driven evaluation platform specializing in the assessment of digital art linked as NFTs. Upon launching this model into the then-existing NFT market, we experienced firsthand how inactive the NFT market had become compared to mid-2021. However, we realized that the community-driven evaluation platform had more potential than just being applied to NFT art. We expanded the platform, allowing creators on our platform to create various types of evaluations for their content. As previously explained, we also restructured the platform to emphasize its characteristics as a social media platform, primarily for specific use cases.

A New Social Media Platform Concept

By mid-2024, we had developed a highly advanced form of a completely new type of social media platform. This platform focuses on guiding discussions and surveys to a very precise result through the community, all while maintaining the appeal of a social media platform. However, the technology's potential can be realized initially without the NFT technology, making us independent of the volatility of the crypto and NFT markets. This flexibility is crucial for us as a startup to remain liquid and competitive. From this perspective, we decided to launch without NFT technology initially, to avoid overwhelming our target audience while still providing them with trendhub's benefits. We plan to guide our users to the NFT technology on trendhub at the right time.

What makes trendhub a NEXT-GEN evaluation tool

Regular surveys have 4 big problems:

1. the data they receive is not good, not valid, not objective enough to be of any serious value.
2. the rewards do not offer enough incentive and are distributed across the board to all participants, which means that the participant does not have to be interested in providing good answers.
3. participants often cannot be properly selected due to lack of time, wrong incentives, or lack of background information on the person.
4. Surveys are boring, time-consuming and often don't offer the right financial incentives.

Surveys should have the major goal of delivering results in which participants have given their answers to the best of their knowledge and belief.

- But how can this be if the participant's interest is to receive many rewards in a short time and there is no incentive to answer the question to the best of their knowledge and belief?
- But how can this be if the content on the topic hardly exists or does not exist and therefore does not provide sufficient insight into the topic?
- But how can this be if the participants themselves qualify for the survey, not because they have an interest in the topic, but because they are receiving the next reward?
- So how can it be that valid results are obtained using these techniques when the majority of online and offline surveys have these shortcomings?

What does trendhub do differently to produce valid results?

Visual & Informative

Basically, trendhub is completely redesigning the survey. First and foremost, the survey does not take place in the guise of a survey tool, but in the form of a discussion as we know it in social media posts, but the division of the content in the trendhub content community space makes it possible for likes or votes to be distributed to the individual topics by the participants. The question in the content community space is always a component. Another essential component in the Content Community Room is the 3D Carousel, in which the media or topic components are displayed in a three-dimensional rotating manner. Below this are the 3 dynamic data areas in which the properties, description and user comments on the individual media are displayed. The presentation of the media in the 3D carousel and the respective dynamic display of their data in the data areas below serve to provide the user with a constant overview of all participants in the survey and to make all basic data immediately available. This interplay between the presentation of the media and the provision of information at a glance on desktop and mobile means that the user who is to cast their vote has the best prerequisite for being able to visually and mentally grasp all the participants in the survey as a whole in order to take all the data into account as much as possible for their decision and also to cast their vote quickly.

In this way, trendhub provides the best visual and informative basis for gaining an in-depth understanding of the topic.

Selection & Community

Due to the fact that trendhub is a social media platform with a focus on in-depth and results-driven topics, trendhub will invite and retain target groups of all kinds with interactive topics and gamification. As a result, trendhub will gain an extensive community over time. We are already working on our algorithm learning the interests and preferences of user profiles. This enables us to invite the right target group to the

relevant surveys. Because the most important thing for the survey is to select the right group of respondents. This means that the community in the survey consists of the creator's community and the selected test group from trendhub. In addition, the community has the opportunity to exchange information directly about the topics in the comments section of the survey and to respond specifically to the content with tags and markers, which promotes a deeper and more varied discussion and can enrich the understanding of the topic in a multidimensional way. However, it must be mentioned here that the combination of community interaction and the two-liked system - consisting of subjective and objective voices - creates an even more differentiated and richer data basis.

This two-liked system allows participants to give both their personal opinions (subjective vote) and their well-founded, rational considerations (objective vote). This differentiation leads to a clearer analysis of the survey results, as emotional and rational aspects are recorded separately. It also encourages deeper discussions, as participants can share and defend their different perspectives and assessments. This prevents groupthink and contributes to a more diverse and balanced data collection. The combination of community exchange and two-liked system makes trendhub a unique platform that integrates qualitative and quantitative data in an innovative way, leading to more accurate and valuable results.

The survey automatically receives the right participants and connects them in order to obtain a diverse vote for the result.

Gamification & Behavior

trendhub offers four earning models that incentivize participants to cast their votes. The participant-based cash distribution, the participant-based points distribution, the creator-based cash distribution and the creator bonus distribution.

With participant-based point distribution, the trendhub distribution system automatically deposits a point in the hub's wallet for each participant by casting their vote for a topic component. All participants vote according to this principle. After the poll is finished, all votes are distributed to the topic components. The trendhub distribution system is similar to a betting system in that the points are distributed back to the users who have shifted the most votes to a topic component or who have agreed in the poll which topic component is in first place, second place and so on.

The participant-based money distribution is based on exactly the same principle of voting and distribution of points, except that it is not points that are distributed, but money in the form of coins.

By depositing a small amount of money, where the loss can represent a risk, something fundamental happens in the user's voting behavior. The user is now driven by the possible loss of the money to think urgently about what not only he thinks can become place 1, but what everyone thinks will become place 1. This is because the risk changes the perspective in voting behavior.

With the participant-based distribution of points, the user takes action with the PERSONAL like button, thereby making a subjective, largely low-risk decision, and with the participant-based distribution of money, the user takes action with the EXPERT like button, thereby making a risky but objective decision.

The result, which is determined at the end of the survey, is the average of subjective and objective views on the topic. In this way, trendhub achieves a new quality standard for surveys.

In conclusion, we note that

The 6 aspects of a new approach to surveys make trendhub a NEXT-GEN survey tool, because we solve all 4 problems that previous survey tools do not solve.

What makes trendhub a decentralized community-driven rating system?

First, we need to understand what a centralized rating system is.

With a centralized system, this very often means that an intermediary at headquarters stores, administers and manages the data. If we look at the central rating system, we see vergleich.org, stern.de, expertentesten.de, trustedshops.de, trustedpilot.com and numerous offshoots of these online comparison sites in Germany.

There is a fundamental risk with a centralized system that the middleman can be manipulated. In the examples of centralized rating platforms listed above, it has also been proven that the middleman is also manipulated here. In most cases, the manipulation is financially driven.

There is an urge from the Web3 community to drive and support the Web3 Internet Layer, particularly because the middleman in the central system can be manipulated.

This is because the projects for the Web3 Internet Layer have at least the idea of providing a decentralized system for their use case.

This is exactly what we aspire to, which is why we have developed trendhub as a decentralized community-driven rating platform in which the party that rates is financially independent of the manufacturers of the goods, although the manufacturers of the goods on trendhub pay for the community to participate in their product tests. This can work because, on the one hand, the trendhub financial and distribution system is fully automated and acts on its own, with no middleman needing to or being able to intervene. The system distributes the money to those who agree on which goods have the most value.

This means that the party on trendhub, which is valued, is value-driven and not financially influenced.

We have two different starting points for the interest from which ratings are determined. On the one hand, we have the independent platform-driven interest in determining ratings and, on the other hand, that the users themselves have an interest in having the community determine ratings for their own compilation of participating competitors.

In the independent platform-driven interest to elicit reviews, the trendhub platform itself aggregates products, services, etc. that have already been created digitally on marketplaces and stores and imports them with their complete categorization, tags and metadata. The trendhub algorithm for creating competitions in the interest of the platform selects the participants for the competition in such a way that the competition is independent and fair. Users are then invited to the competitions based on their experience and interest, which our AI learns and our algorithm processes. In this way, we bring the right group of prospects to the right competition. We then transfer the evaluation back to the marketplaces and stores using an API. This gives buyers and investors a second opinion, a second indicator to correctly assess the product or investment and reach their decision more quickly.

The system continues in a similar way with the user-driven interest in having ratings determined, except that the ratings do not have the same weighting as the ratings from the independent platform-driven interest. Otherwise, the platform makes it possible to automatically select the right group of test subjects for the creators in order to achieve the fairest possible ratings.

trendhubs financial decentralization

We would like to show how the financial system is decentralized in trendhub with the following appendix. In general, there is no web3 crypto token in trendhub. trendhub has

integrated a centralized coin distribution system to create an ecosystem so that users can see how the financial economy works through virtual numbers. When our crypto token is purchasable on the crypto exchange, we will connect our trendhub coin distribution system to Fireblocks via an API. From this point on, trendhub will serve as a messenger to give the wallets the signals via Fireblocks on how the CRED tokens are transferred. This means that there is no possibility to deposit or withdraw tokens on trendhub. This happens completely separately from trendhub.
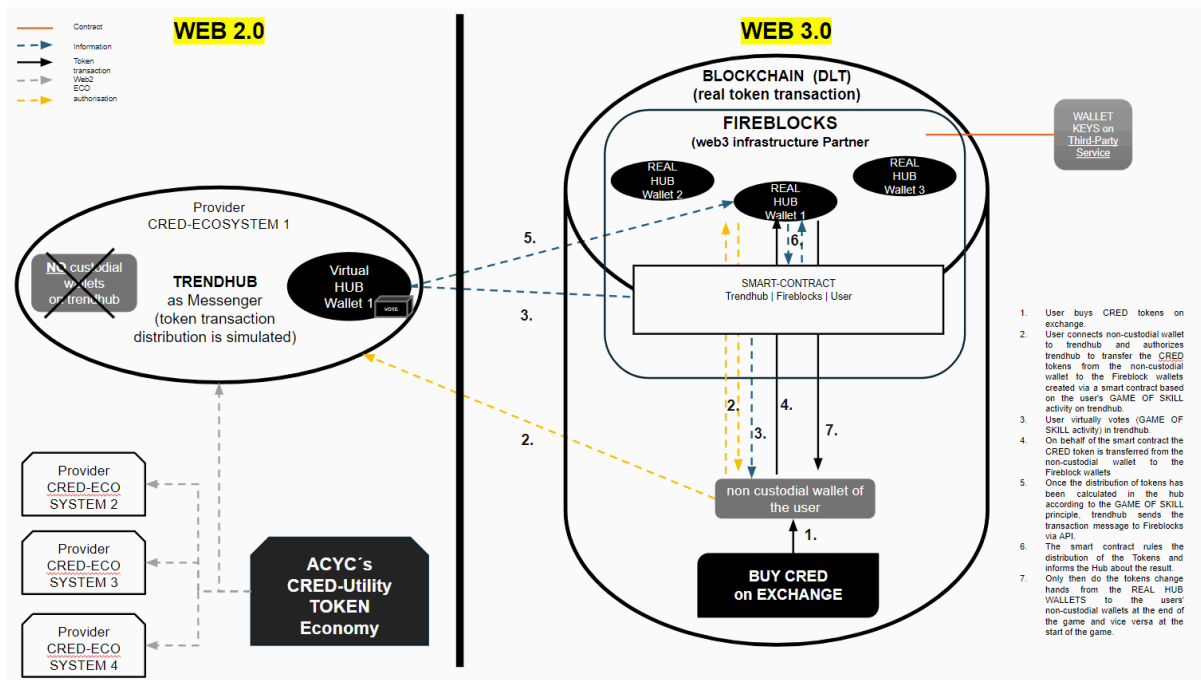
1. User buys CRED tokens on exchange.
2. User connects non-custodial wallet to trendhub and authorizes trendhub to transfer the CRED tokens from the non-custodial wallet to the Fireblock wallets created via a smart contract based on the user's GAME OF SKILL activity on trendhub.
3. Once the distribution of tokens has been calculated in the hub according to the GAME OF SKILL principle, trendhub sends the transaction message to Fireblocks via API.
4. Fireblocks then sends the transaction message to the smart contract from trendhub to Fireblocks.
5. Only then do the tokens change hands from the REAL HUB WALLETS to the users' non-custodial wallets at the end of the game and vice versa at the start of the game.

Vision trendhub

trendhub will significantly improve the ability of billions of people to make decisions about personal interests and problems in their private and business lives based on real user experiences.

Problem-Solution fit

Overview

trendhub is a gamified token-based NFT rating method that aims at collecting, generating, condensating and displaying reliable and valuation-relevant data on NFTs. On top of that, it allows for social checks and balances. It works as follows.

Hub Creation

A hub creator has the ability to define the title, description, and a specific question for the hub, which relates to the individual elements within the hub. During the online creation process, the hub creator sets up the items or elements of the hub. Each of these elements has a comprehensive description, a title, various attributes, and a type of "gift container," where the creator can insert different items such as images, audio files, code, etc. The elements in the hub can be created in various ways, including images, videos, video URLs, HTML codes, iFrames, PDFs, Google Maps, or audio files, which open in a lightbox within the hub when clicked. The descriptions of these elements are detailed, providing a clear understanding of their purpose, relevance to the hub's theme, and potential appeal to participants. A checkbox allows the creator to decide whether the hub remains private (visible only to users with an invitation code) or is publicly accessible. The start and end times of the hub are then set. In the final step, the creator can top up the hub's balance with CRED tokens. Once CRED is added to the hub's balance, it is used for distribution along with the CRED deposited by users. Another option is the "HUB balance to all" checkbox. If activated, the hub will only feature the "PERSONAL like" button, and users who vote will receive the deposited CRED in addition to distributed points. This is particularly interesting for company surveys where participants are to be rewarded. Additionally, the creation form can switch to Multihub, allowing virtual rooms or hubs to be placed side by side. Users can then navigate between the hubs in the Multihub using the "Back" and "Next" buttons. Thus, the hub can be designed for various applications and target groups.

The platform also allows the hub creator to be supported by the AI from the beginning of the creation process. By simply describing their current situation, interests or problems, the hub creator receives three suggestions for potential hub ideas. They can select one of these ideas and then receive content and instructions from the system that are tailored to their interest or problem. This allows the hub creator to create a hub within a few seconds without having to have a concrete idea of the content or its staging. The AI takes over the definition of the hub title, the hub rules, the hub instructions and the topics for the individual elements.

As soon as the hub is created, content creation begins automatically. The hub creator can either continue this independently or invite their community directly. Alternatively,

they can also involve the community once the content has been completed. Using the "Contribution" function, members of the community can develop and collect content together until all important topics have been covered. Discussions and finally the evaluation can then begin in order to achieve a clear result.

Community Engagement and Rewards

The hub creator can distribute gifts and money to the community through the hub, depending on which item a user liked. Each item can contain a gift that is automatically transferred to the user's account at the end of the hub. Each item offers the opportunity to receive two types of likes: the "PERSONAL like" button, where the user uses a point for their vote, and the "EXPERT like" button, where a CRED token is used for the vote. The "PERSONAL like" button is used for subjective votes, while the "EXPERT like" button provides an objective voting perspective to determine which item is likely trend-relevant to all participants. This voting method is based on scientific principles to achieve more meaningful results. When voting with the "EXPERT like," a CRED token is transferred from the user's account to the hub's account. At the end of the hub, the total deposited tokens are distributed according to a fair distribution key to the winners, similar to horse betting. The winners are those who voted for items that received more than 50% of the total votes. Users using the "PERSONAL like" button gain or lose points, climbing or descending in a leaderboard, with the highest rank being "Trendsetter." Previously, it was only possible for the content creator to fill the hub with their content, allowing the community to react to it, discuss it, and then vote at the end. The new functionality within the hub allows the community to add more items to the carousel using a contribute button under the carousel, adding them to the topic, so to speak. And the community has the opportunity to participate financially in the CRED TOKEN use if the item they added receives a sufficient number of votes. Of course, the content creator always has the final say on which items are included in the hub on the topic.

Data Insight and Usage

The system enables the hub creator to collect precise data on what trends among users. A hub can be created by individuals, businesses, organizations, or educators. Individuals can use hubs for surveys with friends or family on everyday topics, while businesses can use them for product management or marketing surveys. Influencers can use the hub to engage their community and earn money based on participation. The community also has the chance to win gifts hidden behind the items, which can also include a link to the next exclusive hub. Educators, such as lecturers, teachers, or students, can use the hub to present topics in an engaging format or discuss them directly in the hub. Possible applications for trendhub hubs include presentations, shows, challenges, games, stories, discussions, events, ratings, competitions, puzzles, sweepstakes, reviews, education, and more.

Displaying Multiple Contents and Swiping on trendhub

In the center of the page is a 3D carousel that displays the items. Users can rotate the carousel with the mouse or swipe on a mobile device. The carousel's content is displayed similarly on both desktop and mobile devices. The carousel dynamically displays the contents, ensuring all elements are visible. When the carousel stops, the selected item is displayed in the center above the two like buttons, "PERSONAL" and "EXPERT." Above the carousel is the hub title, with a hub info button below it that displays the hub description. To the left is a link to the hub creator's profile, and to the right is a timer showing the hub's start and end times. Below the hub info is the hub question. The title and the two like buttons are displayed below the carousel. Additional information about the items, such as properties and descriptions, is displayed in two differently sized fields below the carousel. The left field dynamically shows the properties of the foremost item in the carousel, the middle field shows its description, and the right field displays comments on specific content or general comments on the topic. Users can select the content they want to comment on via a dropdown field in the comment section. Below these fields is a share button that allows users to share hub content on other social media platforms. Below the share function, the total points and CRED tokens used in the survey are displayed. At the end of the survey, the points or tokens are distributed according to a fair distribution key, starting with the users who voted for the least popular content and ending with those who voted for the most popular content. At the end of the hub, the hub balance lists who voted for which content and how the prizes were distributed.

Monetization

Hub creators can monetize their communities through various methods, including a subscription model and a gamification model. The subscription model allows creators to offer multiple subscription tiers, each catering to different segments of their audience, thereby creating distinct communities. When setting up a hub, the creator can select the appropriate subscription tier, and subscribers will receive notifications whenever new content is added to their subscription. Creators have the flexibility to set individual prices for each subscription, which are billed regularly. trendhub takes a 15% commission from each subscription fee as part of the platform's revenue model. Additionally, hub creators earn a percentage of the total CRED tokens used within their hubs, incentivizing engagement and content creation.

Data collection	trendhub collects and aggregates relevant data for all digital assets, including NFTs. This data encompasses both publicly available information and user-generated content. For each asset, the platform collects and displays data such as:
	• NFT: Creator details, creation date, description, key attributes, price history, sales history, standing offers, and indicators of suspicious activity (e.g., wash trades).

	● Creator: Social media engagement metrics (e.g., number of followers, posts, likes, and comments), fraud indicators, press coverage, and other relevant data points.
Data generation	trendhub also generates its own data by enabling users to interact with digital assets through polls and discussions. Owners or creators can claim their assets through wallet verification and have the option to add stories or additional context to their assets. Digital assets can compete in polls, where users vote on various attributes such as value or desirability. The results from these polls, along with user comments, are mined for additional insights and data generation. In addition, own data is generated as follows: ● NFTs can be claimed by owners (creators or buyers) through their wallets. They can also add a story to the NFT. ● NFTs can run against other NFTs in polls, in which users vote for the most valuable NFT. The NFT with the most votes wins the poll. Users can comment on each of the NFTs in a poll. Votes and comments of the polls are data-mined.
Data conden-sation	Given the large volume of data collected and generated, trendhub condenses this information into accessible and comprehensible formats. Key data points include: ● A percentage score ranging from 0% to 100% that reflects the asset's sales potential based on various factors. ● A score without an upper limit, representing the overall perceived value of the asset.
Data display	All relevant data is displayed in a clear and organized manner on the asset's overview page. This page provides users with a comprehensive view of all critical information related to the asset, making it easier to assess and make informed decisions.

Polls as the core of the rating system

In trendhub, polls take place in the hubs. This is why we are now and often talking here about polls to make it easier to understand. Next to the import and display of existing data, new valuation-relevant data is generated through polls, in which the NFTs compete for the win: Nine curated NFTs get picked for a time-limited poll in which they compete for votes. They are presented to the poll participants alongside structured data about the NFT and its creator. The NFT with the most votes wins the poll ("winning NFT"). Hence, the voters are crucial members of the community. There will be two kinds of votes:

Personal votes
- Personal votes don't cost anything and cannot win anything.
- Voters only need to be registered and verified.
- Voters pick the NFT they think has the highest value and should therefore win the poll, simply by hitting a button.
- The NFT with the most personal votes wins nothing though.

Expert votes
- Expert votes determine the winner of the poll.
- Expert votes are pay-to-play, i.e. voters deposit a predetermined amount of ACYC tokens into the token pool of the poll and vote for the NFT that they think has the highest value and therefore will win the poll.
- When the poll ends, the highest-ranking NFTs, which together account for at least 50% of the votes, are the winners.
- Expert voters that voted for NFTs that are not among the winners will not receive tokens from the token pool. Their token deposits are used to fill the profit pool for the winning voters.
- Winning voters are those who voted for the winning NFTs. They will receive a share of tokens from the poll's token pool that exceeds their deposits.
- All expert voters receive badges for participating in polls, regardless of whether they won or lost with their vote. Depending on the amount of poll participations, they will receive different kinds of badges (e.g., bronze, silver, gold and platinum badges) that show in their profile.

Voters can use any resource to determine the value of NFTs in the poll. trendhub supports voters to do so by providing an NFT overview page and the creator''s profile page on trendhub, both of which are linked under the respective NFT in the poll. Owners and creators have a high incentive to provide valuable and reliable information on those pages in order to help their NFT win the poll and thus increase the value of the NFT.

On top of that, every poll will have a comment section in order to allow all voters to exchange their views on the NFTs in the poll. Expert voters have a strong incentive to provide reliable information about participating NFTs in order to win the poll - positive information about the NFT they voted for and detrimental information for all others. Comments can be up- or downvoted by other members of the community. The net of upvotes (+) and downvotes (-) gets displayed underneath each comment.

Poll incentives
People participating in the personal vote have less of an incentive to provide valuable and reliable information, but might be intrinsically motivated to do so. On top of that, the personal vote makes sure that every user feels part of the community right from the start and can get acquainted with the system in a playful way. The more people join the

community, the more data is generated. On top of that, more traffic on the website means more revenues, which will be used to finance the service.

It is important that money is involved in the polls. In order to avoid losses or make wins, voters will refrain from making courtesy votes, but rather vote for the NFT they expect to be the winner. It is, however, important to not make the poll participation too expensive, because this would limit the number of participants. Low participation in turn reduces the amount of data that voters supply and makes the polls prone to manipulation and their results unreliable. Manipulation could lead to inexperienced community members losing money and leaving the platform as they (rightfully) perceive the poll as being rigged. Hence, it is important to hit a sweet spot between too cheap and too expensive. This sweet spot needs to be determined in user tests.

For all NFTs that participated in the poll, the votes received will be recorded on the NFT overview page and the NFT with the most votes will receive a badge for being the winner of a poll. The owner of the winning NFT will also receive a share of tokens from the poll's token pool. trendhub receives a number of tokens from the pool of each feedback round as a fee, which is also used to incentivize the losers of the poll to participate in further polls.

The pay-to-play principle also discourages bot votes, because a mere user account will not be enough to participate in a poll. Nevertheless, bot detection remains an important topic. As only registered users can participate in polls, it is important to authenticate users and avoid accounts created by bot farms. Security barriers that can be turned on at will are cookies, IP, and e-mail.

Security concerns
It is very important for expert voters to trust the system, especially that their tokens are safe. Therefore, expert voters connect directly to the poll with their wallets. The wins and losses are distributed based on a smart contract, in a completely decentral way without middlemen. Even trendhub merely participates in the smart contract and does not act as an intermediary, which makes Rug-Pull scams impossible.

NFT ratings as a strong condensed valuation indicator

The collected and generated data is condensed into a Sales Potential Rating and a value score. Both will constantly be further developed over time, based on the learnings made and data gathered. Depicted below are the initial ratings that will be employed.[101]

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[101] The detailed indicators manifesting the value drivers (poll performance, platform trust, etc.) are blackened in order to avoid users from over-optimizing for the Sales Potential Rating or NFT Value Score.

Sales Potential Rating

The Sales Potential Rating indicates the development of the potential sales value of the respective NFT. It incorporates the factors depicted below, ranges between 0 and 100% and constantly increases or decreases depending on the value of the input factors. Poll performance refers to the NFT's merit on trendhub. Platform and market specific data is also taken into account, in order to ensure that the value is validated by the market. Lastly, the creator's reputation is considered a value driver.

Graph 12: Factors determining Sales Potential Rating
Source: Team
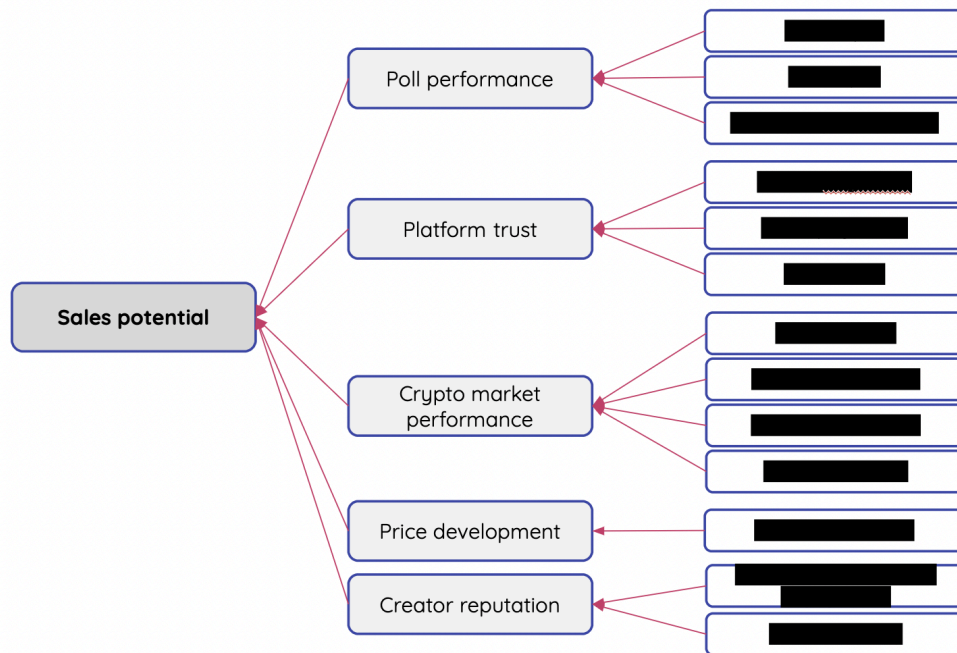
NFT Value Score

This score expresses the historical value of an NFT. The longer the NFT has been on the market and has gained recognition through visibility, the higher the NFT Value Score. It has no upper limits and monotonously increases over time. It incorporates the factors depicted below.

Graph 13: Factors determining NFT Value Score
Source: Team
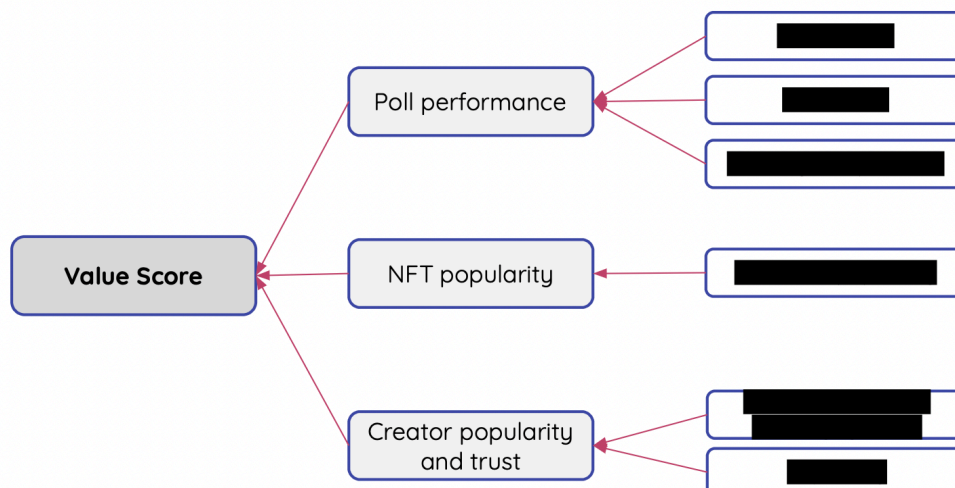
Both scores are displayed on the overview page of the respective NFT, together with the name of the NFT, the collected external information and the most influential comments. Together, they serve as indicators for NFT buyers when making their investment decision.

Additionally, all of the above is also saved as a dynamic NFT ("dNFT")[102] that is constantly being updated. They are stored on a smart contract on the blockchain. When the NFT rating changes, the smart contract updates the rating score and the date of the rating. The dNFT will change in appearance based on the rating score: the color of the NFT could change from green to yellow to red as the rating score decreases. This visual representation makes it easier for users to quickly understand the overall rating of a product. The dNFT can be used to track the rating of an NFT over time, making it possible to see how the rating has changed over a certain period without running the risk of manipulation.[103]

NFT search and comparison as a powerful research tool for buyers

In order to allow people to use the generated information, it needs to be displayed properly and made searchable and comparable. This is an important prerequisite to establish a functioning affiliate marketing business as described below in the business model chapter. The following graph and paragraphs describe the basic conception of the NFT search and comparison.

Graph 14: Schematic display of data collection and tagging process
Source: Team

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[102] Chainlink
[103] For further details on dNFTs, please see the chapter on the ACYC protocol.
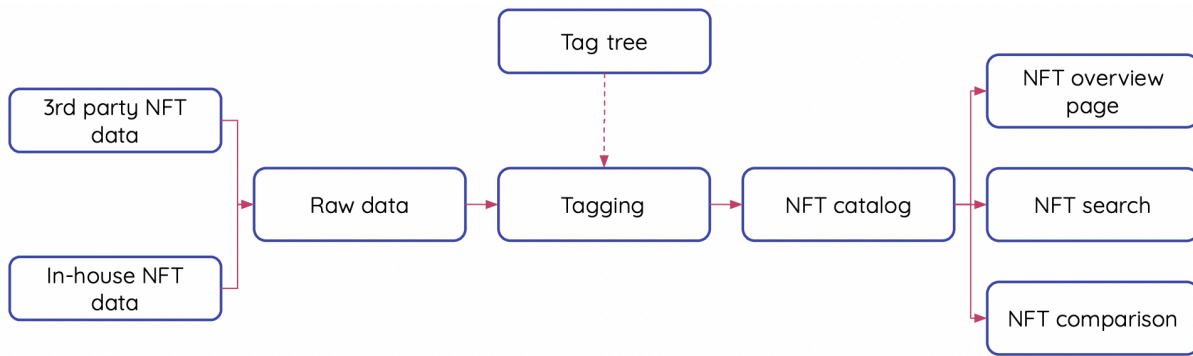
Data collection and tagging

NFTs can be characterized by the information that is available about them, be it from third parties or generated in-house, for example:

- **NFT description:** Title, creator, creation date, image, description, attributes, the story behind it, press coverage, etc.
- **Creator data:**
  - Third-party: Name, image, engagement on social media (followers, no. of posts, no. of likes, no. of comments), fraud indicators, press coverage, etc.
  - In-house data: Data from NFTtrust (see below)
- **Owner data:** name, bio, trading history, social media accounts, press coverage, etc.
- **Valuation data:**
  - Third-party: price (current and history), minting data, trading history, standing offers, wash trade indicators
  - In-house data: votes, polls won, ratings, most influential comments, etc.
- **Affiliate links:** Links to the marketplaces where the NFT can be purchased.

This data is being collected and consolidated in one raw database.

However, one prerequisite for effective search and comparison of NFTs is the assignment of standardized attributes ("tags"). Tags are metadata, i.e., data that describes other data and can be used to provide additional information about an NFT, such as its title, artist, description, and other relevant attributes. The assignable tags are organized in a standardized taxonomy ("tag tree"), which is then used to assign the attributes from the taxonomy to each NFT, often by using artificial intelligence. The result is an NFT catalog that can be navigated by standardized, thus comparable, tags.

NFT overview page

The NFT overview page displays all this tagged information (NFT description, creator data, owner data, valuation data, affiliate links, etc.) and is optimized for the following five aspects:

User friendliness	Find and understand information easily
User engagement	Offer ways to engage, such as content (text, video, images), forums, etc.
Search engine visibility	Indexation, uniqueness of content, user engagement KPIs, core web vitals
Buyer conversion	Clicks on links to the marketplaces where the NFT can be purchased
Voter conversion	Invite visitors to also participate in polls

API as a way to make ratings available on 3rd party websites

The NFT value rating generated by the polls on trendhub is made available to external applications and services via an API and the ACYC-Protocol. Thus, the rating is also used where the NFT is sold.

NFT marketplaces, stores, blogs, etc. get the added value of increasing trust with their customers through the rating. In addition, every user validates the relevance of the data on the market by using the rating.[104]

trendhub benefits all stakeholders

NFT owners: By having NFTs participate in polls, the NFT owner obtains data on his NFT through real user engagement. This likely increases the awareness, the liquidity or the price of the NFT. In addition, NFT owners receive a share of tokens from the token pool, if their NFT wins the poll.

NFT buyers: Buyers benefit on various levels: First, by being able to easily find and compare NFTs that are relevant to them. Second, by obtaining balanced, reliable and socially controlled data about NFTs in one place. This is due particularly due to the fact that

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[104] Add a later point in time, this API might be replaced by the dNFT-technology described for the ACYC protocol: Instead of sharing the data through the API, and trendhub could mint dNFTs that can be purchased by NFT market places and shops.

- anyone can comment on NFTs, not just creators, owners or influencers;
- expert voters have a strong incentive to provide reliable information about participating NFTs in order to win the poll - positive information about the NFT they voted for and detrimental information for all others;
- by design, not all NFTs can win a poll, which will make it possible to tell apart the valuable ones from the less valuable ones.

Voters: Users have the opportunity to increase their number of ACYC Tokens by voting for the NFT that won the poll.

Community members: Even if users do not buy, sell or promote NFTs, they can enjoy themselves by spending time on the platform to exchange views on NFTs.

NFTs: The NFT increases in awareness and value the more polls it wins. By means of the collected votes, participation in polls, won polls and favorites of the users, the value increases in a way that is transparent for every user.

NFT creators: Creators whose NFTs are participating or winning polls gain in awareness and visibility. New creators get a platform to present their artwork.

NFT marketplaces and stores: trendhub contributes to a functioning market by reducing the likelihood of deal fever and fraud - both important drivers of the surge-and-collapse in 2021-22. Hence, trendhub contributes to increased trust and transparency in the NFT space, which is likely to facilitate the mass adoption of NFTs. On top of that, trendhub can be used as a valuable traffic source.

trendhub: The token-based NFT polling system receives a fee in the form of tokens from the pool of each feedback round. On top of that, platform users and the data generated on the platform can be monetized.

Product-Market fit

The business model builds on a diverse set of revenue sources

As with comparable platforms such as Facebook, Instagram or TikTok, registration and use of trendhub is free of charge. This allows us to address a very high number of active users. Nevertheless, trendhub offers various options for generating revenue. Essentially, these are the following three main sources of income, which we have also taken into account in our business case:

Subscription model	trendhub's subscription model is comparable to that of OnlyFans. Content creators create hubs that are only accessible to certain subscribers.
	The model works on a subscription basis. Content users pay a monthly fee to gain access to the exclusive content of a specific creator. These contributions can be photos, videos, texts or other types of content. The monthly subscription fees can be set by the creators themselves.
	trendhub keeps a share of the revenue from the creators - currently 10% - and the rest goes to the content creators. This means creators can communicate directly with their audience via the platform and pursue a monetization strategy based on continuous revenue rather than one-off sales.
Token fee	To participate in surveys, voters must submit tokens to a survey's token pool. trendhub participates in each poll by currently paying a 5% fee to trendhub.
Advertising	Advertising will also be a fixed source of income in the future. We enable companies to strengthen their markets, promote their products and services and increase their sales. There will be various formats (such as paid advertising) through which companies can get in touch with their target group.

In addition, we see further revenue potential, which we have not quantified further for the moment and have therefore not included in the business plan. However, the following should be mentioned here for the sake of completeness:

Affiliate revenues from NFT shops/ marketplaces	By referring those to partnering NFT shops and marketplaces, affiliate revenues can be generated.
Data	trendhub will create a wealth of data on NFTs that can be analyzed and sold to interested market participants.

A prerequisite for monetization is a large number of users on the platform. For that, three things need to be achieved at once:

Customer acquisition	Customer retention on trendhub	Customer retention away from trendhub
Search engine optimization (technical and content), paid search engine marketing, AI chat assistant optimization, social media presence and PR activities	The key driver is content, i.e. valuable information and features to appraise NFT creators and influencers. This should lead to the creation of user accounts and installation of the app - which in turn allows for an effective Customer relationship management ("CRM").	Keeping in touch with users by serving them outside the platform, e.g. by displaying the trust rating on third party websites or by keeping them informed about recent developments, special deals and new information/features through newsletters, social media, push notifications, etc.

Token value and influence on the ecosystem

The token ecosystem in trendhub is based on an ecosystem that we know from the non-digital world. It is a financial ecosystem that we are familiar with from horse betting or other sports betting, for example. However, it must be noted from the outset that the trendhub token ecosystem has nothing to do with the gambling factor as with conventional betting. We would like to note in advance that the focus of our token ecosystem is based on a scientific factor and exists to give results in an objective direction.

The token that is paid into the ecosystem by the user is tied to one dollar and relates to the guarantee of the user's vote. Furthermore, in the trendhub token ecosystem there are no individual odds for the competing participants in the poll, as is known from sports betting, for example. As a result, the user cannot achieve an extraordinarily high profit in one day, but neither can he suffer an extraordinarily rapid loss as a result. Furthermore, the user can see from the content of the participating competitor in the survey, the characteristics in the left box, the description in the middle box and the community comments below the carousel in which direction the rankings or the trend is developing. These three factors, the standardized stake, the eliminated odds and the trend indicators eliminate the gambling factor.

trendhub has thus abstracted a financial ecosystem that has existed for centuries and transformed its negative characteristics into positive ones.

The professional user and the calculation of market capitalization

For users who want to professionalize their participation in token votes on hubs on trendhub, there are two main goals: to promote the learning effect and to monetize their participation. To achieve this, they need to train regularly and continuously hold CRED tokens in their wallet.

In the trendhub token ecosystem, this means that users should have a certain amount of CRED tokens in their wallet every day in order to be able to participate in the daily voting intervals. The user aims to achieve a continuous increase in their CRED holdings through permanent and high-quality valuation. They will then exchange the surplus that they do not need for daily participation into USD. We assume a daily token stake of 60 $ CRED and an average vesting time of a poll is three days. So the user will permanently have 180 $ CRED in his wallet. This means that every user who wants to participate in the system in the long term will maintain this stake.

In our assumptions, we assume that at the beginning 20% of total users participate regularly, i.e. daily, in the voting intervals. To do this, these users should permanently hold 180 $ CRED in their wallet. Assuming 250,000 total users, this corresponds to a market capitalization of approx. 9 MUSD. We assume an exponential increase in users within the first three years, in which we inspire 2,000,000 users a day with the platform from year four onwards. This would then correspond to a market capitalization of around USD 61 million

Assumption Ø number of users year 1 after foundation:
1. number of active users: 250,000
2. Percentage of users who permanently hold $180 CRED: 20%
3. number of users holding $180 CRED: 250,000 × 0.20=50,000
4. total quantity of permanently held CRED tokens: 50,000×180 = 9,000,000

Assumption Ø number of users from year 4 after foundation:
1. number of active users: 10,000,000
2. Percentage of users who permanently hold $180 CRED: 7%
3. number of users holding $180 CRED: 10,000,000×0.07=700,000
4. total quantity of permanently held CRED tokens: 700,000×180 = 126,000,000

Conclusion

The users who continuously have CRED tokens in their accounts for voting will steadily increase the market capitalization of the token. This not only stabilizes the value of the token, but also encourages user engagement and long-term participation in the trendhub ecosystem

Tokenomics

Two kinds of tokens will be issued: Utility tokens and governance tokens.

Utility tokens

Generally speaking, utility tokens offer access to products or services. For trendhub, they will be called CRED and grant the rights to holders to participate in polls and to buy advertisements and NFT value ratings from trendhub. CRED tokens do not bear any power in decision-making. In more detail:

1. **Token Name:** CRED
2. **Blockchain:** Solana
3. **Total Supply:** 777.777.777 million CRED will be created. There will be a finite supply of tokens to maintain scarcity and value.
4. **Token Distribution:**

Private Sale (10.00%):

- No vesting; remaining tokens go into the ecosystem.
- **Tokens:** 77,777,778 CRED

IDO (Initial Dex Offering) (7.50%):

- No vesting; remaining tokens go into the ecosystem.
- **Tokens:** 58,333,333 CRED

IEO/Public Sale (7.50%):

- No vesting; remaining tokens go into the ecosystem.
- **Tokens:** 58,333,333 CRED

Airdrop Phase (9.00%):

- 50% at TGE (Token Generation Event), 50% linear vesting over 6 months.
- **Tokens:** 70,000,000 CRED

Growth (8.50%):

- Linear vesting over 12 months.
- **Tokens:** 66,111,111 CRED

Team (15.00%):

- Linear vesting over 10 months.
- **Tokens:** 116,666,667 CRED

Advisors (5.00%):

- Cliff of 6 months, then linear vesting over 10 months.
- **Tokens:** 38,888,889 CRED

Ecosystem (32.50%):

- Linear vesting until 60 months.
- **Tokens:** 252,777,778 CRED

Security Buffer (5.00%):

- Linear vesting until 60 months.
- **Tokens:** 38,888,889 CRED

5. Token Utility:

Voting:

- CRED tokens will be used for voting on various content, polls, and trend evaluations within the trendhub platform. This includes a broad range of digital assets, media, and topics, reflecting the platform's focus on community-driven evaluations.

Rewards:

- CRED tokens will be rewarded to participants for accurate and insightful contributions across polls, trend evaluations, and discussions. This incentivizes active participation and ensures that high-quality contributions are recognized, increasing the token's utility and demand.

Access:

- Holders of specific amounts of CRED tokens will gain access to premium features such as early access to polls, exclusive content, private polls, and custom poll creation. This enhances engagement and provides value to long-term token holders.

Staking:

- Users can stake CRED tokens to earn rewards and access exclusive features on the platform. Staking also contributes to the liquidity pool, enhancing the overall stability of the token within the trendhub ecosystem.

6. **Monetization:**

Transaction Fees:

- A small fee will be applied to various platform interactions, such as voting, participating in polls, and creating new content spaces (hubs). This ensures continuous revenue generation to support platform operations.

API Access:

- API access fees will be extended to cover not only NFT ratings but also other valuable data and analytics provided by trendhub. This creates multiple revenue streams and further monetizes the platform's data-driven services.

Premium Features:

- Users will be charged in CRED tokens for access to premium features, including advanced analytics, priority voting, and enhanced community engagement tools. These features drive additional demand for the token within the platform.

Affiliate Fees:

- Affiliate fees from various digital marketplaces, media partnerships, and advertising will be payable in CRED. This ensures that CRED is central to all financial transactions within the ecosystem, enhancing its utility and demand.

7. **Security:** CRED tokens will be secured using enhanced security measures, including smart contract audits, bug bounty programs, multi-signature wallets, and decentralized identity verification processes. This ensures the highest level of security for all users and token holders.
8. **Transparency:** All transactions, voting outcomes, and content evaluations will be recorded on the blockchain, ensuring transparency and verifiability across the platform. This transparency fosters trust and accountability in the trendhub community.
9. **Partnership and Collaboration:** CRED will be integrated into broader trendhub initiatives, including partnerships with digital marketplaces, media platforms, and decentralized applications (dApps). These partnerships will extend CRED's utility beyond the trendhub ecosystem, enhancing its value and use cases.

This model incentivizes active participation within the trendhub platform, fostering a vibrant and engaged community. It helps maintain the value of the CRED token, making it attractive not only to users but also to partners and investors. By aligning the interests

of users, creators, and stakeholders, trendhub has the potential to usher in a new era of transparency, trust, and growth across the broader digital content and trend evaluation market. Through its innovative approach, trendhub is positioned to redefine how value is assessed and shared in the digital economy.

Market entry with the USPs

How trendhub can change the social media landscape

Financial participation in the value creation of content

In the dynamic landscape of social media, user engagement and sustained interaction are of paramount importance. trendhub harnesses the power of gamification to significantly improve user experiences and make interactions not only exciting but also rewarding. The key elements of gamification on trendhub and its revolutionary impact on the social media landscape are explained below.

Understanding gamification

Gamification integrates game elements such as points, leaderboards and challenges into non-game environments to increase user engagement and satisfaction. It uses intrinsic motivations to make activities more engaging and interactive and to get users to be more active and thoughtful.

The advantages of gamification

Increased user engagement: Gamification elements such as points and leaderboards motivate users to engage more deeply with content, leading to more meaningful interactions and a richer user experience. Rewards for contributions encourage users to invest time and effort, providing a sense of accomplishment and recognition.

Improved content quality: Incentivizing thoughtful contributions encourages the creation and sharing of high-quality content. Users are incentivized to provide valuable insights and engage in in-depth discussions, enriching the platform with substantive contributions.

Stronger community bonds: Gamification promotes a sense of community and collaboration. The more engaged users are, the stronger connections they build, which strengthens the overall sense of belonging on the platform. Both collaborative and competitive features contribute to a more cohesive user community.

Increased user motivation: The competitive aspects of gamification drive users to participate more actively. Sustained activity helps to maintain high user participation rates over longer periods of time and ensures a lively and dynamic community.

Gamification elements on trendhub

Reward mechanism: trendhub's unique reward mechanism differs from traditional platforms that simply count likes or shares. It evaluates the quality of interactions and rewards users for in-depth engagement with content. Users earn tokens based on the likes they receive, which encourages them to engage deeply with posts. This approach not only rewards high quality interactions, but also encourages a more thoughtful social media experience.

Points system: Users earn points by receiving likes on their posts, which contributes to their overall score on trendhub. This serves as recognition and motivation to make consistent and thoughtful contributions.

Leaderboards and challenges: trendhub offers leaderboards that display the top users based on their engagement and points. This competitive feature motivates users to participate more intensively in order to rise in the ranks. Periodic challenges encourage participation in specific activities and create a sense of accomplishment.

Interactive polls and quizzes: trendhub integrates polls and quizzes to engage users. While participation in these activities is encouraged, only likes contribute towards earning points, ensuring that the focus is on high quality interactions.

Community feedback: trendhub allows users to provide feedback on posts through likes, maintaining high standards of engagement. This fosters a collaborative environment where valuable insights are recognized and rewarded.

The impact of gamification on trendhub

The token system is a fundamental part of trendhub and acts as a currency for voting and engagement. Tokens are used to vote on items within hubs, with each vote representing a user's support and commitment to the outcome of the hub. This system promotes fairness and community-driven success by ensuring equitable distribution of rewards based on user engagement.

By integrating these gamification elements, trendhub creates a sophisticated and interactive social media environment. These features encourage user engagement, improve content quality, strengthen community bonds and maintain user motivation. While trendhub continues to innovate, these elements will play a critical role in shaping

the future of social media interaction and ensuring a confident and engaging user experience.

If we now consider how important financial participation is for the community and the promotion of content with the fact that no social media platform currently involves the end users in this sense, it looks like the power structure is unevenly distributed on the platform and creator side, which is not unusual in Web2. However, we do not currently see any improvement, as an ecosystem like trendhub is needed in which the money can circulate in such a balanced way. It requires a kind of distribution of votes among several components that are in competition with each other, and algorithms that control that the money is distributed fairly and equitably among the participants. trendhub has fundamentally geared its system towards involving the community financially and thus making the community responsible for determining the trend of the content and ensuring the corresponding financial reward.

trendhub is fundamentally changing the way in which financial participation in the success of content is distributed among all participants in the social media landscape. This way of thinking about technology is firmly rooted in the entire DNA of ACYC. We didn't set out to break the power structure in the social media landscape with trendhub's financial ecosystem, nor was it our primary goal; it's an important part of something even bigger. It is a component that people in collaboration with the future AI abstraction have a platform like trendhub, where they have a new place for their experience and humanity, with which they can make a living in the long term.

Slow consumption of social media content

In a world where speed and efficiency are often prioritized above all else, consuming social media quickly has become the norm. Users scroll through feeds at lightning speed, like with a double tap and move on in a matter of seconds. This fast-paced interaction can lead to superficial engagement, information overload and digital burnout. But a new movement is challenging this status quo: the slow social media movement. This approach advocates a more conscious, mindful and meaningful way of engaging with digital content. In this article, we look at the slow social media movement and how trendhub is promoting this mindful approach to social media content consumption.

Traditional social media platforms are designed to keep users engaged for as long as possible, often with the help of algorithms that prioritize content designed to attract attention quickly.

Right up to content where negative sensationalism is rewarded, fake news is irrelevant and true objective reporting is undermined.

Although this model may seem enticing, it also has significant drawbacks. Fast scrolling and the emphasis on likes and shares encourage users to engage with content superficially, often without fully understanding or appreciating it. The constant influx of new content can overwhelm users and make it difficult for them to recognize valuable and important information. The incessant pace of social media can lead to stress and anxiety, contributing to digital burnout and a decline in wellbeing. Constantly switching between posts and platforms can undermine users' ability to focus and engage deeply with a single piece of content.

The slow social media movement offers a refreshing alternative. It encourages users to engage with content in a more conscious and meaningful way, prioritizing quality over quantity. This approach is in line with the principles of mindfulness and promotes a healthier and more enriching digital experience. Applying the principles of slow social media offers numerous benefits. Spending more time with content allows for deeper understanding and more meaningful discussions. Slowing down content consumption can reduce stress and anxiety, leading to better mental health. Meaningful interactions foster stronger, more supportive relationships within the digital community. Deep engagement with content and conversations can lead to a more fulfilling and satisfying social media experience. Especially in today's fast-paced world, we need an increasingly sensitive approach to content.

trendhub stands out in this movement with unique features that support and encourage the slow consumption of social media. In this way, trendhub is transforming the way we interact online. On trendhub, trends are determined by the community and not by algorithms. This ensures that the content that gains prominence is actually valued by users and fosters a sense of belonging and deeper engagement. trendhub encourages users to spend more time with each piece of content, engaging in discussions, polls and meaningful comments. This fosters richer understanding and substantive interactions. To make the process of slow consumption engaging, trendhub integrates gamification elements. Users can participate in contests that reward thoughtful interactions and content ratings, making the platform both entertaining and intellectually stimulating. trendhub allows users to participate financially in the value creation of content. This not only incentivizes high-quality contributions, but also allows users to share in the success of the content they support.

The slow social media movement marks a significant shift in the way we interact with digital content. By prioritizing quality over quantity and encouraging meaningful interactions, it offers a healthier and more enriching alternative to the fast-paced digital world. trendhub is at the forefront of this change, providing a platform that embodies the principles of slow social media. As more users and platforms adopt this approach, we can look forward to a digital age where less is more and our interactions are more meaningful and fulfilling.

This realignment of the social media landscape by trendhub encourages a conscious and deeper connection between users and the content they consume, ultimately leading to an improved digital experience for all.

Tamper-free distribution system for digital goods

Sweepstakes have a long history and often serve as an effective marketing tool to drive engagement and interest. Historically, these games have often been based on the principle of chance, making them more susceptible to manipulation. In the past, accusations were often made that the results of prize draws were not always fair, whether by influencing the draw or giving preferential treatment to certain participants. This problem has become even more acute on social media, as companies and influencers are often suspected of manipulating competitions in their favor or in favor of those around them. This practice has severely affected user trust and often leaves the impression that the winners are not the actual participants, but friends or acquaintances of the organizers.

trendhub's approach: A game of skill (Game of Skill)

trendhub addresses this critical point and offers a tamper-proof distribution system for digital goods that is based on the skills and active participation of users. This approach transforms sweepstakes from a pure game of chance to a competitive, skill-based system (Game of Skill) that emphasizes transparency and fairness.

1. transparent mechanisms: trendhub uses advanced technologies such as blockchain to document every transaction and vote in a traceable and secure manner. This prevents results from being changed retrospectively and ensures that all participants have equal opportunities.
2. skill-based competitions: Instead of random selection mechanisms, trendhub relies on competitions in which users have to demonstrate their knowledge, creativity or analytical skills. This creates a platform where performance, not chance, counts.
3. no room for favoritism: By automating the awarding of prizes and eliminating human decision-makers, the potential influence of bias or favoritism is eliminated. This ensures that it is not the organizer's "friend or colleague" who wins, but the participants who actually deserve it.
4. strengthening user trust: The clear structure and traceability of the competitions on trendhub strengthen users' trust in the integrity of the platform. Users know that their skills and commitment are the true criteria for success.
5. new opportunities for companies and influencers: With trendhub, companies and influencers can not only run transparent and fair competitions, but also offer innovative access to new content and digital goods. These can be awarded as rewards in a clearly defined and fair competitive environment, increasing the

value of the content on offer while encouraging engagement on a deeper, more meaningful level.

trendhub's further development: A manipulation-free puzzle system

Building on its robust system for skill-based competitions, trendhub is adding an exciting, interactive component to its offering - the tamper-free puzzle system. Here, the creator creates specific puzzles within a hub that allow users to discover the item with the hidden gift through analysis and deduction.

Effective implementation through innovation and fairness:
1. clearly defined puzzles and objectives: Each puzzle is presented with clear instructions and objectives, giving all participants an equal chance.
2. Gamification elements: A motivating and transparent competition is created through points systems, progress indicators and ranking lists.
3. educational component: The puzzles are designed to be informative and offer learning experiences that go beyond simply winning.
4. reward system: In addition to main prizes, there are also smaller rewards for achieving intermediate goals, which ensures ongoing motivation.
5. Security and fairness: Advanced technologies such as blockchain guarantee the security and fairness of the competition by ruling out manipulation.

Conclusion:

By integrating a skill-based puzzle system, trendhub not only provides a fair and transparent platform, but also encourages active learning and creative engagement. This strengthens user trust and revolutionizes the way sweepstakes are perceived and conducted on social media. trendhub thus makes a significant contribution to the development of a responsible and interactive social media landscape.

trendhub is revolutionizing the concept of sweepstakes on social media by creating a system based on skill, fairness and transparent rules. This reorientation shifts the focus from random selection processes to a merit-based system that motivates all participants to get actively and creatively involved. This will not only increase trust in the platform itself, but also create a more sustainable, engaged and responsible ecosystem that will change the social media landscape in the long term.

Trend determination by the Community for the assessment of market values

In a world where traditional media and central platforms often dominate opinion-forming and trend-setting, trendhub offers a revolutionary alternative that puts the power to evaluate and set trends directly in the hands of the community. According

to the trendhub motto "CREATING TRENDS TOGETHER". This decentralized approach makes it possible for products, services and places to be evaluated not by purchased opinions or the influence of well-known personalities, but by the authentic interactions and evaluations of the users themselves.

Creation of trends by the community

On trendhub, trends emerge organically through the active participation and engagement of users. Each participant can rate, discuss and recommend content, providing an authentic picture of its popularity and quality. This way of determining trends is deeply rooted in trendhub's platform structure and enables users to directly influence the visibility and rating of content through votes and comments.

1. interactive features: By using interactive surveys, discussions and rating systems, every user becomes a potential trendsetter. This encourages active and conscious engagement with the content and leads to more well-founded, representative ratings.
2. Transparency and authenticity: Since the ratings and trends come directly from the community, they reflect a genuine and unadulterated opinion, free from commercial pressure or editorial intervention.

Validation of market values by the community

trendhub not only enables the creation of trends, but also their validation in real time. By directly connecting community-based reviews with marketplaces, stores and magazines, a dynamic feedback loop is created that enables companies to receive direct and immediate feedback on their products or services.

1. influence on marketplaces: By integrating community feedback into online stores and e-commerce platforms, products that receive high ratings on trendhub can be displayed and promoted preferentially. This leads to a direct influence on sales figures based on popularity and acceptance within the trendhub community.
2. feedback loops: Feedback and ratings on trendhub flow back to the providers, who gain valuable insights into customer perception and satisfaction. This enables agile adaptation of products and marketing strategies that are closely aligned with the needs and wishes of consumers.

Creating a value-driven community

The way in which trendhub involves the community in the evaluation and trend-setting process promotes the creation of a financially independent and value-driven community. The platform not only supports the creation of market value through transparent valuations, but also enables users to benefit from their activity and influence.

1. financial participation: Users can benefit financially from their contributions and ratings on trendhub, which creates an incentive to produce high-quality content and actively participate in the community.
2. Independence and autonomy: The community itself determines and validates the trends, reducing dependence on external influences. This strengthens the autonomy of the users and promotes a critical examination of the content.

Through these mechanisms, trendhub is revolutionizing the way reviews are created and made available to the market, representing a new type of review system that is not only more democratic and transparent, but also creates a closer and more trusting relationship between consumers and consumers.

The Automatic Created Polls

Poll algorithm

For the poll algorithm, the selection of NFTs is of the essence as they need to be somewhat similar in their characteristics. If they are too different, the polls might become meaningless. If, for example, a Bored Ape (that often sells for tens or even hundreds of thousands of US-Dollars), runs only against new NFTs from unknown creators, the winner is easy to predict. Hence, the poll algorithm needs to account for that in order to ensure fair competition.

In addition to algorithmically created polls, many more types of polls are thinkable, such as
- self-created polls (created by users in a separate area, using their own curation);
- private polls (created in a separate where participation is invitation-only).

Especially the former would lead to a further democratization of polls: As users can create their own polls, there is no room for a distortion of results through trendhub's algorithm. However, the results of all polls should always be made public in order to allow others to criticize them.

Tagging

This, in turn, has ramifications for tagging and NFT ratings. Tagging heavily relies on the quality of the assigned tags. While some tags like name, creator or price are easy to obtain, others are more difficult to assign, e.g. the art style the NFT is created in. At the same time, the sheer number of existing NFTs forbids doing this manually. It will likely require image recognition technology and artificial intelligence to tag NFTs reliably with high precision and recall.

NFT ratings

The rating, on the other hand, also needs to account for this fairness aspect. Assuming that a new NFT from an unknown creator wins a poll against well-known valuable NFTs, this poll win is worth more than winning against other new NFTs from unknown creators. The NFT rating will need to account for this in the future. This can, for example, be achieved by introducing 'leagues' through which the NFTs have to go.

Additional growth levers

On top of an improved feature set, user satisfaction and platform growth could be boosted by applying the following growth levers.

Prediction of ratings to NFTs that have not been polled:
By using the attributes of NFTs and their poll performance, it is possible to predict the poll performance of NFTs that haven't participated in a poll yet. The poll performance in the community and the underlying attributes of polled NFTs can be used to train an artificial neural network to predict their poll performance (within a certain margin of error). As a result, trendhub would be able to provide NFT ratings immediately, which would make the service even more useful and open new revenue streams.

Voting bots
In order to give expert voters the opportunity to keep voting while being away from the platform, AI-powered voting bots can be employed. These bots learn from the respective voter's behavior and success in finished polls and extrapolate that into running polls by voting on the voter's behalf. Only expert votes should be semi-automated like that. Comments or popular votes should not be AI-generated.
Tbd

White labels and use cases outside of NFTs
NFTs are only one use case, and the product idea can be extended to other areas such as evaluations of products (music, movies, games, services, events, physical products, etc.), celebrities, political parties, etc. There are countless other markets to which the product can be extended. This can be done by ACYC, but also by others, in which case ACYC could license white label solutions.

Introducing NFTident

NFTident is an app that can create NFTs and subsequently capture metadata for them. The core focus of the NFTident app, however, lies in the accurate capture of data related to the NFT. The creation of NFTs is handled by existing blockchains, which are automatically selected by the NFTident app for the respective NFT. The user must link their wallet with the app for both the creation of the NFT and the data capture process. The custody of NFTs is managed by the user themselves.

To ensure accurate data capture for the legally compliant creation of NFTs and for subsequent data access, NFTident provides a feature that uses AI and algorithms to offer the appropriate input fields for selection. This ensures that the user is always guided to the correct input for creating the NFT and building the correct asset data. Using Lidar technology, the physical asset is geometrically captured and secured as an original with a copy protection integrated into the asset. For example, it is important for companies to create legally compliant NFTs that adhere to the established norms and standards of their industry, ensuring their NFTs remain tradable in the future. It should also be possible to add assets that are already in the lifecycle to a digital twin as an NFT through the correct pre-selection of input fields in the NFTident app. This allows users of all kinds to comprehensively capture their assets digitally.

Metadata Registration

To add metadata such as sensor data, certificates, usage history, condition history, repair data, and various types of ratings to an asset in its lifecycle, there are two methods. The NFT is registered as a dNFT in the NFTident app via the ACYC Protocol. This allows metadata to be directly added to the existing protocol of the dNFT and accessed later. If this option is not available, the NFTident app will add a metadata dNFT to the existing NFT and always associate it with the ACYC Protocol. This way, metadata can be continuously recorded in the metadata dNFT.

Metadata Provider

For metadata to be added legally to a dNFT or NFT post-creation, the metadata provider must be qualified by the manufacturer and registered through ACYC. If both conditions are met, the metadata provider can be selected for the appropriate asset in the NFTident app. The asset owner can authorize the metadata provider via the app to enter metadata into their dNFT. ACYC, in coordination with asset manufacturers, provides a wide network of metadata providers for each industry.

NFT Ownership Transfer

If the user wishes to sell their asset or transfer ownership rights to another person, the ownership of digital assets can be transferred by the current owner either by manually entering the new owner's details in the NFTident app's settings or by initiating the transfer with a click, allowing the new owner to receive the NFT via the NFTident app (NFC). For physical NFTs, a local transfer is possible through the authorized NFT based on the recorded copy protection by the current owner. If the two factors, the physical original and the NFT, match, the NFT can be transferred to the new owner. The new owner captures the NFT using NFC through the NFTident app from the current owner and the physical asset using Lidar technology and the copy protection enabled by the collaboration between ACYC and NFTident.

Introducing NFTtrust.it - Import & display metadata on the point of sale

In order for the lifecycle asset metadata to be available for the asset at the point of sale, dNFTs are primarily required that have additional fields available in their protocol and enable the lifecycle metadata to be displayed by qualified metadata providers. Even if no additional service is required to display the dNFT metadata, ACYC, the ACYC protocol and the NFTident app are still required to qualify and authorize the metadata providers and to enter the lifecycle metadata for the dNFT. For NFTs that also want to display their lifecycle metadata at the point of sale, however, an interface is required at the point of sale. This is where NFTtrust comes into play. NFTtrust consists of two functions, importing dNFTs or NFTs and displaying the lifecycle metadata in a separate field on the sales page.

NFTimporter

The NFTimporter in NFTtrust provides all blockchains with which NFTs can be imported. The corresponding NFTs can be imported and categorized using various search settings. When importing, a central asset twin is created on the corresponding ecommerce page.

Metadata Live Streamer

If metadata changes after the NFT has been imported, such as the price at the authorized point of sale or if additional metadata has been added, the NFTtrust API records the change and updates the data on the NFT on the ecommerce sales page.

Lifecycle Data Viewer

In order to display the metadata in a clear form at the point of sale, NFTtrust provides an area on the shop's sales page in which the metadata is filtered by the ACYC protocol and displayed according to the shop's settings and requirements.

ACYC Protocol - ensuring seamless data flow

Problem-Solution fit

ACYC's purpose is to nurture trust in NFTs. trendhub and NFTtrust.it make valuable contributions to reach this. But they are not the only ones and, hopefully, more organizations will join the effort with their own solutions.

All of these players will have one thing in common: They need data in order to provide meaningful information on NFTs. There are already numerous suppliers of data that are relevant to assess the value of NFTs[105] and some of these suppliers make their data available on other platforms. Given that the market is expected to grow considerably and that more and more players will enter the market, it will become increasingly complex to provide and gather the available NFT data:

Let n be the number of market participants that provide or receive data from others. As n increases, the number of possible n-to-n connections increases exponentially, more precisely as follows:

$$\sum_{k=1}^{n-1} k = \frac{n(n-1)}{2}$$

Instead of building and maintaining n-to-n connections, it is more efficient to install a central data connection node. In this case, the number of connections equals n, the

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[105] For example: icy.tools, CryptoSlam!, rarity.tools

number of participants that join the data exchange, as can be seen in the following graph.

Graph 15: Schematic display of simplification potential by ACYC Protocol
Source: Team
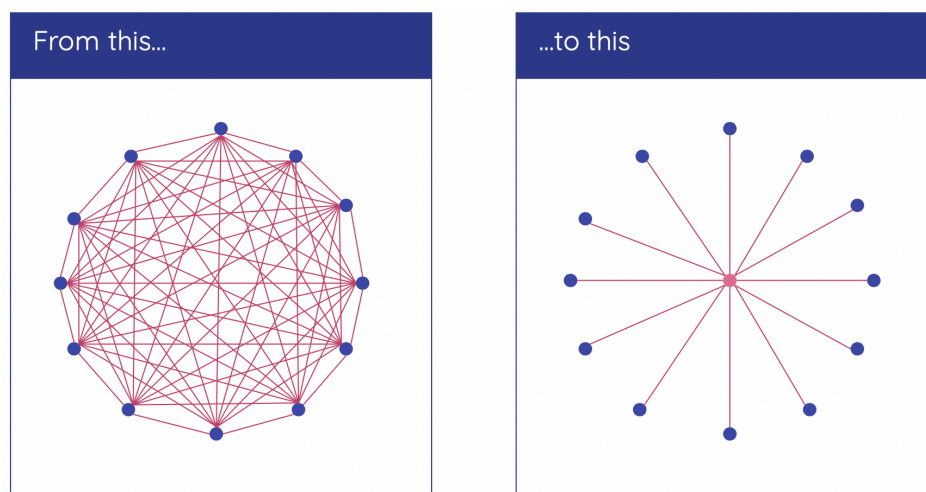
On top of that, the compatibility of the data is of concern. Standardized data is of higher value because it is easy to import, compare and process.

To facilitate this process, ACYC will establish the ACYC protocol. It is a central interface between entities that create and deliver metadata about NFTs and entities that use such data - e.g. companies selling NFTs. Metadata to NFTs are for example ratings of NFTs and creators, certificates, related NFTs, geodata, coupons etc. With the ACYC protocol, operators of metadata tools for NFTs have easy access to bring their data to where NFTs are sold or applied without providing technical connectivity and cooperation. Altogether, this will lead to a more efficient, scalable and low-carbon infrastructure.

ACYC protocol as a decentral NFT meta data infrastructure

If the ACYC protocol was implemented as a central data collection and distribution solution, ACYC would collect data from data providers, process it, save it in a central database, and distribute it out of this database. However, this comes with severe security concerns for participants:
- The data can be withheld by the entity that runs the central infrastructure
- If the central infrastructure breaks or is dismantled for some reason, the data might be lost. This can for example happen in the case of a bankruptcy.

In order to prevent that, dynamic NFTs ("dNFTs") can again be used to store the data. They have already been mentioned in the chapter on NFT ratings. However, for the

ACYC protocol, it is important to understand them in a bit more detail: A dNFT is an NFT "with encoded smart contract logic that enables it to automatically change its metadata based on external conditions."[106] It does that through a smart contract that triggers changes in the dNFT's metadata and hence changes the dNFTs attributes: If the smart contract is fulfilled, it provides instructions to the respective NFT on when and how to change its metadata.[107] As always, everything is saved in the blockchain and hence the data can hardly be withheld from the public, compromised or destroyed. Faulty data entries can always be reset to earlier versions.

Hence, at the core of ACYC protocol, a continuously mintable collection of dNFTs is created on a blockchain, e.g. Ethereum or Polygon. A smart contract is opened which instructs the dNFT to change whenever the underlying data changes. NFT marketplaces or stores obtain the dNFT and show it next to the underlying NFT, for which the dNFT entails the data. This ensures longevity, security, and accessibility of the data.

Graph 16: Schematic display of data collection and distribution using dNFTs
Source: Team
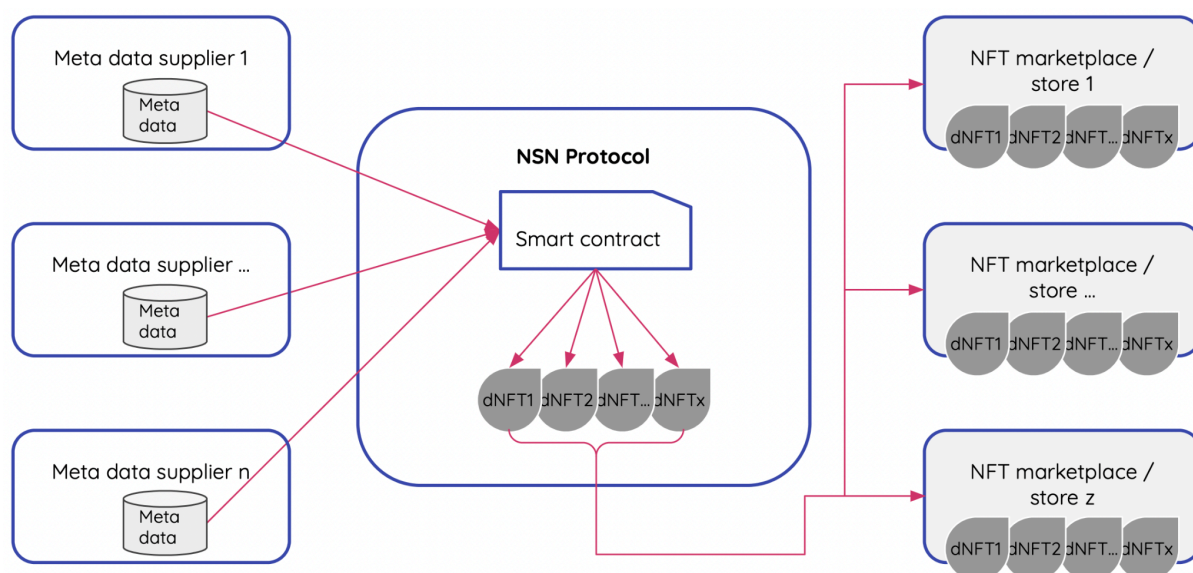
Product-Market fit

Business model yet to be determined

There are different options to earn money with the ACYC protocol:

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[106] Chainlink
[107] ibidem

One option is to have the meta data providers pay for the delivery of their data, if clicks on the data lead to visits on their website.

Another possibility is for NFT marketplaces and shops to pay for access to the data, as it can potentially lead to more sales through increased trust and transparency. In this scenario, the ACYC protocol may organically arise from the trendhub API.

Finally, creating a foundation to finance the data collection may be a viable option, with access to the data being granted to select members or to the general public. This stems from the following train of thought: One could argue that the ACYC protocol has some features of a public good, which are characterized by:
- Non-excludability: Once the good is provided, it is difficult to exclude anyone from using it.
- Non-rivalrous consumption: This means that the consumption of the good by one person does not diminish the availability of the good for others.

Both could apply to the NFT meta data, once it is stored in dNFTs (depending on whether the meta data is public or access restricted) and would make it difficult for a private businesses to provide the service of the ACYC protocol, as it may not be able to recoup the costs of providing the good due to the inability to exclude non-paying users and the non-rivalrous consumption. As a result, public goods are typically provided by the government or through collective action by individuals or organizations. The latter could be realized by creating a foundation, funded by NFT companies. The Signal foundation[108] is a well-known example.

Overall, while the specific financing model has yet to be determined, there are several potential avenues to explore that could help sustain and grow the business. Customer and market research need to be conducted in order to arrive at a definitive answer.

Tokenomics

The approach will be very similar to the [CRED token](#): ACYC will issue a governance token for the ACYC protocol to vote on product changes. It will be burned after use. For the ACYC protocol, they will be called ACYC and grant the rights to holders to influence the future direction of the ACYC protocol. However, the exact procedure will have to be determined after the business model has been decided. Hence, an exact description of the tokenomics would be dubious at the current stage of development and therefore will be omitted at this point.

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[108] [Signal foundation](#)

Market entry

As said earlier, the ACYC protocol can be considered a further development of the trendhub API. While the trendhub API delivers NFT ratings to NFT marketplaces and shops, the ACYC protocol goes above and beyond that point.

Therefore, it is a natural first step to start with the trendhub API, delivering NFT ratings to NFT marketplaces and shops. In this step, one will also see whether marketplaces and shops are willing to pay for the NFT metadata - and to which extent. The next development step would then be a switch to dNFTs with hidden metadata (i.e., only access for paying customers) in order to ensure data security and transparency. Then, in a last step, the ACYC protocol would be implemented.