



Sapien

The Web3 Social Network of the Future

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1 | GLOSSARY

ERC-20

A common protocol for all Ethereum tokens to follow that allows blockchain developers to predict how a token will function within the Ethereum ecosystem and ensures interoperability across the network.

Sapien Platform

Sapien is a Web3 social news platform that gives users control of their data, rewards content creators, and fights fake news.

Sapien Network / Ecosystem

The Sapien Network is powered by the SPN token and includes the Sapien Platform, the tokenized marketplace, integrated third party applications, digital content creators, media publications, and more.

Tribes

Tribes are communities within Sapien. A tribe can be either private or public, and focuses on a specific topic or theme. Users have reputations associated with each tribe in which they participate, affecting their voting influence within that tribe.

SPN

SPN is an ERC-20 utility token used on Sapien to reward users for their contributions. SPN can be freely exchanged between users within Sapien or held in any ERC20-compliant wallet. SPN is used to power social actions (posting, comments, voting, etc.), and to purchase premium content and physical or virtual goods only on the Sapien marketplace.

Staked SPN

Staked SPN describes the state of an SPN token that is currently locked in an Ethereum smart contract. Users can choose to stake SPN tokens to increase their capacity for performing social actions, user-to-user tips, and participating in platform and community proposals. Staking ensures Something-at-Stake design and adds stability to the token economy.

Unstaked SPN

Unstaked SPN is typically held in an ERC-20 compliant wallet and is not used within the Sapien ecosystem. A user can manage their portfolio of Unstaked tokens however they choose, but must stake them to access Sapien and platform utilities.



2 | OVERVIEW

Our Vision

Sapien is a democratized, tokenized, reputation-based social news platform capable of rewarding millions of digital content creators without centralized intermediaries. Sapien is powered by a utility token, SPN, and built to provide a smooth user experience that delivers the benefits and power of the blockchain and decentralization to the masses.

Official Website

www.sapien.network

Our Beta

<https://beta.sapien.network/>

SPN Decimals: 6

Initial Token Supply: 500,000,000

Distribution

Currently, all new tokens are minted through Sapien and distributed through rewards allocations.

SPN Token Utility

Tokens will exist in Staked and Unstaked forms. Staked tokens will provide users with platform functionality. Unstaked tokens can be held in external ERC-20 compliant wallets. SPN is used to, among other things:

1. Access the Sapien platform.
2. Reward digital content creators who generate quantifiable value, determined with the consensus of the community.
3. Allow holders to purchase physical and virtual goods, content, and services in a tokenized marketplace.
4. Share ad revenue with users who opt-in to see advertisements. By staking more tokens, users can earn a larger portion of the revenue they generate for Sapien.
5. Power a Democratized Autonomous Platform (DAP), enabling users to participate in organizational decisions and shape the product roadmap with a proposal system.



3 | DISCLAIMER

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- Any statistics, functionality, usage, access rights, proposed utilities, token mechanics and/or any other references in regards to SPN.
- Any references to the functionality, usage, platform features, user experience and capabilities, and future vision among others of the Sapien Platform and Sapien Network.

In regards to the Product Roadmap for Sapien, this is a projected project plan and timeline; however, as with any projected project plans, timelines can and do change, and planned strategies, usage groups, partners, technology releases, and features among others may be revised, altered, changed, and/or not be realized at all. Also, there may be a shift in direction, strategy and/or priorities which may require a shift in the projected product roadmap, development and timeline. The product roadmap reflected in the white paper, is the product roadmap for Sapien at the time of the white paper, but this is subject to change and is not to be relied upon. Some examples would include, but are not limited to:

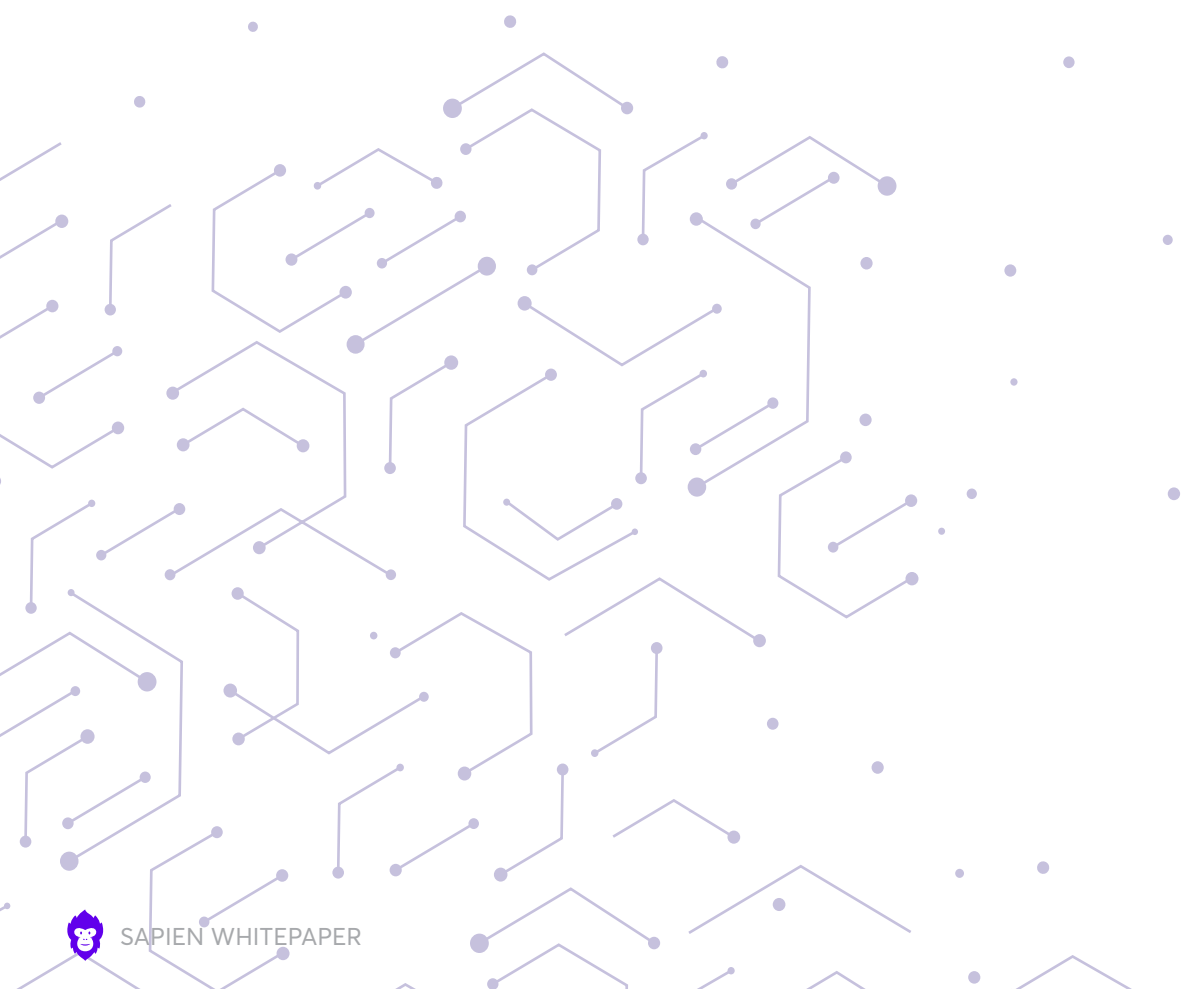
- The User Stories cited in this whitepaper are examples of some of the envisioned usages by the authors of this whitepaper for the Sapien Platform and Sapien Network, and may be subject to change, revised, altered, and/or not be realized at all.

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The Sapien Leadership Team, Sapien Advisors, Sapien Partnerships among others is current as of the date of the white paper, but is subject to change without notice and is not to be relied upon. In addition, The Key Partnerships listed in the whitepaper along with the vision for and benefits of the partnership; and any and all descriptions of functionality, products, enhancements, usage, framework, and collaboration among others may be subject to change, revised, altered, and/or not be realized at all.

Any and all information contained herein does not constitute any purchase or other advice, does not constitute an offer to purchase or sell, nor does it constitute a promotion or recommendation of any token or cryptocurrency or any other type of product.



4 | INTRODUCTION

A multitude of theories behind human intelligence suggest that social networks have been fundamental to the evolution of our species, Homo Sapiens¹. Whereas thousands of years ago the primary objective of interaction was survival, we now socialize for a variety of reasons, ranging from business to pleasure to emotional and intellectual fulfillment.

Modern technology has given us the platforms and tools necessary to socialize, collaborate, and create. Reddit and Facebook, for example, have employed our ancient practice of socializing to drive open-source innovations like React.js and GraphQL. This connectivity has spurred new innovations in social payments and compensation. Bitcoin, for example, is the first successful implementation of a borderless, cryptographical store of value that enables us to discreetly and seamlessly send funds to another person.

Satoshi Nakamoto's brilliant idea behind the Bitcoin, blockchain, has opened the floodgates of innovation. Immutable, hashed data is stored in blocks that are chained together to create a distributed database, secured with cryptography. This new technology has already begun to disrupt everything from healthcare, to banking, to consumer apps, and is poised to change the world forever.

We are currently witnessing the early stages of the Web3 revolution. Blockchain is at an inflection point, where early-stage adoption is transitioning into full-fledged implementation and technological integration. This momentum shift entails new disruption opportunities in dozens of traditional industries and products. Surveys of diverse groups of seasoned industry leaders confirm this observation: blockchain technology has immense transformative potential for business and is the future of the internet².

Using the immense power of blockchain, our team believes it is now feasible to harness our innate human desire to socialize to empower unprecedented control and customizability in the online social experience. Sapien's team will build a democratized social platform that truly serves its users and is fueled by a flexible ERC-20 utility token, SPN.

Sapien returns us to our roots by enshrining the social principles that created the first social networks. By championing collaboration, privacy, and fair compensation, Sapien will build a new future through the lessons of our evolutionary past.



5 | THE CURRENT WEB2 LANDSCAPE

Where We Are

Recent trends in social media and social news are disturbing. Twitter and Reddit are notorious for abuse and cyberbullying perpetrated by trolls, bots, and malicious institutions. Instagram inundates us with carefully selected images of other people's filtered, "perfect" lives. And Facebook has become a behemoth of fake news, overwhelming ad campaigns, and exploitative, in-the-shadows data harvesting³. These problems appear to have struck a chord, particularly among younger users⁴. In 2017, Facebook lost 2.5 million users under 25 in the United States alone⁵.

In Q1-Q3 of 2018, Google and Facebook have compromised the personal data of millions of their users⁶. In the process, Facebook has lost 30% of its value⁷. Mark Zuckerberg has used the freemium price tag of his platform to justify increasingly invasive methods of selling personal data to advertisers. Scandals with Cambridge Analytica and Russian trolls have made these invasions even more harmful.

Such observations underscore the reality that if you use social sites like Facebook, you're more than likely being exploited and deceived. Your personal data is being mined by the platform to sell your preferences to third parties and to target you with advertisements. Your click habits and personal views have been triangulated over the years to connect you to articles, groups, and friends that confirm your biases rather than challenge them. And the network in which you communicate and socialize is largely homogenous, comprised of "echo chambers" of like-minded people from similar socio-economic, religious, and racial backgrounds.

Your experience on platforms like Facebook and Google fundamentally lacks transparency and accountability, but charades as an open connection to the rest of the world.

That is unacceptable.

How We Got Here

The term "misinformation engine" was coined by Zeynep Tufekci, a sociologist and technology critic, in response to a YouTube video that alleged the October 2017 mass shooting at a Las Vegas concert was fake⁸. The conspiracy video received millions of views and was third on YouTube's trending search results on October 3rd, two days after the massacre claimed the lives of 59 people.

The Las Vegas video is hardly an isolated occurrence. Social news platforms' lack of accountability frequently leads to harmful externalities and abuse cases. During the 2016 presidential campaign, Facebook algorithms propagated fake news to users with similar political beliefs⁹. Such stories were part of a concerted Russian effort to mislead the American public and tamper with the 2016 election¹⁰.

Facebook made a lot of money off of the Russian misdirection campaign, which encouraged it to turn a blind eye to the deception of its users. As Nicholas Thompson and Fred Vogelstein observe in their Wired article:

"Facebook also sold ads against the stories, and sensational garbage was good at pulling people into the platform. Employees' bonuses can be based largely on whether Facebook hits certain growth and revenue targets, which gives people

an extra incentive not to worry... Facebook had plenty of reasons to keep its head in the sand¹¹."

Facebook also improperly leaked the data of more than 50 million users to Cambridge Analytica, a U.K. based firm that assisted the Trump Campaign in targeting voters with exploitable psychological profiles¹². The revelation of this data breach has led to accusations from across the political spectrum that Facebook deliberately misled the U.S. Senate and British Parliament.

One former Facebook executive, Chamath Palihapitiya, believes these issues aren't unique to his past employer. Palihapitiya has argued that the Web2 approach is counter-productive to meaningful interaction online. As he said, these platforms contain:

No civil discourse, no cooperation; misinformation, mistruth. And it's not an American problem — this is not about Russians ads. This is a global problem¹³.

Regardless of your political beliefs, the core problem is that social news is both powerful and exploitable. When monetized, news is disseminated based on what stories will accrue the most clicks. Clicks alone are agnostic to the truth, and in fact can be weaponized against it.

Misinformation is not limited to Facebook (although Facebook's command of 2.2 billion active monthly users is a significant number in its own right). YouTube's 1.5 billion users are routinely seduced by a recommendation engine that promotes conspiracy theories, violence, hate speech, and fake news in order to keep people watching for longer¹⁴. As one former YouTube developer said, "YouTube is something that looks like reality, but it is distorted to make you spend more time online."

Consider, for example, one study that found YouTube users favored videos that promoted anorexia as a healthy lifestyle over videos that sought to inform viewers about its public health dangers¹⁵. There are countless other examples of misinformation on the platform, often found in its most high-traffic areas. Often times, social media algorithms are fine-tuned to keep users on for mere seconds longer, reinforcing existing biases and distorting reality.

It is therefore unsurprising that, following the Parkland High School shooting that killed 17 on February 14th, the top trending video on YouTube was a conspiracy theory claiming that one of the survivors was a paid actor¹⁶. It was almost a direct analog of the conspiracy video that trended following the October Las Vegas shooting.

Misinformation moves through more than just provocative videos. In general, lies are easier to sensationalize than the truth and spread much, much faster. As one comprehensive study of Twitter from 2006 to 2017 found:

Falsehood diffused significantly farther, faster, deeper, and more broadly than the truth in all categories of information... False news [also] reached more people than the truth; the top 1% of false news cascades diffused to between 1000 and 100,000 people, whereas the truth rarely diffused to more than 1000 people¹⁷.

This is troubling, because fake stories are more than just headlines. Social news platforms shape what we believe and how we act. More significantly, they often facilitate echo chambers of belief and peer-to-peer misinformation¹⁸. According to Wired, for instance, Facebook's recommendation algorithm actively encouraged anti-vaccine believers to join flat-earth society groups and to read articles about Pizzagate, a viral and discredited 2016 presidential election conspiracy theory that alleged Hillary Clinton and John Podesta were running a child-sex ring in Washington¹⁹.

Due to recent negative press about these issues, prominent social news platforms have been duly chastised by the US government. Unfortunately, their attempts to fix these problems have been largely unsuccessful.

YouTube manually removed accounts belonging to neo-Nazi groups and made mechanical changes to its recommendation algorithm, but many of the offending videos are deeply networked and the fake news problem is still overwhelming²⁰. Jonathan Albright, research director for the Tow Center for Digital Journalism at Columbia, mapped the network of fake videos, stating:

"Every time there's a mass shooting or terror event, due to the subsequent backlash, this YouTube conspiracy genre grows in size and economic value... it's getting harder to counter these types of campaigns with real, factual information²¹."

Twitter claims that its algorithms are equipped to spot when accounts manipulate trends and promote falsehoods, but a recent report concluded that false stories were 70% more likely to receive a retweet than true ones were²². Another report found that users who shared fake news to unmask lies inadvertently spread them instead, and that Twitter's algorithms can't differentiate between tweets that share hate speech to promote it and those that share it to fight back²³.

Facebook has added controls for users to flag posts that seem false and now has third party contractors audit suspicious content for accuracy and possible manipulation. But Mark Zuckerberg admitted at the beginning of 2018 that Facebook's news feed would still require substantial modification to address the abuse-cases exposed by Russian trolls.

The common thread in all these cases is the application of band-aid solutions to a systemic problem that is a direct consequence of Web2 technological infrastructure. Modern social news platforms are all built to maximize blunt connectivity—connectivity only for

connectivity's sake. This is the design mindset that maximizes clicks, shares, and headlines solely to spread them. The core architecture of platforms like Facebook and YouTube necessitates the diffusion of content to the most siloed corners of the internet. By connecting us all and engineering addiction, they drive us further apart.

Social news platforms are not going to solve their fake news problem by banning a few high-offenders and increasing scrutiny on hate speech. These platforms are themselves the problem and their very existence, by design, facilitates and encourages the dissemination of lies.

Just recently, a Stanford study concluded that over 30 million fake items were shared on Web2 social news platforms during the 2016 presidential campaign²⁴.

Something needs to be done to address these critical problems in social media.



**That's why our team
created Sapien.**



6 | WHAT IS SAPIEN?

Sapien is more than just a platform - it's a movement that urges users to take back control of their social experience. By leveraging blockchain technology, Sapien is a fundamental paradigm shift in the way we interact, influence, and transact within online communities.

The Sapien Platform

Sapien is a Web3 social news platform that gives users control of their data, rewards content creators, and fights fake news. Web3 technologies (e.g. blockchain, IPFS, web torrents) will serve as the underlying infrastructure to create a highly customizable, democratized social network without centralized intermediaries.

The Sapien Network

The Sapien Network consists of the Sapien platform, marketplace, API integrations, and third-party applications, all connected and powered by SPN, an Ethereum-based utility token.

Core Values



Democracy

Democracy users should have the final say over their communities and should be incentivized to contribute to them.



Free Speech

Free Speech is a fundamental principle that should be protected online with disruptive tools.



Privacy

Privacy targeted advertising is profitable, but inherently flawed because it exploits user data and infringes on user privacy.



Customizability

Customizability each user should be able to tailor a social experience to their liking.

Key Features



Pseudonymous Browsing

Interact with communities on Sapien with your real identity or pseudonymously.



Feature-rich Chat

Join text and voice channels with our powerful chat interface, providing a more dynamic and engaging user experience.



Subscriptions

Subscribe to and join Tribes to stay up to date with the latest posts from your friends and people from around the world.



Encryption

Protect your online privacy. Sapien protects your personal data and offers encrypted chat conversations.



Friends, Groups, and Posts

Add friends, create groups, share posts, write comments, and expand your horizons.



Highly Customizable

Every individual is unique. Have control over every feature and tailor your own social experience.



7 | OBJECTIVES

Establish a Proof-of-Value Consensus Protocol

At its core, SPN enables us to collaboratively distinguish high-quality content across the Sapien Network. Its built-in Proof-of-Value mechanism will promote quality contributions and reward users accordingly. As the contributions of users are evaluated throughout the network, they will accumulate a score that reflects their

reputation. This will allow a user's domain-specific expertise to be reflected within their communities and Tribes.

Within Sapien, reputation will mitigate trolling and reduce the spread of fake news. Reputation scores can be queried from the network and need not be restricted to the Sapien platform.

Build a Robust Marketplace and Incentivize User Contributions

Content creators should be rewarded fairly for their time and the original content they add to a platform. Users will be able to tip one another for posts or comments and even receive payouts in SPN from Sapien for posts that have created quantifiable value. By enabling users to pay each other in this manner, we will foster an environment that supports

quality content and liberates content creators from dependence on ad revenue.

A decentralized marketplace is also planned in the roadmap to enable SPN holders to purchase exclusive premium content, services, physical merchandise, and virtual goods, including themes, integrations, and features.



Launch the First Democratized Autonomous Platform

To create a truly autonomous social network, users must have real power over the direction of their platform. SPN token will give users a voice through our innovative proposal system. Proposals will allow users to participate in organizational decisions, feature developments, and marketplace rewards and put SPN holders in a unique position to suggest and prioritize milestones on our project roadmap.

With the first autonomous social platform, we can cultivate a passionate and engaged community with dynamic and flexible values. In addition, SPN will enable users to vote on proposals within a Tribe, facilitating democratic decisions at the community level. Eventually, this will enable Tribes to self-moderate without the need for authoritative moderators that are the norm on Web2 platforms.

Power Future Applications on the Sapien Network

As blockchain applications become the new standard, Sapien will build out a development platform powered by SPN to offer users a wide variety of app integrations. The developer platform will allow devs to easily tap into the Sapien Ecosystem to build third-party applications. At the team's discretion,

many of the Sapien UI components, blockchain innovations, and token interfaces will be open-sourced over time. Creating a smooth experience for developers will help extend Sapien technology and core values to other applications.



8 | WHY JOIN SAPIEN?

Once mainstream consumers realize the true power of tokenized, Web3 social networks, they will never go back to traditional websites. Similar to the introduction of the first iPhone, the touch screen has since become the ubiquitous interface for mobile phones and technology in general. Web3 technologies like the blockchain do a better job of aligning interests, elevating transparency, and returning power to consumers.

We believe that Sapien will become one of the most versatile Web3 platforms. The native token, SPN will facilitate creating and transferring value within and beyond the platform. Fake news will be greatly mitigated with secure identities on the blockchain and an extensive reputation system. Users will finally be in complete control of their online social data.

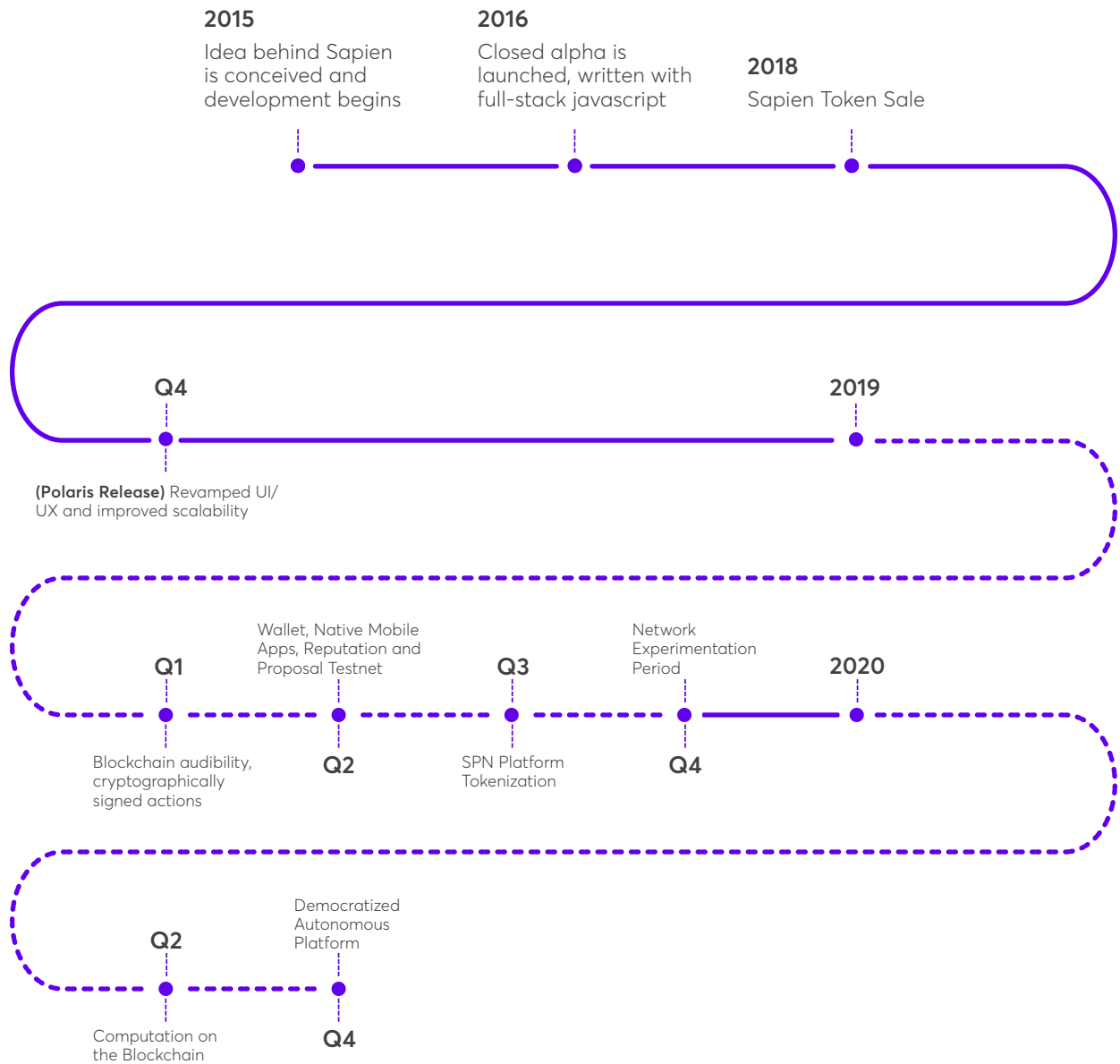
With SPN, content creators will truly have a viable means of earning rewards without being exploited by centralized entities, and users will finally have a meaningful voice in collaborating with and shaping their community.

By leveraging the latest blockchain technologies, we can work together to build a platform that is immune to censorship, guards our free speech, respects our privacy, and persists content throughout humanity's existence.

Now is the time.

**Don't stand
on the sidelines.
Jump in!**

9 | PRODUCT ROADMAP



10 | USER STORIES

There are several users that would comprise Sapien's vibrant ecosystem:

Creators

Users who submit original digital content (posts, comments, videos, memes, podcasts, etc.) to the Sapien platform. Their contributions are compensated with SPN and reputation amounts that correspond to how their content was evaluated by other users on the platform.

Curators

Trusted guides for different Tribes on Sapien. Curators discover and share high-quality content within their Tribes and network.

Freelancers

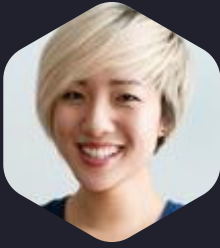
Individuals who provide services to Sapien users in exchange for SPN tokens. Tasks will be completed on the marketplace with zero transaction fees.

Developers

Decentralized app developers who want to contribute to the platform ecosystem. As the network grows, our team will open up a developer platform that will allow engineers to build third-party applications, integrations, and features for Sapien.

Media

Outlets can partner with Sapien to set up independent publishing and prices for content, create a sustainable business model, and build a following with our users.



Creators

Name: Alice

Background

Alice is a content creator who just graduated from college. She loves writing articles on technology and current events. She also recently launched a podcast on SoundCloud to document her growth as an author and an individual.

Problem

As much as she enjoys creating digital content on the internet, Alice is disappointed that she has made \$0 from her articles, posts, and podcast. She would love to create content for a community of people that can reward her for her consistent and passionate work. She also wants to set up an easy way for power-users to subscribe to her premium content.

Solution

Alice finds out about Sapien. She posts her articles, podcast, and videos in the technology Tribe, receiving great feedback from the community. Her efforts are rewarded with SPN tokens, some of which she uses to launch her own Tribe on Sapien for premium content. She eventually gets thousands of subscribed followers who pay her weekly in SPN tokens for her content. Alice is excited that she can finally pursue her dreams!



Curators

Name: Waylan

Background

Waylan is often found in the "new" section of Reddit and 9gag. He spends time curating content on these platforms, upvoting posts he thinks should go to the front page and downvoting content he thinks is irrelevant or spam.

Problem

People like Waylan are essential to platforms that depend on users to evaluate the content generated by other creators. Unfortunately, Waylan is not currently rewarded for his time and effort despite thousands of curators like him underpinning user-generated platforms.

Solution

Waylan joins Sapien. As a curator on the platform, Waylan uses his staked SPN to give quality contributions upvotes. Depending on how early he votes, Waylan now can earn rewards in the form of SPN tokens if the community also finds the post valuable. At the end of the rewards window, Waylan will receive all of his originally staked SPN back and any newly staked SPN, proportional to the amount he originally staked and how early he voted.



Freelancers

Name: Rahul

Background

Rahul, a passionate full-stack JavaScript developer based in India, builds web applications for clients all over the world. He enjoys the flexibility of working on his own schedule and setting his own prices.

Problem

To list his services, Rahul uses Fiverr and Upwork, two popular freelancing websites. However, as a result of being centralized, both companies take as much as 20% commission on every job that Rahul performs. Rahul is frustrated by these excessive fees, and rightfully so.

Solution

Rahul learns about Sapien's decentralized marketplace, where in addition to listings for physical goods and virtual commerce, he can also list his services with zero transaction fees. Payments are handled efficiently by the SPN token. He is also happy to notice that as he completes projects successfully, his reputation increases as a vendor. Sapien's global reputation system lets other websites integrate the SPN token and view Rahul's stellar reputation.



Developers

Name: Nzingha

Background

Nzingha has been active in the blockchain space since the early days of Ethereum. She's an experienced developer and a strong believer in blockchain technologies. She routinely contributes to open source projects and is active in crypto circles on social media.

Problem

Nzingha enjoys using existing social platforms, but understands the potential of Web3. She wants to test a number of experimental ideas, but won't be rewarded for contributing to any existing centralized websites or open source projects.

Solution

Nzingha learns about the developer platform on Sapien. It enables her to build on top of the platform and sell her creations in an open marketplace. All transactions on the marketplace are powered by SPN tokens. Nzingha can now contribute to the Sapien platform with themes, integrations, and features, while also opening up a sustainable revenue source and testing her ideas.



Media Companies

Name: Carlos

Background

Carlos is the Editor-in-Chief of a publication called Now!. Now! delivers high-quality, impact driven articles and stories about developing trends and topics in contemporary society. Carlos is an ambitious leader who wants to rapidly grow the Now! digital user base while augmenting the brand and reputation of his publication.

Problem

Now! is finding it difficult to distinguish itself from the plethora of other publications in the market. Carlos realizes how hard it is to compete with prolific giants like The New York Times and BuzzFeed, as well as smaller digital news platforms. He knows that he must build the Now! brand and modernize his business to reach more users.

Solution

Carlos finds an untapped audience for his publication on the Sapien platform, where users can pay with SPN to subscribe to Now! content. His team can set individual prices or subscriptions for articles, powered by the SPN utility token. Using the Unified Media Portal, Sapien users can organize their content in one place from Now! and other publications. Carlos is very excited to be at the frontier of media on the blockchain and to build a trusted brand on Sapien.

11 | MARKET OPPORTUNITY

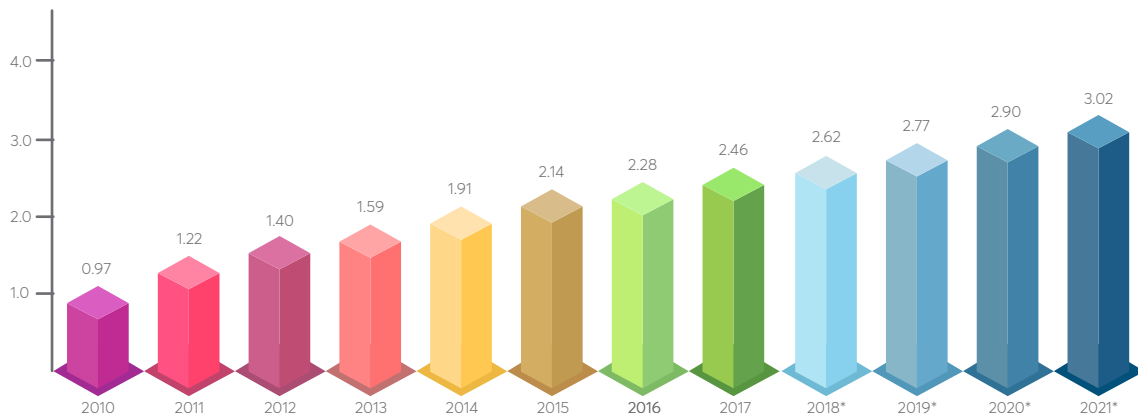


Figure 8: Number of global social network users 2010-2021

Source: Saxon Advisors; eMarketer, July 2017, emarketer.com

Notes: *Forecast Internet users who use a social network site via any device atleast once per month.

Figures regarding 2010 to 2015 originate from earlier source news release.

Social networks have several distinct markets that can be analyzed individually:

Social News

The social news segment has high retention and activity, enhanced by platforms that encourage user-generated content.

E-commerce

According to eMarketer.com, An estimated 1.66 billion people in 2017 worldwide will purchase goods and services online. This is expected to grow from 2.3 trillion to 4.48 trillion dollars by 2021. The emergence of Web3 Technologies like blockchain and distributed computing are rapidly changing how we all transact in the future.

Competition

(Blockchain-based)

With 800,000 registered users, Steemit is the closest blockchain based competitor. One major difference is that Sapien will utilize a Proof-of-Value algorithm, which is a multi-faceted approach to rewarding valuable content in communities.

Competition (Incumbents)

Facebook is struggling following multiple data leaks to third-party developers and the barrage of fake news on website. As of Q2 2018, the company recently missed analyst projections on revenue and daily active users. Twitter is facing many of the same issues, with bots and fake accounts resulting in a decline in active users.

Social Networks

There are currently over 2.3 billion social media users and by 2020 there will be more than 3 billion according to Statista. Humans are an inherently social species; thus, some form of social media will continue to play an important role moving forward. Nearly 750 million of these users are expected to be from emerging markets like China and at least another 300 million from India, according to eMarketer.com.

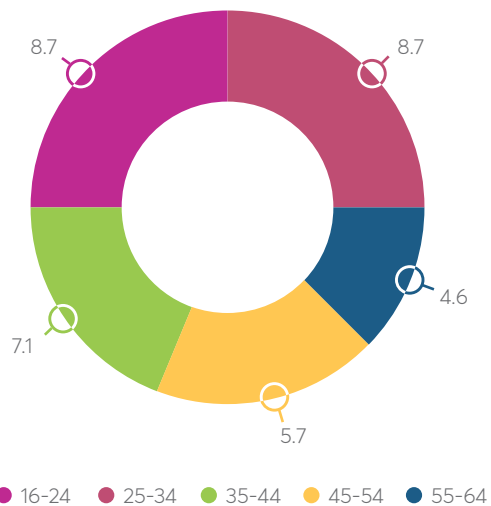


Figure 13: Average number of social media accounts per internet user as of June 2017

Source: Saxon Advisors; eMarketer, July 2017, emarketer.com

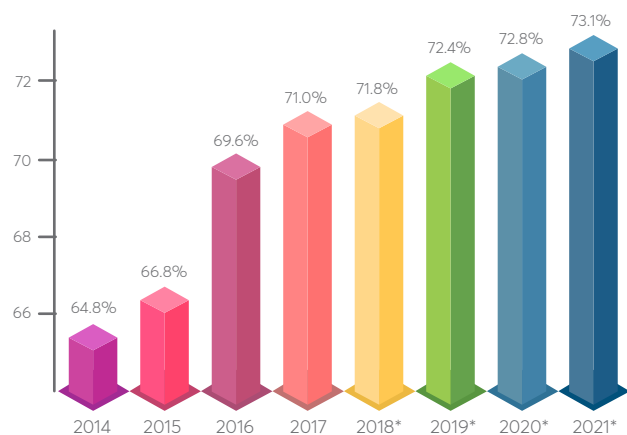


Figure 9: Global social network penetration 2014-2021

Source: Saxon Advisors; eMarketer, July 2017, emarketer.com
Notes: *Forecast Internet users who use a social network site via any device atleast once per month. 2015 & 2014 data from earlier publication.

Despite the ubiquity of social networks, not only user figures increasing but also user engagement continues to grow, indicating that the market potential is still increasing. On average, internet users spend more than an hour per day surfing social networks. The high user activity prompts businesses to use the attention economy for marketing or social advertising. Figure 13 shows how the average internet user is active on multiple social media accounts.

E-Commerce

According to Statista, the number of people buying goods or services online will increase from 1.66 billion in 2017 to more than 3 billion in 2021.

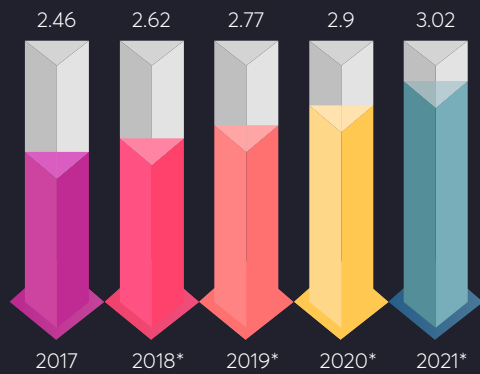


Figure 1.1: Number of social media users worldwide from 2017 to 2021

Number of users in billions
Source: Statista

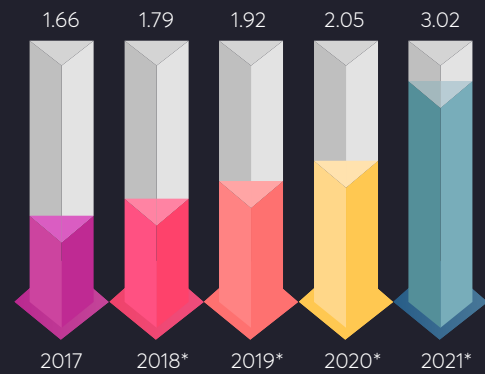


Figure 1.2: Number of Digital Buyers users worldwide from 2017 to 2021

Number of users in billions
Source: Statista

As seen below in Figure 5, the average number of online transactions per capita is not uniform - US shoppers made an average of 9% of total retail online, whereas in South Korea made 16% e-retail purchases.

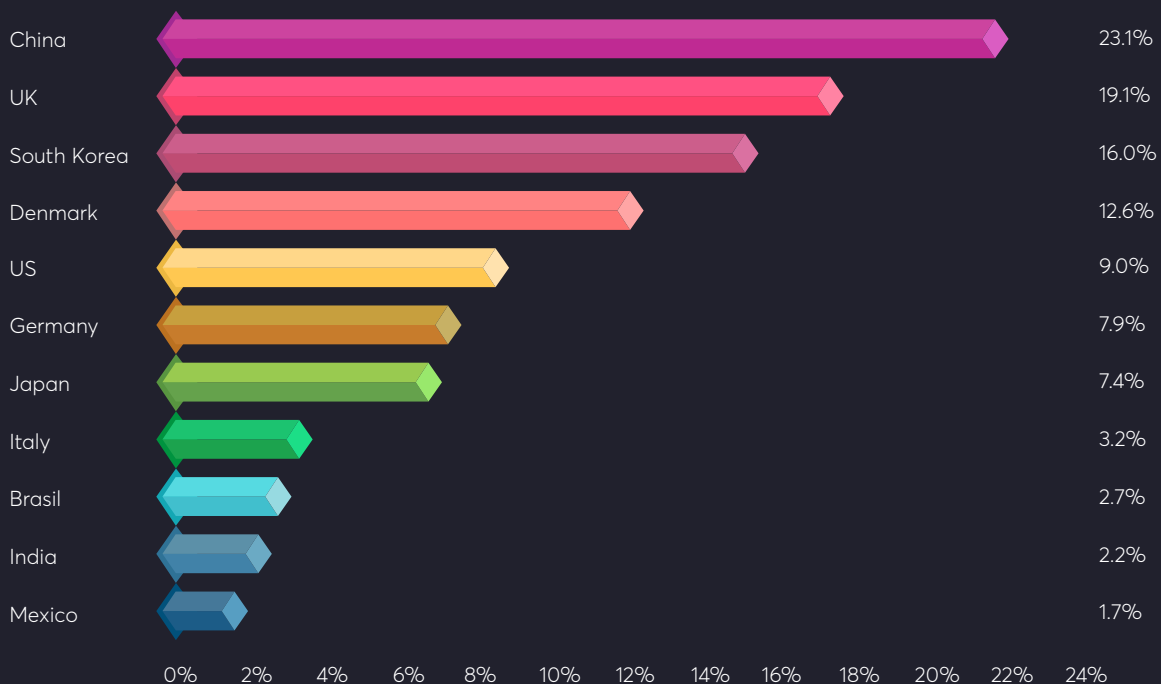


Figure 5: E-commerce sales as percentage of total retail sales in selected countries in 2017

Percentage of total sales
Source: Saxon Advisors; eMarketer

The opportunity for Sapien lies in its unique potential to leverage distributed technologies to build a tokenized marketplace, powered by the SPN utility token. The Sapien marketplace will enable users to purchase and sell physical and virtual goods, services, and premium content. Reputation scores will be integrated into the marketplace, inspiring confidence in users that the vendor they are purchasing from is reliable.

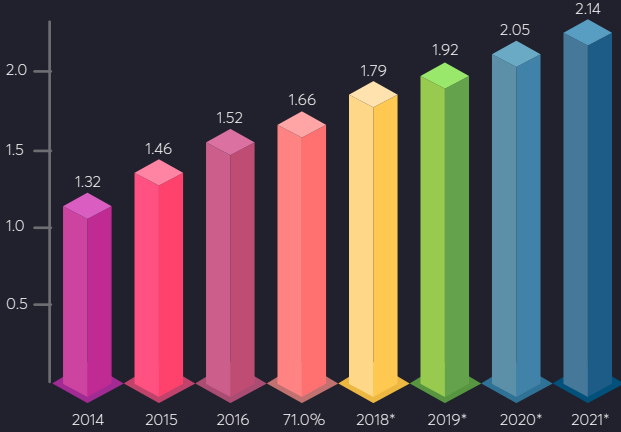


Figure 6: Global number of digital buyers 2014-2021 (in billions)

Source: Saxon Advisors; eMarketer
Notes: *Forecast. The source defines digital buyers as internet users who have made at least one purchase via any digital channel within the past year, including online, mobile and tablet purchases. 2014 & 2015 data from earlier publication.

Key Players

Leading social networks usually boast many user accounts and strong engagement metrics. As the most widespread social media site, Facebook was first to surpass the 1 billion monthly active users milestone, and as of 2017, has more than 2.2 billion MAU, according to figure 15.

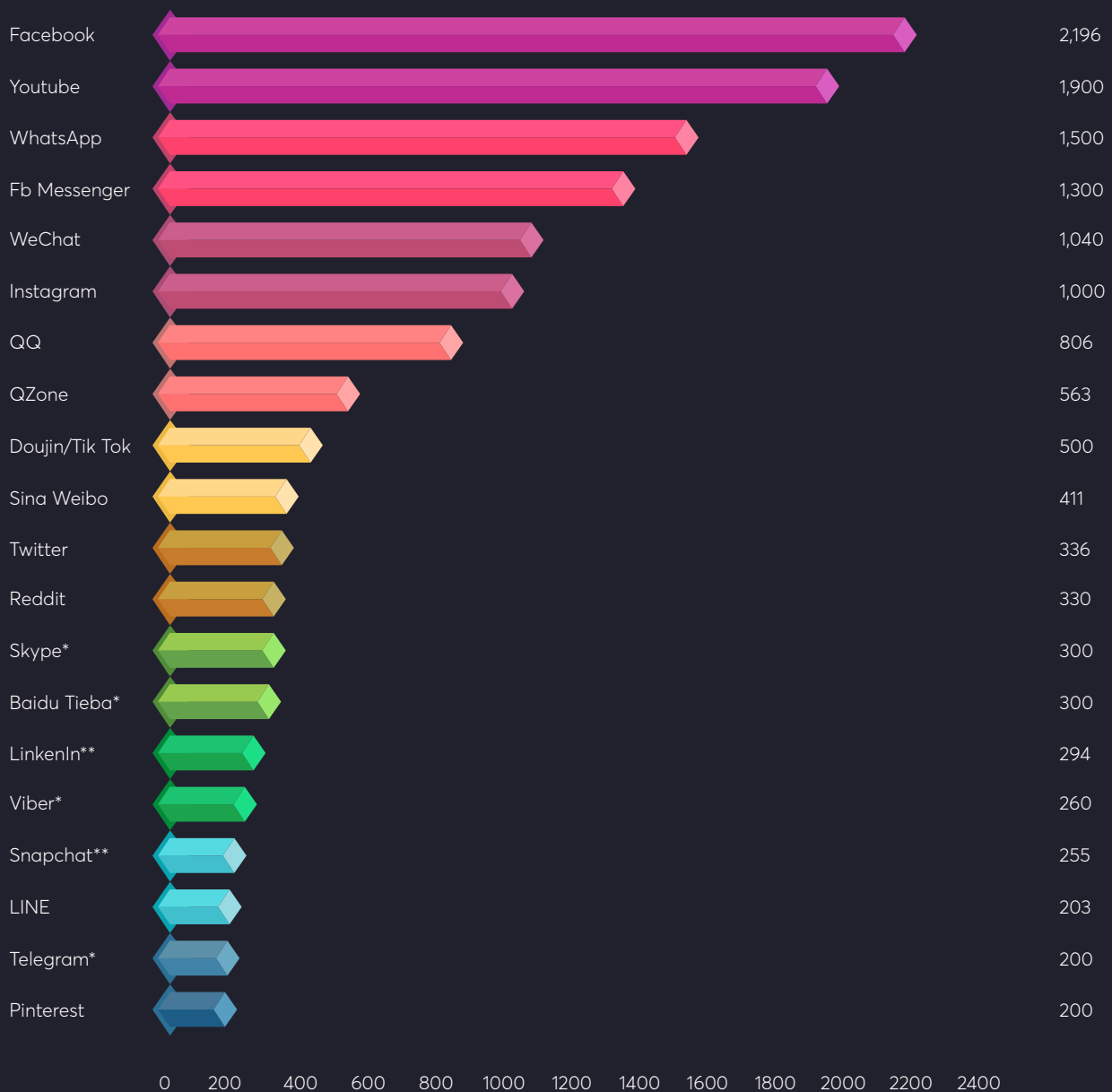


Figure 15: Most popular social networks worldwide as of July 2018, ranked by active users

In millions

Source: Saxon Advisors; We Are Social; SimilarWeb; TechCrunch; Apptopia; Frotune

Notes: *Platforms have not published updated user figures in the past 12 months; figures may be out of date and less reliable.

**These platforms do not release MAU data, user figures from third-party reports

As a result of the plethora of content on social networks, many users have begun to rely on these platforms for news. However, social media platforms, which have been optimized to proliferate

content to users, have the unintended consequence of amplifying fake news. The market opportunity for Sapien lies in the ability to responsibly qualify and propagate content.



Figure 32: Percentage of users who rely on site for news (in %)

Source: Saxon Advisors; Financial Times; Pew Research

Privacy

As shown by Figure 2.1 and 2.2, trends indicate a rising privacy concern and a rising distrust of disclosing personal info on social media. These attitudes show internet users are increasingly concerned with privacy, yet simply have no option but to continue using services that hoard and profit of their data.

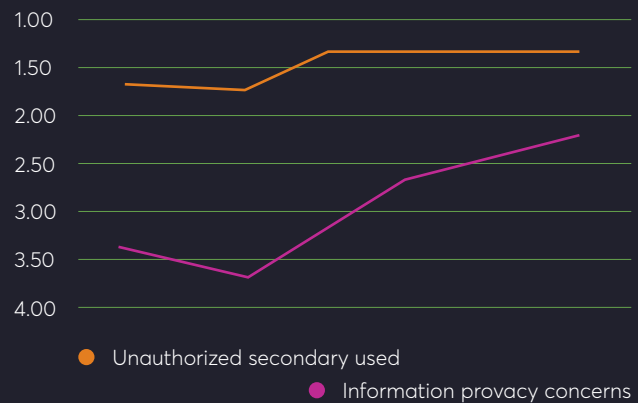


Figure 2.1: Disclosure Behaviors

Source: Semantic Scholar

Longitudinal Study Hypothesis Results

Number	Hypothesis	Findings
H1	Social Media Privacy concern are positively correlated to time.	Supported
H2	Distrust of Social Networking Sites is positively correlated to time.	Supported
H3	Risk perception for privacy disclosure is positively correlated to time.	Supported
H4	Privacy disclosure to Social Networking Sites is negatively correlated to time.	Supported

Source: Semantic Scholar

12 | BUSINESS MODEL

Our goal is to create a sustainable business model that aligns the incentives and priorities of SPN token holders, platform users, and company shareholders.

Marketplace

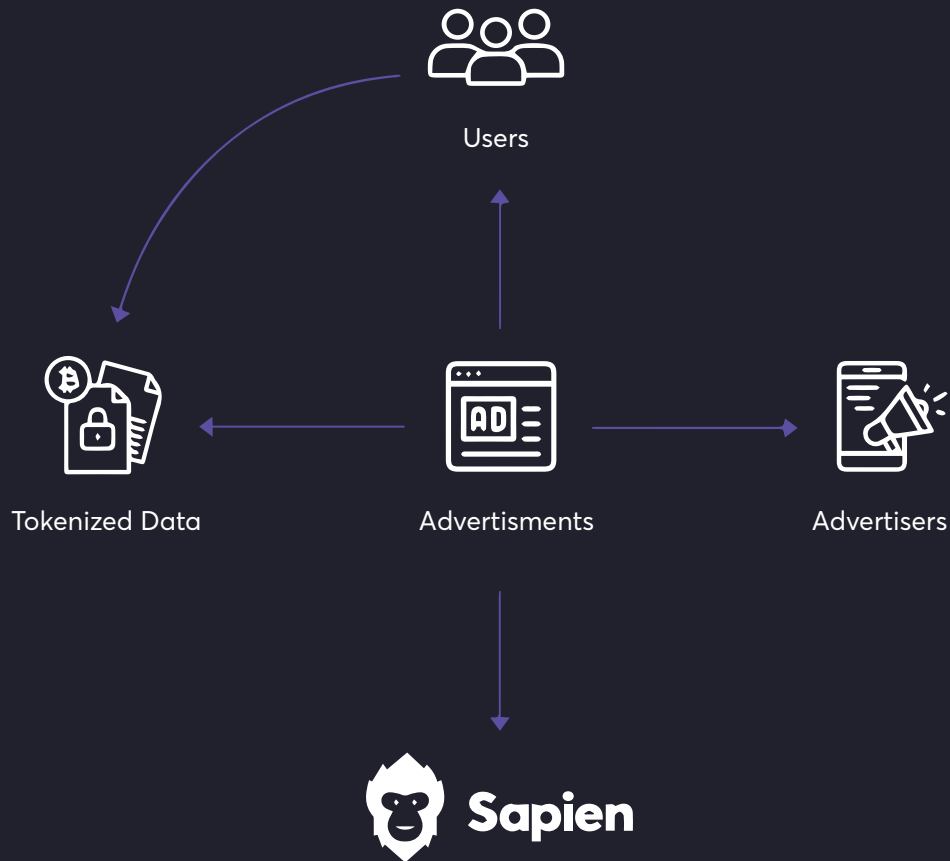
Buyers & Sellers

Users will be able to purchase and sell physical and virtual goods, services and premium content on the Sapien marketplace using SPN tokens. Reputation scores will be integrated into the marketplace, enabling users to be confident that the vendor they are purchasing from is reliable.

Sapien

Sapien will charge a transaction fee to buyers and sellers on the Sapien marketplace which reduces as they meet certain thresholds of staked SPN. The thresholds will be determined with the Adaptive Staking model.

Ad Platform



The rising concern for privacy has been disregarded by most mainstream social platforms. As a result, a collective feeling of helplessness has emerged among users regarding the exploitation of their personal data to use popular services. Users should be in absolute control of their data and how other companies use it. Therefore, prior to any third-party integrations with Sapien, we will attempt to standardize and tokenize

any data that we have amassed from our users. SPN tokens will be assigned to various elements of user data for activity, interests, subscriptions, likes, dislikes, etc. Users will have complete autonomy in determining what data is released and be able to receive rewards for the consensual disclosure of information when third-party apps ask for permissions or advertisers ask for data.

Users

User privacy is a critical part of our philosophy, and as such we will allow users to have complete control over their relationship with advertisements on Sapien. By default, users will see no advertisements and no personal user data will be collected without a user's knowledge. If a user so desires, they can opt-in for Sapien to collect and allow advertisers to show ads to them. The more staked SPN a user has, the more SPN tokens they will receive for enabling advertisements.

Advertisers

Ads will be purchasable on Sapien with SPN tokens and will be served to users who have enabled them. Advertisers will receive a substantial discount for purchasing ads with SPN tokens. Advertisers will be also be able to place ads on public Tribes that align with their target audience. The advertising experience will be similar to existing social platforms, except a large percent of ad revenue will be given to users.

Sapien

The majority of revenue earned from ad purchases will be distributed to users who have enabled ads. Users will receive at least 50 percent of the revenue from ad purchases. The ratio of revenue distributed is dynamic and will be adjusted to keep the platform afloat. All ad transactions will be publicly viewable on etherscan.io. This way, Sapien can assure transparency and our users will retain full control over their experience on the platform.



13 | TOKEN SALE RECAP

We held our token sale from January 31, 2018 - February 15, 2018. Users exchanged ETH for the SPN utility token, which gave access to the alpha version of the Sapien platform.

Sapien's crowdsale was a resounding success, raising over 12,000 ETH in just two hours. In total, the team raised more than 20,000 ETH from over 5000 users hailing from 142 different countries.

Nearly 72% of countries in the world participated in Sapien's presale, a testament to our cosmopolitan vision of a truly global, distributed social network. The team was delighted at the outpouring of support for and interest in Sapien's values and objectives.

Further detail on the Sapien token distribution of funds and resource allocation will be detailed in a separate blog post, coming soon.

14 | SPN TOKEN

Proposed Utilities

Utility I: Staked SPN to Power the Sapien Platform

In order to encourage stability of the SPN token and the curation of good content, Sapien requires tokens be staked to access social features on the platform. SPN tokens are staked for a period of 1 year. Staked tokens will be used to upvote content, vote on proposals, submit new proposals, tip, create premium communities, and much more. On the other hand, Unstaked tokens are liquid: Unstaked SPN will be easily transferable out of Sapien to a user's personal wallet.

Staked SPN tokens do not get consumed in platform transactions. To ensure the network is not vulnerable to spam, some amount of staked SPN is required to make a rewardable post or comment, and to vote on rewardable content. The exact capacity requirements are subject to change based on network usage. If a user posts illegal content or violates community guidelines, it is possible for the community to penalize the malicious user by freezing their staked SPN.

Utility II: Reputation built-in the Sapien Network

Contributions made by users, publishers, and businesses on the Sapien platform will contribute to a reputation score stored on the blockchain. A user's reputation score reflects their history of actions within the network, and is unique to each community in which

they participate. As a user's actions are evaluated, their reputation score can be positively or negatively impacted. Well-reputed users are accorded more influence within their respective communities.

Utility III: Content Payouts and User-to-User Tips

To further encourage and cultivate quality content on Sapien, the SPN token will be the backbone of payouts and user-to-user tipping. Payouts for content creation are the primary mechanism for rewarding users and promoting the creation of quality content. User-to-user transactions will foster an altruistic environment in which a user can selectively reward authors and original content creators for posts, comments, podcasts, videos, memes, etc. Content creation rewards provide a tangible incentive for users to contribute quality content to the Sapien platform.

Users will not be required to have substantial knowledge of cryptography or how tokens operate. Sapien will offer various settings that can be customized to fit the skill-level of users (see “Building a Web3 User Experience”). Advanced users will have the option to manage their own private keys for their SPN address. Users will also be able to set up recurring payments for premium subscriptions. Our intention is to open the benefits of SPN to everyone, regardless of their qualifications or crypto expertise.

Utility IV: Native Token for a Marketplace

A DAP proposal system will be used to propel much of the development of the marketplace. After opening up the platform to developers, the interface will benefit from the collective imaginative power of our community.

a community-driven marketplace will serve as the primary interface for users to create and access exclusive rewards, themes, and components, both within Sapien and through third-party businesses.

The Sapien marketplace will be the ultimate portal for users to interact with vendors, content creators, and news outlets. To complete the ecosystem,

Utility V: Ad Platform Revenue Sharing

User privacy is a critical part of our philosophy, and as such we will allow users to have complete control over their relationship with advertisements on Sapien. By default, users will see no advertisements and no personal user data will be collected without a user's knowledge.

Users will be able to choose what data, if any, they want to share with advertisers. Users will receive a greater percentage of ad revenue for sharing their data with advertisers. The percentage of ad revenue received by a user will be based on a tiered system, with users receiving an even greater percentage if they have more Staked SPN.

Sapien will also facilitate user-to-user advertising. Tribes will have the option to display advertisements on their groups

and will receive a share of ad revenue for doing so. The choice of whether or not to display advertisements is entirely up to the Tribe, and they will have complete control over which ads are displayed on their group page. The distribution of revenue between owners and users will also follow the above tiered structure.

Advertisers will be able to purchase ads on Sapien with either fiat or SPN tokens and reach users who have shared relevant information. Advertisers will receive a substantial discount for purchasing ads with SPN tokens.

Utility VI: Democratized Autonomous Platform (DAP)

SPN token holders will be able to create and vote on proposals for Sapien. Proposals can theoretically consist of anything, ranging from organizational decisions to feature requests to marketplace reward modifications. Proposals will be at the core of the DAP, enabling users to self-organize and self-moderate their Tribes. This elevates the autonomy of a community, empowering users to actively build the Tribe that they want to be a part of. Bad

actors will be flagged for inappropriate behavior within a Tribe, creating a tribunal. A tribunal will enable the community to collaborate and decide if a user should be penalized and to what extent. Reputation will be tightly tied to community organization and execution of the DAP.

USE CASES

USE CASE I: FAKE NEWS

Problem

According to a study done by Stanford University, there were over 30,000,000 fake items shared in the 2016 presidential race.²⁶ In this era of fake news and alternative facts, it is not surprising that subscriptions for more reliable sources have been on the rise. The New York Times' revenue, for instance, topped \$1 billion for the first time in 2017.³² People need access to quality content without worrying about the authenticity of the publisher and journalists behind it. Revenue generation must shift from the manipulative "eyeball" business model to a more sustainable and robust model. Transparency is particularly essential in news, as news content directly influences the masses by motivating our beliefs and behaviors.

The fake news problem is compounded when technologies such as artificial intelligence become smarter. Already, machine learning has enabled us to replicate the voices of individuals and combine them with video to create a convincing illusion that people really did say fake statements. Online entities, funded by large corporations, will continue spending millions in the booming attention economy, resulting in a constant bidding war for eyeballs and clicks. We must be discerning in how we consume content on the web as the truth becomes blurrier. This is precisely where we can leverage blockchain technology to identify and distinguish valuable content while directly rewarding its creators.

Solution

Sapien will leverage the blockchain technology in a multi-pronged attack against fake news:

1. Identity on the Blockchain

Sapien will enable storage of identities on the blockchain for the purpose of identification. All marketplace sellers will be required to verify their identity prior to selling content. Media publishers and well-known users will also be able to verify their identity on the blockchain.

With identities on the blockchain, it will be harder for trolls to deceive users into believing that they are someone they are not. Further, Sapien users can always rest assured that their communities and tribes are verified and secure.

2. Reputation in Tribes

Reputation will be fundamental to combating fake news and trolls on the platform. Low reputation users will have significantly less influence in voting and evaluating content. Reputation is also specific to a given Tribe and helps identify a user's expertise across a wide range of subjects. Moreover, reputation will be a valuable asset in the marketplace to exchange goods and services. A reputed vendor or content creator has earned their SPN through consistent contributions, great customer service, or validation from other reputed individuals. This enables the creation of a reputation network that will consciously help our users distinguish the sources of their information, making them less vulnerable to fake news or incessant trolling.

3. Something-at-Stake Design

By allowing users to stake SPN tokens, we are able to align the interests of the Sapien platform and users. Users have a vested interest in creating quality content on the platform, or risk losing their staked SPN. With this "something-at-stake" design, trolls are discouraged from malicious behavior. Valuable contributions will fuel the growth of the platform and compensate users for their merits in the form of SPN rewards.

4. Machine Learning

Machine learning is a powerful tool that can be used to combat the spread of misinformation. We will use cutting-edge machine learning models to perform stance detection in order to determine whether headline claims are supported by evidence, specifically other articles posted on the Sapien platform and on the Internet. Using these tools, we will be able to produce a probability that a headline claim is false. This probability may be displayed to users to help inform their judgment and to encourage them to further scrutinize the sources of an article.

5. Wisdom of the Crowds

Undoubtedly, there will be users who attempt to manipulate the system for personal gain. In addition to freezing all funds and banning any users attempting to "game" the system, users will be able to flag fake or stolen content. The Sapien team will have minimum involvement in determining what material is protected by free speech. While illegal or stolen content will immediately result in a ban from Sapien, punishments for reposting or posting questionable material will ultimately rest in the hands of the Sapien community.

Crowdsourcing wisdom to distill the accuracy and quality of content has been shown to be an effective strategy for calibrating the likelihood of predictions and truths³³. We're excited to implement this powerful tool to improve Sapien's platform and fight fake news.

USE CASE II: UNIFIED MEDIA PORTAL

Problem

As advertisements masquerading as insightful articles have become rampant, traditional, quality journalism has struggled to survive. Many news sites have turned to paywalls, where users must pay to access articles. With so many diverse feeds of information at their disposal, the modern internet user may find it hard to justify paying a subscription to access a single source of news. SPN provides a unified solution, allowing users to access a wide range of quality content.

Solution

Our unified media portal will consolidate a diverse feed of content in one place for our users. Users can subscribe to quality content from media publications. Thanks to the Blockchain, users can pay publications directly using the SPN utility token with 0 transaction fees. Links on the platform will drive organic traffic back to the company's website.

1. Premium Content

The creator of a Tribe can set a reasonable price, either to access a single piece of content or monthly subscriptions. A Sapien user can subscribe to a creator's premium Tribe with the expectation that they will receive consistent quality content. With SPN, we are enabling direct transactions between users and content creators who believe their effort to create quality original content comes at an additional cost. Moreover, it would also be very simple for a multitude of services to emerge that cater to different interests. For example, services similar to Netflix could easily exist on the Sapien platform with à la carte show selection.

2. Subscription Service

The Sapien platform will be in a position to address the subscription service problem within the crypto community. As of now, there is not a platform that allows creators to sell their content to the community with subscriptions. Monthly and yearly fees are a huge part of the community, but to use utility tokens requires the creator to manually handle each transaction. Through the Sapien platform, creators can set up recurring payment plans for their members who can pay this fee using the SPN token. The subscription fee will be automatically charge to the consumer and be paid for via SPN in their Sapien wallet. This allows creators to solely focus on making premium content for their members.

3. Media Publications

Traditional media publishers like NY times have long struggled in being able to monetize their content using micropayments, primarily as a result of transaction fees with traditional modes of payment. Mobile applications have attempted to aggregate content from multiple publishers—often to the detriment of the publisher's digital revenue streams.

USE CASE III: TOKENIZING VIRTUAL GOODS

Problem

Although virtual goods clearly have real value, as shown by the huge annual sum spent on things such as in-app purchases and cosmetic enhancements in video games, the true value of these virtual items has remained nebulous. A marketplace where such virtual items can be exchanged for tokens more firmly cements the exchange value of these commodities.

The rapid expansion of the digital economy has created a burgeoning supply of virtual goods. Most of these virtual goods are present in isolated markets, and are therefore unable to be exchanged with other such goods. Virtual goods now represent a multi-billion-dollar industry annually, despite the severe limitations in this sector due to the seemingly unexchangeable nature of these goods. By creating a single market for virtual goods, we hope to dramatically increase the volume of transactions in this space, simultaneously providing value to both consumers and content creators. We believe that such a marketplace need not be restricted to common virtual goods such as those present in video games. In the modern world, information is truly the most valuable commodity and thus any quality content has a place on our marketplace, whether it be an article, video, or virtual item.

Solution

We will create a marketplace using the ERC-72127 protocol in which virtual goods can be exchanged along with physical goods, services, and premium content. Unique items can be represented with ERC721 non-fungible tokens. In addition to creating a marketplace for users to purchase virtual goods, we hope to create a platform allowing users to create and sell their own virtual items such as cosmetic enhancements or entirely new features on the Sapien platform. We believe that the extensible and decentralized nature of Blockchain applications will not only allow the community to influence the direction of the platform by voicing their opinions but will also allow users to contribute to the development of the application by creating self-contained features. In order to allow content creators to place their content on the Sapien platform, we will create an API, establishing all of the necessary infrastructure to allow content creators to sell their content. Content creators will be able to establish all relevant parameters, such as the price that they are willing to sell their content for, or whether they are willing to accept other offers for their content.



15 | PLATFORM FEATURES

How to Sign up

To combat manipulation, we require the following to open a new account:

- Full name
- Email
- Password
- Verified phone number
- Google Recaptcha v3

After getting verified, a user will receive a few SPN tokens that will be staked on their behalf.

Reputation

Trust is the foundation of social interaction. It enables individuals to construct and participate in complex institutions and coordinate effectively. Broadly speaking, reputation on Sapien attempts to capture the elusive notion of trust and apply it to a social network where interactions frequently occur between individuals from distinct social circles, cultures, and backgrounds. Because there are a variety of actions that users can perform on Sapien, there are a number of distinct applications of reputation.

Content Creation

When a user creates a public post on Sapien, other users can evaluate their post positively or negatively. By looking at the results of voting, we can determine how a post was received by the community and adjust the creator's post creation reputation accordingly. Because quality does not necessarily translate well between communities, we track of reputation scores separately for each community in which a user participates.

Content Curation

Curation reputation aims to gauge a user's skill in identifying and voting on quality content. While quality is subjective, good content typically is original, thoughtful, and well-presented.

Because it may be more difficult to identify quality content before it has been voted on by many users we can take a user's voting time into consideration when calculating their curation reputation. Because curation is composed of two actions (upvoting and downvoting) we can further refine our notion of curation reputation by creating a distinct reputation for upvoting and downvoting. This distinction is natural because it is easier to identify bad content than good (there are many more ways for a piece of content to be bad than good)

Influence

A user's influence is the weight of their vote when content is ranked. We initially considered assigning users equal voting weight, but there are several drawbacks to doing so. First, this method is vulnerable to a sybil attack where a user creates many accounts (sybils) and votes with all of them to manipulate and undermine the system. Second, this method fails to differentiate experts from new users and bad actors. Users are not equally skilled at evaluating content for quality; the weight of their vote should reflect this.

One alternative model weights vote impact based on a user's expertise. This method ensures the most informed voters have the most impact on content curation.

Democratized Autonomous Platform

The reputation score will be embedded into the Sapien Network. Thus, reputation can be extended outside of the Sapien ecosystem to any application utilizing

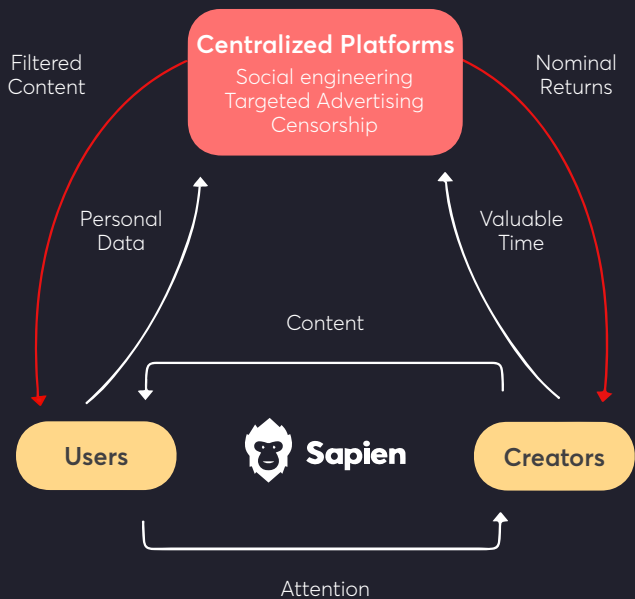
SPN. Reputation serves a critical role in establishing the Proof-of-Value protocol, promoting quality content and reducing the spread of fake news and trolling.

Rewards for Posting, Commenting, and Voting Rewards

We believe that users should be rewarded for creating quality content. In order to achieve this, we will award the majority of newly minted SPN to users who post, comment, and vote on the Sapien platform. In order to receive rewards for creating a post, comment, or vote, a user must first stake SPN on the platform. To create a post, comment, or vote without earning rewards, no staked SPN is required; in this case, all SPN generated will go towards the platform reserve or pools for charity. Post rewards will be distributed according to quality determined by reputation-weighted voting.

All newly minted SPN will be distributed to users making contributions on the Sapien platform and validators who verify transactions on the blockchain.

In order to incentivize the creation of quality content, SPN tokens will be distributed to both the creator of a post, and the users who upvoted the post. Most of the SPN tokens generated by a post



will be rewarded to the content creator and some amount will be distributed among the users who upvoted the post. As it is more difficult to identify a quality post when it has fewer upvotes, the SPN rewarded from voting will be proportional to the time at which the post is voted on.

Marketplace

The Sapien Marketplace leverages the reputation system to facilitate open and fair transactions and connect vendors to consumers. Reputation within the Marketplace reflects the quality of a vendor's product and service. User reputation is tied to quickness of payment and trustworthy transaction-making.

Reputation enhances the security of payments while spurring trust between consumers and vendors who would otherwise face uncertainty and risk in transacting. It also helps Sapien monitor and detect potentially fraudulent activity.

Integrating reputation into the Marketplace and the broader Sapien ecosystem creates a seamless digital identity that persists through all stages of the platform and transaction process. Because this identity is dynamic and reputation score is specific to certain platform actions and communities, Sapien users are accurately assessed and rewarded for however they choose to use the platform.

Voting Mechanisms

Posts can be voted on by staking a variable amount of SPN, up to a fixed limit. In the case that 0 SPN is staked, a vote will count towards visibility but not toward the payout pool or reputation. SPN can only be staked for voting for the duration of the reward window, which is set at one week. After the completion of the reward window, all payouts generated by the post will be distributed to users. After the reward window has passed, posts and comments can still be voted on and votes will count toward visibility but no longer contribute to the payout pool or reputation. The amount of staked SPN that can be used for posting, commenting, and voting is limited by a user's capacity, which is determined by their total amount of staked SPN.



How We Handle Voting Manipulation

To prevent manipulation by malicious users, only a certain fixed amount of SPN will be usable at any one time to stake on posts for voting. Posts will have a window during which they may be voted on and, after this window expires, all SPN tokens staked during voting will be released and restakeable.

The inclusion of negative-voting will make voting manipulation more difficult, since highly reputable users or a large collection of users can cancel out the votes of a colluding group. In addition, attempted vote manipulation will be

transparent to the community, because posts that gain a large number of votes quickly will be the most visible on the platform.

Posts that have been flagged by a significant portion of the community will have their staked SPN temporarily frozen until the community decides whether collusion has taken place. If the user is found guilty of manipulation, the original staked SPN will be transferred to the platform reserve. Repeated attempts at collusion or manipulation will result in freezing all of a user's SPN tokens.

Democratized Autonomous Platform (DAP) Implementation

Proposal System

SPN token holders will be able to participate in DAP voting to help influence the company roadmap and organization. It is important to note that SPN tokens do not correspond to equity in the company. Our goal is to simply create the infrastructure to support a democratic platform that can eventually move towards self-governance.

Our threat model will employ the following three strategies to ensure equal opportunity for DAP voters:

Mandatory Staking

Only SPN tokens that are staked for at least six months will count towards DAP voting. When staked through the smart contract, tokens cannot be transferred. A token holder who wishes to transfer SPN

tokens must un stake them from smart contract in order to do so. A token holder will not be able to vote on DAP proposals until they stake their SPN.

Variable Stake Limits

Proposal creators will be able to select what percentage of staked SPN voters will be able to vote with. The higher the percentage, the more powerful the proposal and higher it becomes on the core team's priority list. Lower percentage limits will increase each vote's significance. Thus, each proposal creator should carefully weigh execution speed and voter voice, depending on the nature of the proposal.

Tribe Autonomy

The reputation system will ultimately enable democratic management of tribes without a centralized authority. Users will be able to make proposals within a tribe and evaluate the proposals of other users. The protocol will ultimately enable tribes to self-moderate and enact proposals democratically to determine the future direction of a tribe.

Tribunals

Users will be able to flag other users for inappropriate behavior within a tribe, creating a tribunal. During this process, a random subset of users of a tribe will be selected as validators, and will need to vote to determine whether the flagged user has acted inappropriately. The selected users will be notified and the next time they open the Sapien platform, they will be asked to participate in the tribunal. Once consensus is reached, votes will be weighted by reputation to ensure that trolls are adequately punished for acting against the values of a community.

16 | TOKEN MECHANICS

Staking SPN

The Sapien Staking Contract is deployed on the Ethereum blockchain. This contract is similar to the Sapien Token Contract, except it keeps track of a user's Staked Token balance. Staked Token balances are tied directly to the address that staked them, and can only be withdrawn to that address. This provides a layer of security for the person who stakes. Tokens in the staking contract are unlocked over a period of one year, but remain staked until a user decides to withdraw them.

Unstaking SPN

Staked SPN progressively unlocks over the course of a year to ensure stability within the Sapien Network. Once unstaked tokens are available, a user has to simply go to their profile on Sapien to request unstake. Withdrawal requests will be reviewed within 48 hours to ensure that the user isn't a bot or trying to exit the Network after posting inappropriate content.

17 | BUILDING A WEB3 USER EXPERIENCE

Widespread adoption of Web3 technologies can only occur if user experience has been carefully considered and integrated into their implementation. For blockchain, developers cannot assume that every user has a thorough understanding of public-key cryptography or managing private keys. And pushing new users to manage their own keys leaves them vulnerable to phishing and other attacks.

Instead, we believe it is the responsibility of the decentralized application to progressively onboard users into the new Web3 paradigm by providing the resources, education, and motivations for a smooth transition. The process of decentralization is a journey, not some well-defined state.

Simple

To crack the mainstream market, Sapien will provide a simplified user experience that puts the magic of the blockchain to good use in onboarding. This would be catered to users that are new to crypto or would like the convenience of a centralized service. Novice users can opt for a managed wallet that automatically handles SPN token management with a usability similar to that of Coinbase. There may be wallet fees associated with the simplified experience as there would be for additional operating, security, and support costs for the company.

Advanced

Users familiar with private keys can take full responsibility over their own keys on Sapien. Thus, the advanced user can experience Sapien without needing to trust centralized authorities. By maximizing transparency (and the seams of the underlying infrastructure), advanced users can verify any transactions or computations on the blockchain if desired. There will be no fees associated with the advanced user experience aside from network gas fees.

By providing simple and advanced user experience options, Sapien will offer flexible onboarding and customizable use. This allows Sapien to onboard and scale quickly while retaining its values of transparency and customizability.

18 | LEADERSHIP

Sapien is an ambitious vision. It will be developed by experienced engineers and guided by knowledgeable advisors who are eager to make a social utility token a reality.



Ankit Bhatia
Co-founder & CEO

Ankit is a tech entrepreneur who enjoys bringing impactful ideas to life. He graduated with a degree in Electrical Engineering and Computer Science from UC Berkeley and now excels at deriving business value from complex technical ideas. He is passionately committed to building the privacy-focused, democratized Web3

infrastructure of the future using distributed technologies like the Blockchain. Programmer, writer, tokenomics strategist, advisor, crypto enthusiast, and investor since 2013. YCombinator SUS'17 graduate.



Robert Giometti
Co-founder & CPO

Robert studied Mathematics and Electrical Engineering & Computer Science at UC Berkeley. During his undergraduate career, Rob spearheaded and developed many of the features, algorithms, and innovations that exist in Sapien today.

Rob is a brilliant theorist who understands how modern technologies will transform future societies.



Aurelien Nicolas - CTO

Aurélien is a product security expert, with experience in web, distributed systems, entrepreneurship, and cryptography. He also is a smart contract auditor

and white hat hacker at organizations such as Google, Oraclize, and Gitlab. Aurélien is passionate about researching applications of cryptography and computation integrity.



Matias Dorta - CMO

Matias is an experienced digital marketer focused on building brands in evolving industries. In 2014, he founded 41Collective LLC, an independent marketing

firm with quality clients in the blockchain, music, and eCommerce sectors. Matias is a crypto enthusiast and has helped build many successful brands in this sector.



Lynn Connolly - CCO

Lynn has global expertise in compliance and risk management. She is a board member for SolarCoin Foundation, and is a compliance advisor to several ICOs. She previously advised Lykke Corporation, a cryptocurrency exchange, on compliance, risk management, ALM, trading strategies, and ICO token structuring & due diligence. Lynn has over 30 years in financial services, working for firms such as Merrill Lynch, JP Morgan Chase, and Deloitte. She has

provided advisory services to global financial institutions, asset managers, and funds in compliance, risk management, regulatory requirements, and valuation. She co-authored the whitepaper "The Missing Link: How a Distributed Ledger System Can Support Global Climate Action", and speaks at industry events. Lynn has a Series 65 License, Uniform Investment Advisor Law Examination, and holds a B.S. in Economics from The Wharton School, University of Pennsylvania.



Benjamin Ruhe - Senior Product Manager

Benjamin is a product thinking digital professional with 18 years of experience helping businesses with Product Management, Agile Project

Management, Product Design. He holds an MBA from Macquarie Graduate School of Management.



Ethan Escareño Rosano - Lead Developer

Ethan is a passionate software engineer with a degree in Network and Telecommunications. He has been working in the IT sector for 7 years. As lead developer

he oversees the Sapien Platform dev team, ensuring best practices are followed. Ethan spends most of his time between Twitter / Github / Codewara and Medium.

19 | ADVISORS



Dr. Mihaela Ulieru - Blockchain Expert

Professor Mihaela Ulieru, PhD is an expert in distributed intelligent systems working with many governments and organizations towards a healthier, safer, more sustainable and innovation-driven world. She founded two research labs leading several global large-scale projects in collaboration with international businesses such as Rockwell Automation, Daimler-Chrysler, SAP, Fanuc, BHP Billiton, Thales, NORTEL as well as government, academia and nonprofit

leaders. She was appointed to numerous boards among which the Science Councils of Singapore, Canada and European Commission and recently to the Global Agenda Council of the World Economic Forum where she championed Blockchain as one of the Top 10 technologies of 2016. She advises several startups at the nexus of Blockchain and Artificial Intelligence, among which: LifeLink.com, MyBit.io, and SocialCash.io.



Christian Ferri - Blockchain Expert

Christian Ferri has been in the crypto space since its early days in 2010 and built a solid network of early adopter, influencers, experts, and visionaries over the years. He founded BlockOne Ventures in 2014, one of the first blockchain agencies to work on crypto related projects. Today the agency has helped companies like

Bancor, Token Card and many others to successfully raise funds through ICOs. In addition, BlockOne Ventures delivers corporate training on Blockchain to Fortune 500, organizes a crypto event series in collaboration with Draper and is managing a crypto fund for selected high-net-worth investors.



Adnan Javed - Legal & Blockchain Advisor

Adnan is a qualified Lawyer and Engineer. He has worked in the IT/Telecommunications space with international businesses such as Ericsson and Nokia for the past 10 years. Three years ago he discovered Bitcoin, which led him to explore Blockchain applications and use cases. He has worked on numerous Blockchain projects, including large scale

bespoke Blockchain projects across internet of things, finance and payments sectors. He is an advisor to multiple Blockchain startups including ZenCash and ETHLend. He has a keen interest in how Blockchain technology will advance in shaping all industry sectors from an adoption, regulatory and policy perspective.



Gregory Berkin - Business Strategy

Gregory Berkin is the Managing Director of Concours Ventures, a Silicon Valley boutique angel group focused on next generation geospatial, virtual, augmented and mixed reality (VR/AR/MR) applications for mobile devices. Greg is serial entrepreneur who founded several successful startups in Silicon Valley and New York. He has been an Apple software developer for over 30 years

having founded one of the first educational software development and publishing firms for the Apple Macintosh Computer in 1984. With a computer science degree from Potsdam and an MBA from Duke University, Greg mentors, consults and advises over a dozen Silicon Valley startups in early-stage growth, strategy, investment, IP, and development in all areas of high technology.



Latif Nathani - Business & Marketing

Latif was most recently the CEO of eBay India. He grew the business from under \$200M GMV in 2013 to nearly \$500M GMV in 2016 and 5M+ customers. He exited with the sale of eBay India to Flipkart. Previously Latif co-founded eMemories.com (one of the first online picture sharing services) and 2 enterprise businesses at

Microsoft (Systems Center and Speech Server). He also led global product marketing at Symantec and named/launched Norton 360. Latif has 26 years of technology industry experience, including 15 years at Microsoft.



Dr. Po Chi Wu, Blockchain & Fintech Expert

Dr. Po Chi Wu is a Senior Partner at Futurelab Consulting, an Industry Fellow & Visiting Professor at the Sutardja Center for Entrepreneurship & Technology at UC Berkeley, and Adjunct Professor in the School of Business and Management at The Hong Kong University of Science & Technology. His teaching of innovation and entrepreneurship (blockchain) is considered radical and inspirational because he emphasizes experiential learning, self-awareness,

borderless mentoring, and the entrepreneurial mindset. A successful international venture capitalist who has worked with hundreds of entrepreneurs, Dr. Wu brings a unique perspective and context of more than 30 years of experience and insight. He earned his Ph.D in Biochemistry & Molecular Biology from Princeton University. He is also a co-author of "Agile Innovation" (Wiley & Sons, 2014) and a frequent keynote speaker, mentor and judge for activities in the startup ecosystem.

20 | KEY PARTNERSHIPS



What do DAOstack do?

DAOstack includes various infrastructure and product layers that enable collaborative decision-making at scale about anything: the value of work, collective asset management, or even the curation of content.

Announced	February 6, 2018
Location	Israel
Market Cap	USD \$4.3MM
Background	DAOstack is an operational stack for DAOs, providing the governance and economic framework necessary for people to self-organize around any shared goal, value or interest. It also contains protocols for conducting proposals and prediction markets.

Why did we partner together and what benefits does it bring to Sapien?

DAOstack is Sapien's framework of choice to engineer their community consensus system, and specifically the Proof-of-Value protocol, to distinguish and reward valuable content while preventing the proliferation of fake news.

In addition, they will use DAOstack to build their Democratized Autonomous Platform (DAP), an innovative system of self-governance for Tribes on Sapien.

It will help diminish the influence of trolls and the spread of fake news, enabling the users within a Tribe to self-moderate and determine the direction of their community. With the DAOstack framework, Sapien can help promote autonomy and empower users to build and maintain the community they want to be included within.



Announced	February 9, 2018
Location	California, USA
Market Cap	USD \$1.3MM
Background	BitClave's decentralized search engine is a platform that enables direct customer-to-business interactions with no need for intermediaries, allowing users to control their data securely over the blockchain. With BitClave, customers get paid for their search requests, businesses make money on personalized offers, and all data is private and secured.

Why did we partner together and what benefits does it bring to Sapien?

Users will be able to share their search data with Sapien's platform and receive a portion of the advertisement revenue generated in SPN tokens. A user will be able to share his social data to BitClave's platform and be rewarded CAT tokens when they receive offers from businesses. BitClave and Sapien fundamentally believe that users should be in complete control of their data that is broadcasted over the internet. If users opt-in to distribute their information, they should receive a financial incentive for doing so.

As a result of BitClave's underlying technology, a user will be able to access and modify exactly what information is being monetized. This partnership will allow Sapien to integrate BitClave's search widget into Sapien's social platform. BitClave users who are also Sapien users will be able to perform searches directly from Sapien's platform and get rewards for their searches.





What does the UC Berkeley Blockchain Lab do?

The Blockchain Lab is working to establish new emerging sectors through applied research into the following problems and projects:

- Creation of truly mobile blockchain applications
- Scalability of the blockchain itself in terms of both number of nodes and transaction speed
- Ability for broader smart contract creation and execution
- Policy and regulatory issues in blockchain

Why did we partner together and what benefits does it bring to Sapien?

The Blockchain Lab at SCET has a strong network of entrepreneurs and a solid basis for fostering innovation. This partnership will give the Sapien team access to talent, resources, and the professors at SCET conducting research at the forefront of blockchain technology. The lab will assist Sapien throughout their development and growth of the platform.

Sapien also has partnered with SCET to engage in informative lectures and collaboration opportunities with students, spreading the Sapien brand and increasing platform recognition among tech-savvy audiences.

Announced	February 20, 2018
Location	California, USA
Market Cap	N/A
Background	Blockchain Lab is a platform for students to gain real-world experience working with Blockchain technology.



What does Civic do?

Civic is spearheading the development of an ecosystem that is designed to facilitate on-demand, secure, and low-cost access to identity-verification services via the blockchain. Civic's mission is to provide people with a secure digital identity that they can use to interact privately and securely with the world.

Announced	June 15, 2018
Location	New York, USA
Market Cap	USD \$63.6 MM
Background	Civic is a visionary blockchain identity-verification technology that allows consumers to authorize the use of their identities in real time.

Why did we partner together and what benefits does it bring to Sapien?

Civic will help Sapien get closer to its mission of creating a democratized, Web3 social platform that will fight fake news, reward content creators, and allow users to partake in ad revenue sharing. Implementing Civic's technology on the

Sapien platform will enhance security by running critical Know-Your-Customer (KYC) and Anti-Money- Laundering (AML) processes and checks when users join the Sapien platform.



21 | COMPETITIVE ANALYSIS: STEEMIT

Steemit is a social news platform that rewards content curators and creators for posting, commenting, and voting. While Sapien and Steemit both share a common goal of rewarding users via a decentralized Blockchain, the two differ significantly in philosophy and implementation.

Technology

Steemit is built on an independent and controversial blockchain called Steem. Steem developers unfairly “stealth” mined a large majority of Steem early on in the site’s development under the pretense of equal opportunity²⁸. Sapien opts for Ethereum because of its strong community, technology, maturity, and transparency. See Ankit Bhatia’s detailed analysis of why he believes in Ethereum here³⁵.

With the second biggest coin market cap and a more organic developer ecosystem, Ethereum has excited many with its potential to surpass Bitcoin. For these reasons, SPN was built as an ERC20 token on the Ethereum network.

We have not just decided to throw the blockchain haphazardly onto the platform—it is an absolutely essential innovation that will enable Sapien to utilize an immutable ledger capable of executing smart contracts and generating token payouts for our users.

For more detail on our token payouts and use of distributed ledger technology, please refer to our Yellow Paper (coming soon!).

Platform Design

Steemit exhibits tremendous disparity in the distribution of platform power. Only individuals who have used the platform since its inception (also known as “whales”) have the ability to earn any substantial awards and, as such, possess a disproportionate amount of Steem power.

This distribution enables users to selectively pick which posts become “winners” and “losers.” It is publically viewable that the top 247 accounts, most of which are held by developers and their friends, hold 87.5% of the Steem power on Steemit³¹. For a site with more than 150,000 registered users, we believe that this level of inequality is infeasible and unsustainable.

Sapien has learned from the innovations and shortcomings of Steemit to create a truly democratized social news platform. For instance, Steemit’s idea of implementing decaying and regenerative voting power was notable, as was its implementation of Zipf’s Law to fairly reward long-tail posts.

To mitigate any possible disparity within Sapien, the largest SPN holder will have the exact same voting power as a newly registered user. To minimize manipulation, voting power will instead be acquired as a function of how much reputation a user has earned through quality contributions to the platform.

Barriers to Entry

For novices, Sapien will automatically manage wallets, addresses, and two-factor authentication with a usability similar to that of Coinbase. Advanced users will have direct and full access to their wallet, along with usage metrics and customization features. By differentiating these two target user types, the Sapien platform and the SPN token will be in the best position for adoption by the most number of people.

22 | RISK ANALYSIS

Bots

Due to the incentivized nature of the Sapien platform, we believe that we are a potential target for botting. In order to reduce the risk of such manipulation, we will employ several precautionary measures. Users will be required to pass a captcha in order to create their account and post or comment after long periods of inactivity. In addition, users must verify either a phone number or an email address associated with their account. Accounts suspected of using bots for a malicious purpose will have their SPN tokens seized and deleted promptly.

Sybil Attacks

All peer-to-peer networks are susceptible to the problem of adversaries working counter to honest participants. For cryptocurrencies, one of the goals of the participants in the network is to reach a consensus via a majority vote. This means that any adversary with the resources to allocate many IP addresses could influence the consensus of the entire network. One of Bitcoin's key innovations was the use of Proof-of-Work (PoW) as a way of "determining representation in majority decision making" through computation. PoW requires nodes to solve a cryptographic problem, which is CPU-intensive to calculate, but easy for other participants to verify. As a consequence, an attacker wishing to alter the history of the Blockchain is required to solve the PoW for their block and every subsequent block that came after. As long as the number of honest nodes is greater than the number of adversary nodes, it is probabilistically infeasible for this event to occur.

Sapien will eventually migrate to a mechanism similar to the proposed Casper protocol, which is a deposit + penalty PoS. In this scheme, validators will be punished for contradicting themselves.

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