



SOCIAL CAPITAL

**A FULLY DECENTRALIZED NETWORKING
ECOSYSTEM THAT UNITES COMMUNITIES**

EXECUTIVE SUMMARY

Relationships are crucial aspects of our lives. Recently, we have seen the internet dramatically changing the pattern of dating and human interaction. Now, more than ever, people can nurture relationships via the click of a button because the internet has gone through a complete cycle and is now readily available on smartphones.

Despite the internet's potentials in transforming the dating scene, it may make relationships superficial, insecure, and unfair. The main problem facing conventional dating applications is a lack of communication and meaningful connections. While there are fewer chances that users could lie about certain aspects of their identities in the real world, this is not so for online dating applications. There are many incidences of dishonesty and misrepresentations that make these applications insecure and unfair.

The current dating platforms such as Tinder and Bumble hold a monopoly in the industry, and as listed companies, the companies cannot solve the communication problems. This is because solving the problem would mean losing a substantial revenue share due owing to a decline in user retention rates.

At Social Capital, we believe the solutions to these problems lie with nurturing positive relationships based on trust, respect, kindness and reciprocity. In this regard, the Social Capital supports structures that encourage pro-social actions while discouraging exploitative behaviors. We are leveraging these concepts to implement Mollie—a Blockchain-powered online dating application that eliminates dishonesty and scams in the online dating landscape.

Mollie will incorporate artificial intelligence (AI) chatbots to facilitate communication through ice-breaking games, personality probing quizzes, etc. Besides AI chatbots, we will also leverage augmented reality (AR) capabilities to provide a creative outlet for users to express themselves. Mollies' ecosystem will be fueled by \$POP tokens—Binance Smart Chain (BSC)-based, BEP-20 that incentivizes positive actions while penalizing deceptive behaviors such as soliciting messages in the Social Capital ecosystem.

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I.O BACKGROUND

Perhaps it might be difficult to imagine or recall, but there was once a time when online dating was a strange concept—even frowned upon. Today, however, online dating has become universally accepted, with millennials and Gen Z leading the charge in transforming the industry.

According to a survey Statista conducted in January 2018, 11% of the respondents aged 18 and 39 said they had met their current partner through online dating applications. The same report shows the number of individuals using online dating services reaching 733.5 million by 2025.

A similar study by Pew Research Center shows that nearly 30% of U.S. adults have used an internet dating application, with a majority of them saying their overall experience was positive². These statistics reveal one thing: dating applications are here to stay.

This is especially true considering the number of dating applications that have since been launched since the dawn of the digital revolution. And the market size for dating applications is huge. MarketWatch.com estimates the global market size for dating platforms to reach US\$ 12.1 billion by 2025³. This denotes a CAGR (compound annual growth rate) of 8.2% during the forecast period.

The growth in market size for these platforms is largely due to proliferating smartphones and internet connectivity. Statista's latest statistics show over 3.8 billion smartphone users globally as of this writing, which means nearly 50% of the world's population owns a smartphone⁴. This figure is high considering that there were only 2.5 billion smartphone users as of 2016.

With the prices of these devices declining, the number is expected to even grow at higher rates, driving the market size for online dating platforms. Similarly, worldwide internet access is rapidly increasing, with DataReportal estimating that nearly 6 out of 10 people use the internet worldwide⁵.

² MONICA et al., "The Virtues and Downsides of Online Dating," Pew Research Center: Internet, Science & Tech (blog), February 6, 2020, <https://www.pewresearch.org/internet/2020/02/06/the-virtues-and-downsides-of-online-dating/>.

³ "Dating Services - Worldwide | Statista Market Forecast," Statista, accessed August 25, 2021, <https://www.statista.com/outlook/dmo/eservices/dating-services/worldwide>.

⁴ "Smartphone Users 2026," Statista, accessed August 18, 2021, <https://www.statista.com/statistics/330695/number-of-smartphone-users-worldwide/>.

⁵ "60% of the World's Population Is Now Online — DataReportal – Global Digital Insights," accessed August 18, 2021, <https://datareportal.com/reports/6-in-10-people-around-the-world-now-use-the-internet>.

Besides, young population in developing countries such as India, Thailand, Vietnam, and Africa coupled with increased levels of education will also expand the dating services industry. According to Statista, nearly 65% of the people in these regions constitute a young population⁶. And with average literacy rising from nearly 60% to 71%, the market prospects for online dating services are bright.

COVID-19 measures such as lockdowns and social distancing directives have also increased loneliness, leaving users with online dating as the only mechanism for seeking companionships⁷. The lack of cure for COVID-19 coupled with the rising adult population and proliferating smartphones and internet access will likely accelerate the overall market for online dating platforms.



⁶ "World Population by Age and Region 2021," Statista, accessed August 30, 2021, <https://www.statista.com/statistics/265759/world-population-by-age-and-region/>.

⁷ Sara Aridi, "Has the Pandemic Changed Dating Forever?," The New York Times, May 7, 2021, sec. Well, <https://www.nytimes.com/2021/05/07/well/covid-dating-advice.html>.

I.I CURRENT ONLINE DATING PLATFORMS

Current online dating platforms onboard users by allowing them to create a profile and uploading personal information such as gender, age, sexual orientation, appearance, and even location. Virtually all platforms encourage users to upload photos or videos to their profile to provide perfect match-making.

Once you create a profile, you can view the profiles of other users via visible profile information and decide whether you want to initiate contact or not. To match users with their companionships, these platforms use the swipe-to-match model where an individual swipes to either like or dislike posted profiles.

Once you have been “matched” you can start exchanging messages. Besides profiles and user data, most dating services have in-app messaging systems that provide online chats, telephone chats, webcasts, and message boards.

Granted, these services have revolutionized the dating scene. For the first time, these platforms have changed the way we look for love (and lust) in completely novel ways, helping to break down the geographical boundaries that existed before the internet was unveiled. However, despite their novelty, these platforms have inherent structural weaknesses, as explained in the next section.

1.2 MOTIVATION

Current online dating services have structural weaknesses such as:

- Lack of communication
- Privacy concerns
- Dishonesty and misrepresentations
- Security concerns
- Lack of a monetization framework

1.2.1 LACK OF COMMUNICATION

In an era defined by constant connectivity, users want to access an open platform that fosters communications as a way to eliminate bad relationships. However, mainstream online dating platforms like Tinder and Bumble are listed companies with a monopoly over the dating landscape.

Consequently, their internal processes tend to be more siloed, political, and bureaucratic. This ends up stifling open communication and progress on most of the platforms. If these platforms were to enhance their communication, their user retention would drop, and shareholders will intervene.

A recent study has found that nearly 21% of female matches send a message, while a paltry 7% of male matches send a message on Tinder⁸. These statistics point to a sector that is bedeviled with communication problems such as low incentives to initiate the first message.

⁸ Gareth Tyson et al., "A First Look at User Activity on Tinder," in 2016 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM) (IEEE, 2016), 461–66.

1.2.2 PRIVACY CONCERNS

The business model for most traditional internet dating platforms relies on data that users provide to match members perfectly. They also use personal data to provide advertising services, which is the primary source of revenue on most platforms.

In this regard, whatever data a user explicitly shares on the service, the platform will exclusively own it because these services are largely centralized. This data can be a user's sexual orientation, gender, political affiliation, or religion, depending on the platform.

Besides this data, most internet platforms also track users' activity to connect them to their favorite platforms. Because the platforms are mainly centralized and have exclusive ownership of personal data, they can share them with third parties without users' consent.

For example, an internet dating platform can track URLs you visit while accessing its services and use the information to gather analytics and target advertisements at you without your express consent. The company could also sell this data to a third party to generate revenue.

The Cambridge Analytica scandal, where Facebook shared data of its 50 million users with Cambridge Analytica to affect the presidential election in 2016 in the U.S., is an example of how a centralized company can interfere with user privacy⁹. Bumble is also another platform that exposed user data for nearly 100 million users in 2020¹⁰.

⁹ "Cambridge Analytica and Facebook: The Scandal and the Fallout So Far - The New York Times," accessed June 6, 2021, <https://www.nytimes.com/2018/04/04/us/politics/cambridge-analytica-scandal-fallout.html>.

¹⁰ "Bumble Security Flaw Left Users' Location Data, Profile Pictures Exposed for over Six Months- Technology News, Firstpost," Tech2, 08:43:43 +05:30, <https://www.firstpost.com/tech/news-analysis/bumble-security-flaw-left-users-location-data-profile-pictures-exposed-for-over-six-months-9021061.html>.

1.2.3 DISHONESTY AND MISREPRESENTATIONS

There are many success stories showcasing how people have used current online dating platforms to find love and companionships. However, there are also countless online dating scams—also called romance frauds or romance scams.

These scams often take place when someone believes that they have established the perfect match via an internet dating site—but the person they are communicating to is, in fact, a fraudster using a misrepresented profile. In this case, the fraudster grooms the other person to win their trust over time—ultimately to obtain their personal information or steal their identities.

To underscore the seriousness of the problem, consider the following facts, from Pew Research findings¹¹:

- ▶ Nearly 70% of online daters believe that users on internet dating platforms lie to try to appear more desirable¹². Also, the majority of U.S. adults (45%) who have used online dating platforms have left feeling frustrated compared to 28% that felt hopeful.
- ▶ Nearly 6 in 10 female users aged between 18 to 34 say that a stalker on an internet dating network continued to contact them even after saying they were not interested. An almost similar number (57%) say anonymous users sent them sexually explicit images they did not ask for.

According to the U.S. Federal Trade Commission (FTC), there were over 52,593 complaints reported in 2020 as a result of romance scams¹³. The losses incurred are also huge, with FTC reporting an upward of US\$ 300 million over the same time.

¹¹ MONICA et al., “The Virtues and Downsides of Online Dating.”

¹² MONICA et al.

¹³ “Romance Scams Take Record Dollars in 2020,” Federal Trade Commission, February 10, 2021,

<https://www.ftc.gov/news-events/blogs/data-spotlight/2021/02/romance-scams-take-record-dollars-2020>.

1.2.4 SECURITY CONCERNS

One main reason why Blockchain is popular with various use cases is its inherent security structures. As a peer-to-peer (P2P) and decentralized network, Blockchain does not rely on centralized entities to update and manage the ledger. Instead, it relies on a decentralized consensus protocol where all the nodes update and manage the ledger.

In contrast, centralized networks rely on a centralized entity to manage the ledger. For example, a malicious IT administrator who has credentials can easily access the database and alter its records, interfering with its integrity in the process. Also, centralized networks have a single point of failure, and hackers can use different techniques to compromise the ledger.

We believe that a robust Blockchain with the required number of users can make an internet dating service truly decentralized, hence more secure. Social Capital intends to use a robust Blockchain and a wallet application to ensure the security of users' data.

1.2.5 LACK OF MONETIZATION FRAMEWORK

Centralized platforms such as Facebook and Google rake in millions of dollars from advertising revenue while users get none from their data. For example, Facebook generated a whopping US\$ 86 billion in 2020, mainly from advertising up from US\$70.7 billion in 2019¹⁴.

At the time, the social media giant did not have a compensation model for its creators, meaning users received nothing for their data. Facebook only introduced a monetization framework in March 2021¹⁵, which again is unfair because the algorithm it uses is centralized and proprietary.

¹⁴ "Facebook: Annual Revenue," Statista, accessed June 6, 2021, <https://www.statista.com/statistics/268604/annual-revenue-of-facebook/>.

¹⁵ "Facebook Adds New Monetization Options for Creators, Including Ads in Short Video Clips," Social Media Today, accessed August 18, 2021, <https://www.socialmediatoday.com/news/facebook-adds-new-monetization-options-for-creators-including-ads-in-short/596570/>.

According to SocialMediaExaminer, 3,500 ad impressions with a price per 1,000 impressions (CPM) can only generate US\$ 8.75 for a content creator on Facebook¹⁶. Some platforms, such as Twitter, do not reward their creators at all. For example, despite Barack Obama's tweet generating more views in 2017 on Twitter, the former U.S. president did not receive a penny for his effort¹⁷.

1.3 BRIDGING THE GAP

Traditional online dating platforms provide essential services with no positive outcomes due to inherently flawed communication systems. Besides disregarding user privacies, traditional internet dating platforms are prone to dishonesty and misrepresentations and are less secure.

These problems are prevalent because these platforms are largely centralized and monolithic. For example, Tinder—one of the most successful internet dating sites—has over 6 million users with over 55 billion matches.

Tinder is hugely successful because it has a monopoly of users. Despite this monopoly, the platform has numerous issues. For example, one study found that nearly 42% of females pointed out frustration as the main reason they were uninstalling Tinder while 14% said they felt bored¹⁸.

At Social Capital, we believe the solution to these problems rests with a decentralized internet dating platform that encrypts data at rest. When users have the keys to encrypt and decrypt their own data, they have complete control over their information. As such, they can easily grant or revoke access to their data to third parties.

Blockchain also enforces security in such an ecosystem because it leverages a decentralized consensus protocol to validate and store transactions on the ledger. And with a decentralized consensus framework, users get incentivized for their activities on the network. Such an environment would also ensure that the content shared is authentic.

¹⁶ by, "How to Monetize Your Facebook Video With Facebook Ad Breaks: Social Media Examiner," Social Media Examiner | Social Media Marketing (blog), accessed June 6, 2021, <https://www.socialmediaexaminer.com/how-to-monetize-facebook-video-facebook-ad-breaks/>.

¹⁷ "Obama's Charlottesville Tweet Is Most Liked in Twitter History – CNNPolitics," accessed June 6, 2021, <https://edition.cnn.com/2017/08/15/politics/obamas-charlottesville-tweet/index.html>.

¹⁸ Milena Ribeiro Lopes and Carl Vogel, "Women's Perspective on Using Tinder: A User Study of Gender Dynamics in a Mobile Device Application," in Proceedings of the 35th ACM International Conference on the Design of Communication, 2017, 1–10.

1.4 VISION

Our focus is to facilitate meaningful relationships via an open and transparent ecosystem. We will push forward this goal via the following tasks:

1. Granting complete ownership of data to users.

Unlike centralized online data platforms that have full custody of users' data, Mollie is completely decentralized, and users have the freedom to decide how they would like their data accessed and used. For example, they can get paid for sharing data with companies or interests they want.

2. Incentivizing users who participate in the network.

We will reward users via \$POP tokens when they undertake gamification actions such as daily logins, successful matches, referrals, play match-markers, etc. Besides gamification activities, the platform will also incentivize other actions such as staking and farming.

3 Eliminating dishonesty and misrepresentations via an open and verifiable system.

All the identities on Mollie will possess decentralized identifiers (IDs) that are unique and persistent. Because decentralized IDs are independent of centralized registries, user profiles will be authentic.

4. Rewarding authentic users and penalizing deceptive entities.

Our platform leverages sophisticated algorithms that makes use of the reliability and immutability of Blockchain to ensure authentic users get rewarded while bad actors get punished.

5. Achieving a foolproof ecosystem.

We have conceived Mollie as a Blockchain-based AI trust framework that ensures the ecosystem is foolproof.

1.5 ADVANCED TRUST FRAMEWORK

Current internet dating platforms such as Tinder and Bumble rely on AI and the existing internet architecture to offer their services. While the internet's centralization model has served these companies better to some extent, there are concerns about its future with regard to transparency and trust.

In the past, AI has been associated with successfully implementing systems such as speech recognition, image recognition, and match-making. In the case of match-making, conventional online dating platforms are increasingly using AI to identify common facial features in the user profiles when users swipe their dating types.

Despite this novelty, AI algorithms are still modeled along with the current architecture of the internet: centralization. Because of centralization, the AI algorithms are opaque and prone to hacks. As a decentralized ledger providing transparency, immutable storage of data, and auditability, Blockchain helps create accuracies in the AI models.

It ensures honest users get incentivized in the form of tokens. Ideally, Blockchain can enforce auditability (that is lacking in centralized platforms) and create a completely trustless system where nodes act honestly to enhance the trustworthiness of online dating platforms.

Our dating platform leverages an advanced trust model where three components evaluate the trust relationship¹⁹:

- Reputation of the trustee $R(B)$
- Experience of the trustor towards the trustee $E(A,B)$
- Knowledge of the trustor towards the trustee

The trust relationship T between a Trustor A and a Trustee B is composite function of R and E such that

$$T(A,B) = \omega_1 R(B) + \omega_2 E(A,B), \omega_1 + \omega_2 = 1,$$

where ω_1 and ω_2 are weight factors that must add to 1 to normalise the value of T . For additional details on the mechanisms behind the functions $E(A,B)$ and $R(B)$.

¹⁹ Nguyen Truong et al., "A Blockchain-Based Trust System for Decentralised Applications: When Trustless Needs Trust," Future Generation Computer Systems, 2021; Nguyen B. Truong et al., "From Personal Experience to Global Reputation for Trust Evaluation in the Social Internet of Things," in GLOBECOM 2017-2017 IEEE Global Communications Conference (IEEE, 2017), 1-7.

In a decentralized applications (DApps) scenario, users have limited options to obtain off-chain (data recorded outside the Blockchain) information necessary to evaluate knowledge and experience. This is because users' identities are often pseudonymized and challenging to link to the outside world.

Our platform will instead leverage transactions that will be recorded on the Blockchain. Because these transactions are permanent, our platform system can use them to generate reputation and experience evaluations. When a transaction occurs between two users on the platform, the system allows each entity to provide feedback towards its counterpart.

This creates and updates the experience relationship between two parties. Consequently, the trust system maintains the Experience network, which is publicly accessible on-chain and anonymously updated via open smart contracts whenever an entity provides feedback.

The trust framework protects users from the following potential threats:

- **Self-promoting attacks.**
An attack where a user exits the platform with a bad reputation and enters afresh with a new account.

- **Whitewashing.**
An attack where a bad actor creates negative feedback to damage the reputation of other identities.

- **Slandering.**
An attack where a malicious actor combines multiple strategies to form a coordinated attack on the platform.

- **Orchestrated.**
An attack where an adversary attempts to overload the system.

- **Denial of service (DoS).**
An attack where an actor encourages contributors by giving them more benefit over consumers.

2.0 BLOCKCHAIN AND ONLINE DATING MARKETPLACES

Mollie is a decentralized internet dating service with trust and social values as its core principles. This means Blockchain is at the center of the platform's value proposition.

2.1 BLOCKCHAIN

Blockchain first emerged as the underlying technology behind Bitcoin when Satoshi Nakamoto published a whitepaper explaining its mechanics in 2008²¹. At the time, Blockchain solved the double-spending problem - a potential flaw in digital currencies where a coin gets spend twice.

This problem had continued for long and prevented many digital currencies from going mainstream. With Blockchain, the transactions could be timestamped and broadcasted to all the decentralized nodes for validation. Once validated, the transactions are irreversible, making them practically impossible to tamper with.

At its outset, a Blockchain is a distributed ledger technology (DLT) that individuals and organizations can use to store transactions on a ledger. Because it is distributed, the technology does not rely on centralized entities to maintain or update the ledger, as with traditional ledgers or databases.

Rather, Blockchain relies on distributed computers (sometimes called nodes) to validate and add the transactions to the ledger. For a given set of nodes to validate a given group of transactions (block), they must agree that the block meets the conditions specified by the decentralized consensus protocol.

When Blockchain launched in 2008, its primary use case was cryptocurrencies, with the first application being Bitcoin. Later, other cryptocurrencies (also called alternate coins) such as Ethereum and Litecoin emerged, also leveraging Blockchain as an underpinning technology. The success of cryptocurrencies, especially Bitcoin and Ethereum, has prompted other industries such as healthcare, finance, and real estate to consider Blockchain.

2.2 BLOCKCHAIN ROLE IN ONLINE DATING PLATFORMS

A Blockchain-powered dating network such as Mollie has many benefits when compared to traditional platforms, as highlighted below:

Table 1: Comparison between Blockchain-powered dating network and centralized platforms

Feature	Blockchain-enabled dating platform (Mollie)	Centralized dating platforms
Ownership of data	A Blockchain-powered platform provides true ownership of data . This is because users can manage their own keys (private and public) in a non-custodial manner.	A centralized dating network provides limited ownership of data . This is because centralized entities manage/control the creation and manipulation of data in the marketplace. They can sell such data without users' consent.
Security	Blockchain-enabled dating networks have robust security features . There is less fraud because the network relies on decentralized consensus protocols to validate transactions.	Traditional dating networks are largely centralized. As such, they are prone to a single point of failures attacks .
Revenue sharing	Blockchain-enabled networks incentivize users who participate in the network with tokens.	Centralized dating networks have no revenue-sharing mechanisms .
Authenticity of user profiles	Blockchain services such as personal verification and content authentication can be integrated into dating networks to ensure quality user profiles .	Centralized dating networks have several misrepresented user profiles because they lack personal verification and content authentication mechanisms.

2.3 BINANCE SMART CHAIN

BSC is a high-end Blockchain created by Binance, one of the world's leading Blockchain solutions. Binance conceived BSC to fulfill the same functionalities Ethereum provided—allowing users to execute smart contracts and launch tokens, albeit with enhanced efficiency. While most Ethereum-based platforms use the ERC-20 token standard, Binance leverages a BEP-20 token format.

BEP-20 tokens can represent virtually anything from shares within a business entity to dollars that can be stored in a bank vault, as is the case with stable coins. In our case, \$POP is an underlying token based on the BEP-20 format and represents a unit for incentivizing positive actions while penalizing bad behaviors in the Social Capital ecosystem.

Similarly, BEP-20 tokens can be bought, sold, and transferred at lower transaction costs than Ethereum fees. Mollie expects to use the low transaction fees in BSC to allow users in the Social Capital ecosystem to access dating services at lower prices.

Although most Blockchains have approved proof-of-work (PoW) as a practical mechanism for implementing decentralized consensus, it is not environmentally friendly because it consumes many resources. It also requires a large number of nodes to maintain security. BSC implements proof-of-staked authority (PoSA)—a variant of delegated proof-of-stake (DPoS) and proof-of-authority (PoA) to achieve a consensus mechanism where:

- A restricted set of validators generates blocks.
- Validators generate blocks in a round-robin manner similar to, similar to Ethereum's Clique consensus engine²².
- Validators get elected in and out based on the staking procedure defined by the decentralized governance.

²² "EIP-225: Clique Proof-of-Authority Consensus Protocol," Ethereum Improvement Proposals, accessed August 31, 2021, <https://eips.ethereum.org/EIPS/eip-225>.

Since Mollie is built atop BSC, a minimum set of 21 validators will be required to generate a block. To become elected as a validator, a node a user will require at least 10,000 BNBs or equivalent \$POP tokens. Additionally, a validator will need to spin hardware with the necessary specifications²³ and run a full BSC node²⁴.

A node can only start generating new blocks if it gets elected as a validator. Elected validators are the top 21 nodes with the highest number of BNBs that change every 24 hours through an ongoing election process.

Regular users on the Mollie platform can also act as delegators by staking their \$POP tokens to validator candidates via supported wallets. This way, users choose their preferred validators to help them obtain the minimum staking required by BSC protocol.

BSC is effective in generating economic incentives. Therefore, validators earn rewards in the form of \$POP tokens and share them with respective delegators. While economic incentives are great for the Mollie ecosystem, they also ensure users support the operation and security of the platform.



²³ "Validator Guides - Binance Chain Docs," accessed August 31, 2021, <https://docs.binance.org/smart-chain/validator/guideline.html#hardware>.

²⁴ "Validator Guides - Binance Chain Docs," accessed August 31, 2021, <https://docs.binance.org/smart-chain/validator/guideline.html#2-install-bsc-fullnode>.

3.0 SOCIAL CAPITAL ECOSYSTEM

We have conceived the Social Capital ecosystem as an entire suite of applications that facilitates decentralized networking. Our mission is to unite communities based on:

- **Social values.** We want to empower individuals to strive together.
- **Kindness.** We want to build positive relationships through empathy.
- **Respect.** We want individuals to form mutually beneficial relationships through equality.
- **Reciprocity.** Our platform will support a social structure that endorses equality actions.
- **Trust.** Our platform is built from trust and discourages exploitive behaviors.

Mollie is the primary product for the Social Capital ecosystem. As a Blockchain-powered dating application, Mollie allows users to nurture personal relationships via a transparent, secure, and auditable platform regardless of their geographical locations.

Other features of the Social Capital ecosystem include artificial Intelligence (AI) chatbots, augmented reality (AR) video profiles, Blockchain, \$POP tokens, NFT marketplace, Mollie Biz, and Mollie Bestie.



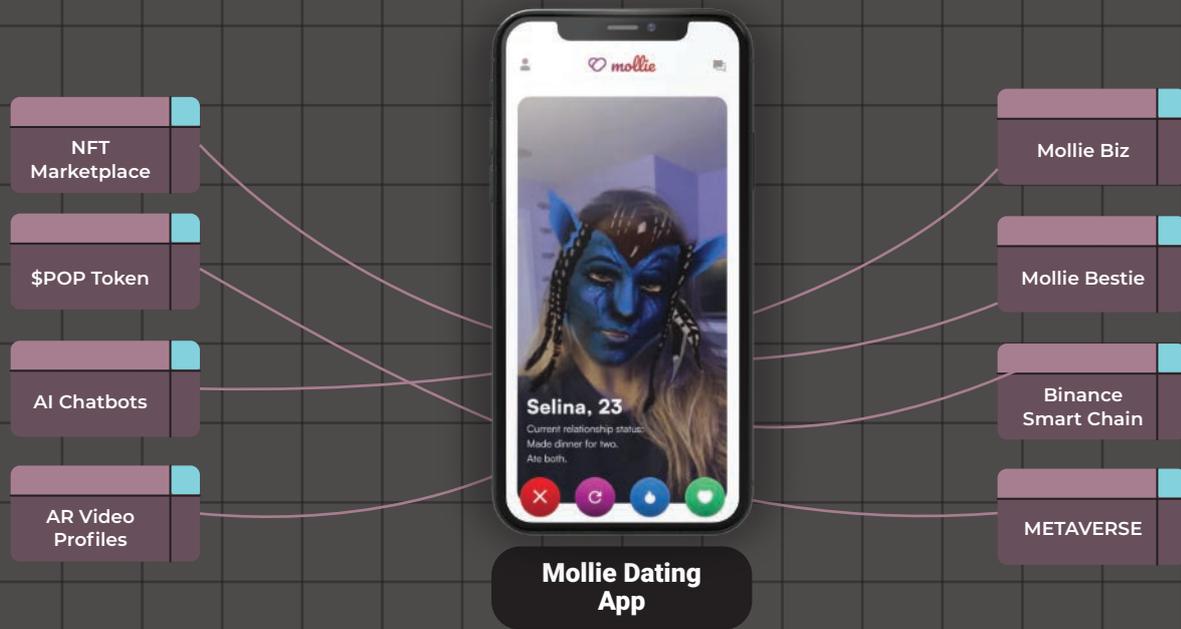


Figure 2: Social Capital Ecosystem

3.1 AI CHATBOTS

At Social Capital, we know the challenges that users of conventional dating applications face when searching for their companionships and nurturing relationships. We are implementing Mollie as an out-of-the-box dating network that uses AI to match users with their perfect partners. AI chatbots solve the communication issues on the platform by:

Providing more interaction options than just texting. For example, they can mediate personality/bonding games such as “would you rather?” quizzes. AI chatbots can also suggest pickup lines and conversation tops after matching. Ultimately, chatbots can help send notifications and suggest conversation topics if they detect extended inactivity.

Providing geolocation features to provide date activities and venue suggestions. For example, suppose a user says, “We should meet up this weekend!” The AI chatbot can automatically list local cafes, restaurants, museums, etc.

Acting against offensive messages. AI chatbots will automatically flag out offensive content and provide an option to block users who create unpleasant messages.

3.2 AR VIDEO PROFILES

At Social Capital, we are focused on changing how users interact while dating. Our platform will incorporate 3D avatars, animated emojis, and AR face filters. We believe these features give users more options to express themselves and build meaningful relationships. This will help create an interactive dating ecosystem.

Ultimately, AR video profiles will help our users to increase engagement, minimize stress, and generate positive memories while dating. Users can also monetize their creations.

We have seen how NFTs have taken collectibles and other forms of digital art by storm in the recent past. As of this writing, the global market size for NFTs has grown exponentially, rising from a measly US\$ 93 billion in 2017²⁵ to US\$ 2.5 billion²⁶.

Following the advent of non-fungible tokens (NFTs), we believe that emojis and generative art could be used to express online emotions and showcase each user's unique personality. We want to allow users to monetize these creations on the platform. Creators can create NFTs, and if users buy them, they get rewarded via \$POP coins.

Because NFTs are transferable, emojis and other generative arts can easily be recorded on a Blockchain which can easily be tracked to trace how the art has changed hands.



²⁵ Gourmet Galaxy, "NFTs Market Size Research: The Gaming Market Will Grow More than \$180 Billion in 2021," Medium (blog), January 5, 2021, <https://gourmetgalaxy.medium.com/nfts-market-size-research-b9da85743650>.

²⁶ "NFT Sales Volume Soared to \$2.5 Billion in the First Half of 2021," accessed August 15, 2021, <https://markets.businessinsider.com/news/currencies/nft-value-sales-h1-dappradar-nonfungible-tokens-crypto-hype-2021-7>.

3.3 BINANCE SMART CHAIN

We will develop the Mollie platform atop BSC. The Blockchain was conceived to run parallel to the Binance Chain (BC) and enable fast and decentralized (or non-custodial) trading. However, unlike BC, BSC has its own smart contracts and is compatible with Ethereum Virtual Machine (EVM).

The primary design goal of BSC is to ensure the high throughput that is inherent with BC remains intact while introducing smart contract functionality in the ecosystem. Unlike layer 2 Blockchains, BSC is an independent Blockchain, although it complements BC. This way, users enjoy rapid trading on BC while building potent DApps on BSC.

3.3.1 BINANCE MATCHING

This cross-chain functionality exposes users to a vast ecosystem that can cater to many use cases. One such use case is the Binance decentralized exchange (DEX). As a native marketplace on BC, Binance DEX allows users to exchange crypto assets issued and listed on the platform.

Binance DEX uses a discrete matching engine where the system collects all the orders for a particular block and matches them at the end of that block if they are still open. The matching takes place within the decentralized nodes, and all of the transactions get stored on-chain. This forms a complete, open, and auditable ledger²⁷.

²⁷ "Deep Dive Into the Binance DEX Match Engine," Binance Academy, accessed August 25, 2021, <https://academy.binance.com/en/articles/deep-dive-into-the-binance-dex-match-engine>.

3.3.2 WHY BSC?

We believe BSC is sufficient to provide the required throughput on the network. This is because the network uses the proof-of-staked authority (PoSA) to achieve high throughput, unlike other PoW-enabled Blockchains.

One of the main advantages of BSC is that it facilitates smaller trades with lower transaction fees. We believe this feature can help minimize entry barriers for many users that want to access decentralized dating services.

Also, BSC is EVM-compatible, meaning it supports a rich universe of Ethereum-based DApps²⁸. For example, users can easily configure applications such as MetaMask and use them in BSC.

3.4 \$POP TOKEN

Blockchain is a perfect candidate for dating networks because it guarantees users privacy, safeguards personal data, and eliminates misrepresented profiles. More fundamentally, Blockchain creates an incentivization mechanism where users get rewarded for their actions on the dating network. In our case, the \$POP token is the native coin that allows users to perform essential functions such as buying NFTs and staking.

Since the \$POP token is a BEP-20 token, we believe Mollie will become a standardized, decentralized dating application because BSC is now a mainstream Blockchain. Also, users can seamlessly transfer \$POP tokens to other platforms and trade. Examples of activities that \$POP tokens will facilitate include:

Sending \$POP tokens to other users. Mollie users can transfer their \$POP tokens to other users on the system.

Creating free NFTs/gifts. A user can create free NFTs via \$POP tokens. They can also bring in NFTs from other Blockchains and use them on the Mollie platform.

Exchanging \$POP tokens for fiat. Users can exchange their \$POP tokens for fiat or other cryptocurrencies directly through their wallets.

Earning rewards. Validators who successfully validate blocks get rewarded via \$POP tokens.

Buying premium services. Users can purchase premium features like super likes, redo swipes, and gifts via \$POP tokens.

²⁸ "Binance Chain Docs," accessed August 25, 2021, <https://docs.binance.org/>.

3.5 NFTS MARKETPLACE

NFTs have taken collectibles and electronic art by storm. As of this writing, the total market size for NFTs is US\$ 2.5 billion²⁹, from a paltry US\$ 93 million in 2016³⁰. At Social Capital, we believe generative art is only one way to use these new forms of crypto assets.

We want to leverage NFTs to represent ownership of any unique nature, like emojis in Mollie. That is why we are incentivizing users who create such content on the platform. Once users create NFTs on the platform, they can sell them to earn \$POP tokens and later use these tokens to perform other services such as staking or purchasing premium products.

3.6 MOLLIE BIZ

Recent McKinsey research shows that nearly 20% of women in any workplace feel lonely³¹. The same report notes that while women are underrepresented at every level in the workplace, women of color are less likely to find their companions in c-suites or boardrooms.

To help such groups foster the kind of community they feel they are missing at work, we will build Mollie Biz. This is an application in the Social Capital Ecosystem that is conceived for professional networking and mentoring. The application will let users add digital resumes, verified photos, and examples of their work.

When unveiled, the application will allow users to swipe and find connections to create networks within the Social Capital ecosystem. By allowing users to choose who they want to date, Mollie Biz will help resolve existing gray areas that make users uncomfortable when dating.

Ultimately, the application allows users to:

- **Find a new job.**
- **Make friends.**
- **Hire talents.**
- **Find mentors.**

²⁹ "NFT Sales Volume Soared to \$2.5 Billion in the First Half of 2021," accessed August 15, 2021,

<https://markets.businessinsider.com/news/currencies/nft-value-sales-h1-dappradar-nonfungible-tokens-crypto-hype-2021-7>.

³⁰ Gourmet Galaxy, "NFTs Market Size Research: The Gaming Market Will Grow More than \$180 Billion in 2021," Medium (blog), January 5, 2021,

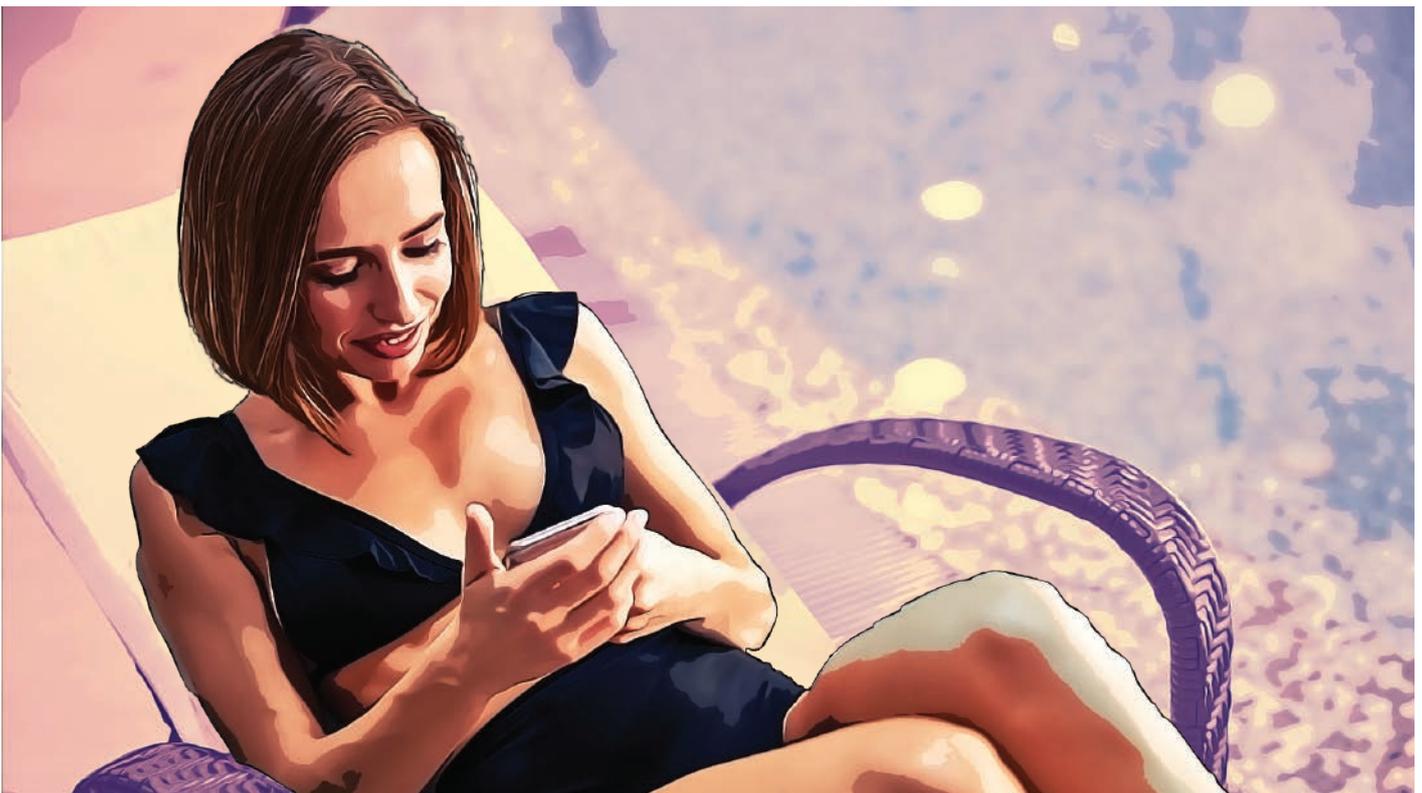
<https://gourmetgalaxy.medium.com/nfts-market-size-research-b9da85743650>.

³¹ Rachel Thomas, Marianne Cooper, and G. Cardazone, "Women in the Workplace 2020," 2020.

3.7 MOLLIE BESTIE

With technology, it is getting harder to build real-life connections. Many studies conducted in the recent past have shown a correlation between internet usage and loneliness, negatively impacting happiness. For example, one study found that 42% of millennial women were more fearful of solitude than a cancer diagnosis³².

Mollie Bestie is a simple, fun way for users to meet new friends and build a supportive community around them, no matter their geographical locations or who they are. Unlike other dating platforms that stifle communication on their networks because they are listed companies, Mollie Bestie is completely decentralized and uses AI chatbots to facilitate communication.



³² Condé Nast, "The Fear of Being Alone (FOBA) Is Real—Here's How to Face It," Glamour, May 29, 2020, <https://www.glamour.com/story/how-to-face-your-fear-of-being-alone>.

3.8 UNIQUE FEATURES

As an out-of-the-box decentralized dating network, Mollie will incorporate the following features:

- **Robust wallet management system**
- **In-app messaging system**
- **Games, quizzes, One-click dates, etc.**

3.8.1 ROBUST WALLET MANAGEMENT

A robust wallet application is crucial to the success of any platform. We will provide users with a foolproof wallet application that supports both custodial and non-custodial key management to allow users to safeguard their investments.

We will also build the application as a multi-asset platform, incorporating stable coins such as USDT, DAI, and BUSD. The platform will also support major fiat currencies, including USD, Pound Sterling, and Euro.

To facilitate usability and security, Mollie's wallet will incorporate the following features:

- **Responsive UI and UX.** Users can quickly get started with the dating experience—whether they are using PCs, Android, or iOS clients.
- **Seamless currency conversion ecosystem.** The wallet will provide an instant conversion dashboard to enable crypto-to-fiat exchanges and vice versa.
- **Multi-factor authentication (MFA).** We will incorporate MFA to provide an extra layer of security, allowing users to authenticate themselves via short messaging services (SMS), e-mail notifications, and mobile phone calls.

3.8.2 IN-APP MESSAGING SYSTEM

Monolithic social media platforms like Facebook and Twitter provide messaging features, albeit with intrinsic pitfalls such as lack of data privacy mechanisms and security. A decentralized in-app messaging platform disintermediates the entire messaging system, giving back the power of data control to users.

Our in-app messaging feature allows users to retain their privacy and intellectual property (IP). Users will also use the messaging system to interact with NFT holders and exchange virtual assets via a simple, open, and auditable platform. One powerful feature that Mollie will incorporate is emojis.

We believe that emojis can be powerful tools to express users' emotions and their unique online personas. However, we also want users to create and sell custom emojis within the platform via an NFT marketplace.

3.8.3 GAMIFICATION, QUIZZES, ONE-CLICK DATES

As a decentralized ecosystem, Mollie has all the tools creators can use to gamify and subsequently monetize their NFTs. We believe that users will find competition and winning rewards more stimulating with incentive mechanisms on the platform. The platform will incorporate AI-enabled quizzes to provide interactive experience and assistance on the dating platform. We will also build one-click dates to streamline dating experiences.



3.8.4 SOCIAL CAPITAL METaverse

Metaverse is no longer just science fiction. It has evolved into a disruptive technology, offering new opportunities to creators, gamers, and artists by not just reshaping the entire economy but inventing it afresh. As a primary go-to platform for e-commerce, entertainment, and even a workplace, metaverse not only extends the internet but is also its successor.

At Social Capital, we are delivering the power of metaverse into your pocket by combining a crypto-wallet, gamification, and AR dates. Using AR, the platform will allow various users to make meaningful connections in a comfortable environment.

For example, users can date in virtual worlds, purchase avatars, explore new environments with friends, or attend events. AR dating experiences provide great opportunities for users to explore each other's passions and personalities virtually as well as in the physical realm.

4.0 MARKET OVERVIEW

According to Statista, the global internet dating market size will rise steadily at a CAGR of 8.02% from US\$ 8.9 billion in 2021 to reach US\$ 12.1 billion by 2025³³. The online dating industry has shown resilient growth in terms of sales and has been steadily evolving over the past few years.

This growth is mainly due to:

- Rise in the number of singles.
- Increasing mobile phone penetration.
- Surge in internet access.
- COVID-19

4.1 RISE IN THE NUMBER OF SINGLES

While marriage is still a widespread phenomenon, the increasing number of singles has become a worldwide trend. According to the latest United Nations (UN) report, the percentage of women who reach the age of forty without ever getting married is increasing.

The same report also shows that the percentage of those who marry is also increasing, so is the proportion of those in their forties who are divorced. The report shows that 4.3% of adults worldwide reached their late forties without ever marrying in 2010. This represented an increase of 1.2% compared to 1990 when 3.1% of adults reached their forties without marrying or getting married.

Differences by region provide interesting statistics. For example:

- Australia and New Zealand lead in terms of the proportion of adults that reach the forties without marrying at 14.1%.
- In Europe, 10.8% of adults reach their forties without marrying or getting married. In sub-Saharan Africa, 6.1% of adults reach the forties without marrying.
- There are indications that the above figures could rise significantly in the coming years. According to Pew Research Center, roughly 25% of today's young adults in the U.S. will be single by the time they reach the age of 50³⁴.

The rising number of singles provides a massive opportunity for internet dating platforms to gain traction among the target customers via customized features that cater to their needs.

³³ "Dating Services - Worldwide | Statista Market Forecast."

³⁴ "Record Number of Americans Will Stay Single for Life," accessed August 19, 2021, <https://psychcentral.com/blog/single-at-heart/2014/09/record-number-of-americans-will-stay-single-for-life>.

4.2 INCREASING MOBILE PHONE PENETRATION

Mobile devices have increasingly become intertwined in everyday life for millions of people across the globe. We have witnessed internet-enabled devices such as smartphones, iPhones, and tablets evolving into indispensable information, communication, and entertainment tools. According to Statista, the global mobile devices penetration rate reached 78.05% in 2020³⁵.

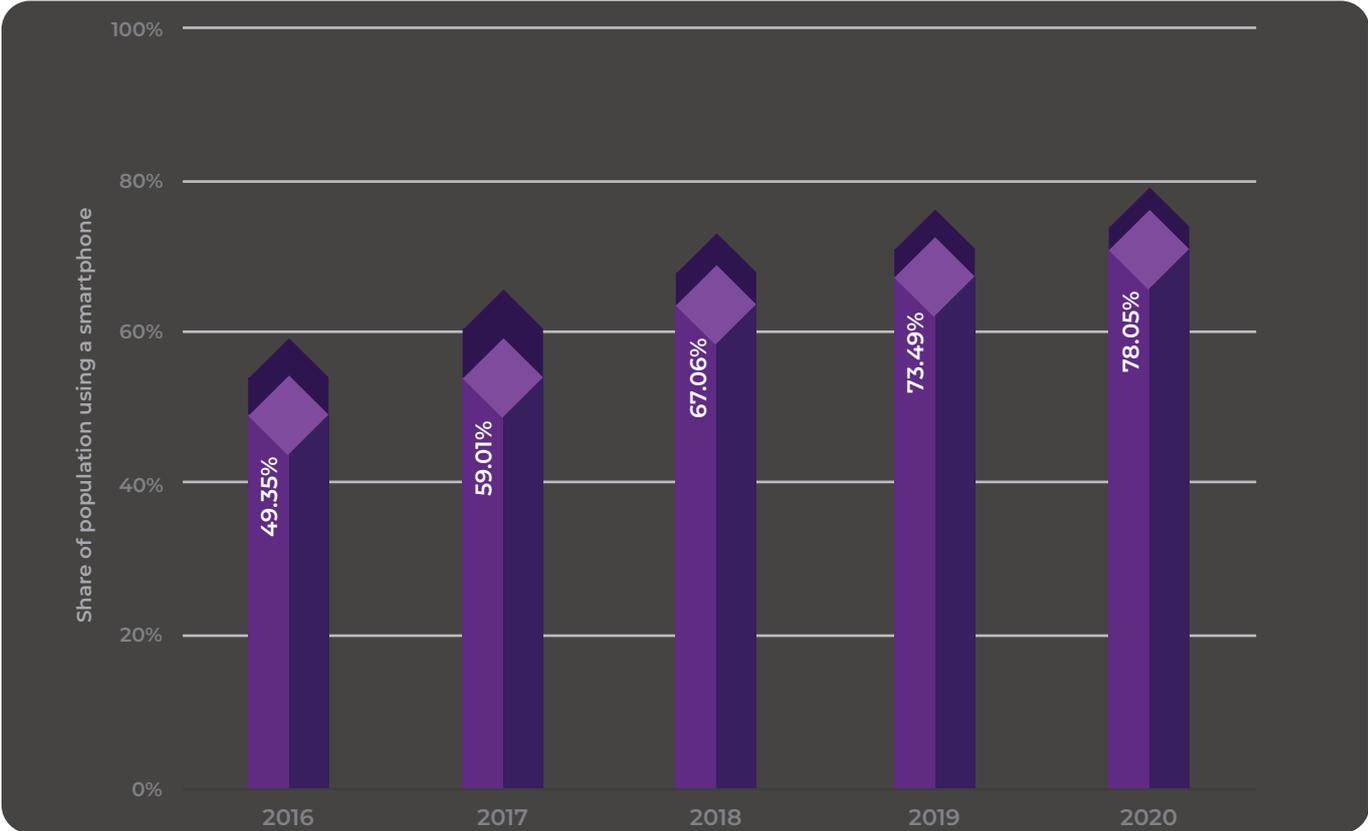


Figure 3: Global Smartphone Penetration Rate

Mobile device ownership is projected to increase in the coming years as mobile computing technologies become more available and affordable. This upward trend in mobile device adoption has become evident in the dating services in developing markets where mobile networks are the primary tools for accessing the internet. For example, as of this writing, mobile connections account for over 55% of the total internet traffic in developing markets³⁶. This percentage is higher in mobile-first markets such as Asia and Africa, where mobile networks are the primary technologies powering internet connections.

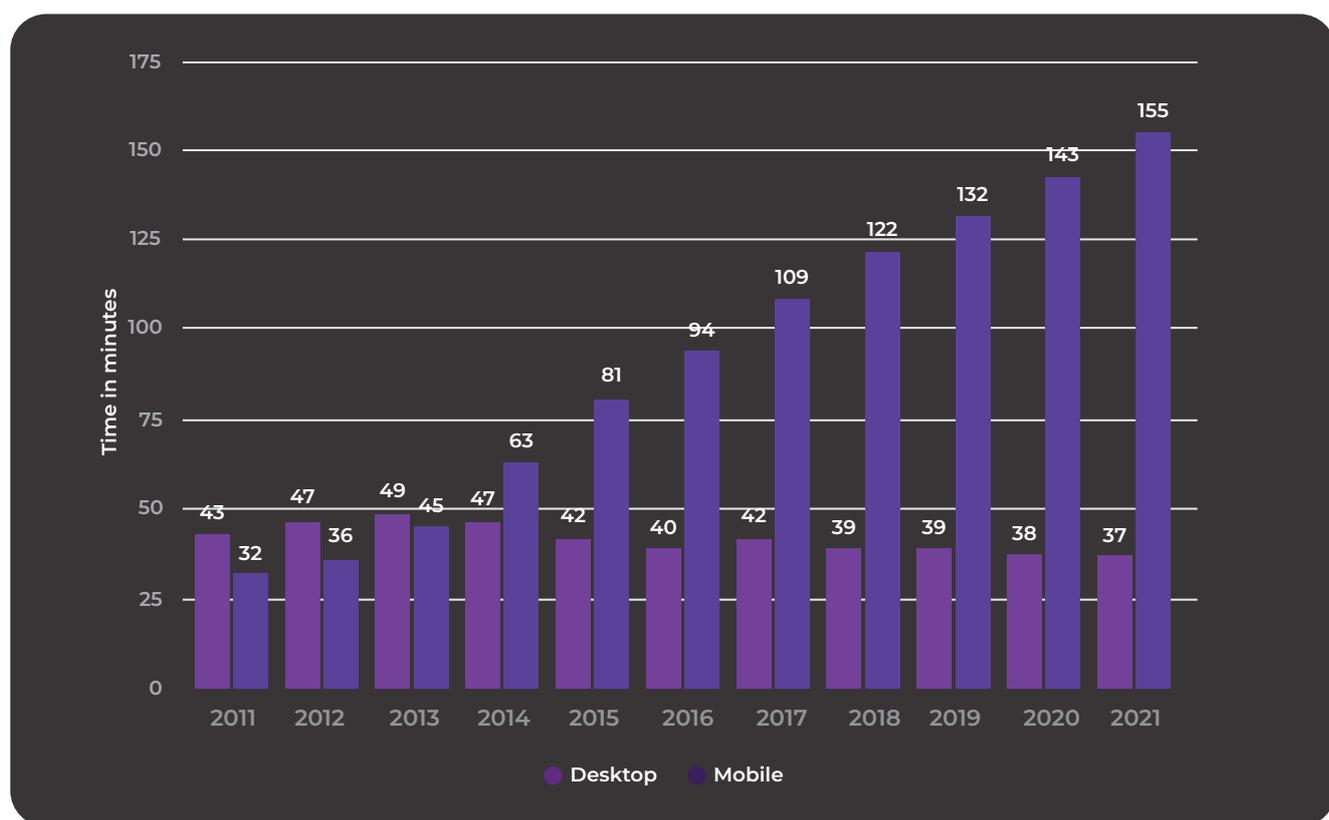
³⁵ "Smartphone Penetration Worldwide," Statista, accessed August 19, 2021, <https://www.statista.com/statistics/203734/global-smartphone-penetration-per-capita-since-2005/>.

³⁶ "51 Mobile Vs Desktop Usage Stats You Should Know in 2021," TechJury, March 12, 2019, <https://techjury.net/blog/mobile-vs-desktop-usage/>.

4.3 SURGE IN INTERNET ACCESS

Besides the rising number of singles and proliferating mobile devices, a surge in internet connectivity is also contributing to the overall popularity and growth of online dating services. According to DataReportal, nearly 6 in 10 people worldwide has access to the internet, with 332 million people going online for the first time in 2020. This represents a 7.5% increase year-to-year increase when compared to 2019³⁷.

Just like mobile devices, the internet has become ubiquitous and pervasive—connecting billions of people worldwide. The time that users spend online with their mobile devices has also been steadily rising. Statista's latest data shows that the daily mobile internet consumption will increase to 2 hours and 35 minutes in 2021 compared to a measly 39 minutes for desktop internet³⁸.



³⁷ "60% of the World's Population Is Now Online — DataReportal – Global Digital Insights."

³⁸ "Daily Time Spent Online by Device 2021," Statista, accessed August 19, 2021, <https://www.statista.com/statistics/319732/daily-time-spent-online-device/>.

The online dating landscape has witnessed significant growth because of the aforementioned factors. Besides breaking the geographical boundaries, the internet has changed how people find love in unique ways that we did not imagine some few years ago. However, we believe the future of dating is not with the current centralized platforms.

Despite their novelty, current dating platforms have demonstrated inherent weaknesses, making them unsuitable to cater to the needs of the modern millennials that want privacy, security, and honesty. We believe Mollie is that platform that can offer these value propositions.

4.4 COVID-19

During the pre-pandemic times, the online dating landscape was already thriving. This is attributed to the proliferating smartphones and internet connectivity during the period. These factors allowed the global market size to reach US\$ 6.5 billion in 2019³⁹ from a paltry US\$ 2.5 billion in 2015⁴⁰.

However, when governments introduced lockdowns and social distancing measures, loneliness, and isolation sunk in. This meant that users had to rely only on smartphones and internet connectivity to search for companionships. This has even accelerated the growth of the online dating market size, which is expected to reach US\$ US\$ 8.9 billion by the end of 2021.

For example, Dating.com reported that its dating platform was up 82%, while Bumble saw a 26% surge in the number of messages exchanged on its system during early March of 2020⁴¹. Because no cure has been found yet, we expect the growth rates to remain higher.

³⁹ "Online Dating Services Market Size Estimated to Reach \$10,378 Million by 2026 - MarketWatch," accessed August 16, 2021, <https://www.marketwatch.com/press-release/online-dating-services-market-size-estimated-to-reach-10378-million-by-2026-2021-07-14>.

⁴⁰ John LaRosa, "American Singles Fuel the \$2.5 Billion Dating Market," accessed August 25, 2021, <https://blog.marketresearch.com/american-singles-fuel-the-2.5-billion-dating-market>.

⁴¹ MacKenzie Sigalos, "Why the Coronavirus Might Change Dating Forever," CNBC, May 25, 2020, <https://www.cnbc.com/2020/05/25/why-the-coronavirus-might-change-dating-forever.html>.

5.0 TOKENOMICS

Mollie coin is a crucial feature of the Mollie platform. This section describes key aspects that make the Mollie Coin intrinsically tied to the platform and its economic prospects.

5.1 POP COIN

Mollie coin is an BEP-20 token that fuels all the transactions in the ecosystem by offering the following services:

Payment. Users can buy and sell their NFTs via Pop coin. Users can also purchase premium services such as redo swipes and gifts through Pop coin.

Rewards. Validators who successfully confirm blocks are incentivized via Pop coins.

Staking. Users who want to validate the blocks in the network can stake their Pop coins.

Exchanging Mollie coins for fiat. Users pay a transaction fee when they exchange Pop coin for fiat and vice versa.

5.2 TOKEN SPECIFICATIONS

table 2: mollie coin specifications

Feature	Specification
Platform	BSC
Token standard	BEP-20
Token name	\$POP token
Token Ticker	POP
Total token supply	1,000,000,000 \$POP tokens
Vesting period	24 to 48 months
Burnable	Yes

5.3 TOKEN ALLOCATION

We want to raise 1,000,000,000 \$POP tokens in an initial exchange offering (IEO) that will run from [date] to [date]. Figure 5 highlights

Mollie's token allocation mechanisms:

Section/Department	% of \$POP tokens
Public/Private Sales	50%
Reserves	10%
Marketing	10%
Team	10%
Advisors	3%
Bounties/Airdrops	3%
Other functions (Referrals, CSR, charity, etc.)	14%

Table 3: Token allocation mechanisms

5.4 USE OF FUNDS

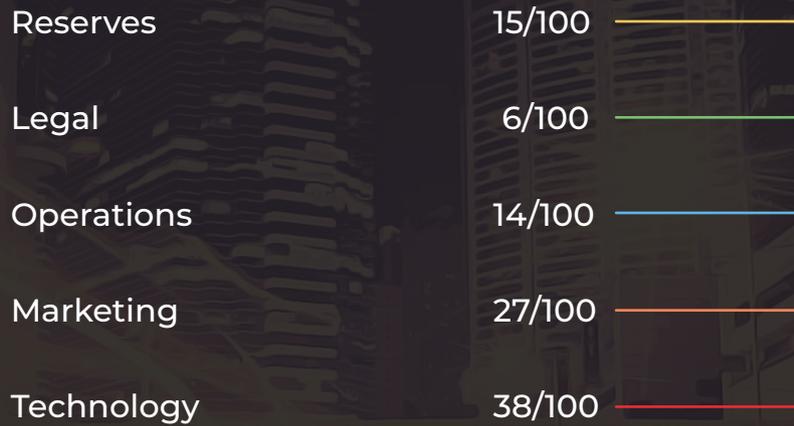
The platform will reserve 15% of the funds for future roadmap and development initiatives will 6% will go towards funding legal aspects. The platform will use 38% of the funds to finance the technology and development initiatives such as:

- ▶ Smart contract development.
- ▶ Research and Development expenses.
- ▶ Security audit.

27% of the funds will fund marketing initiatives such as:

- ▶ Community engagement and growth.
- ▶ Creating partnerships.
- ▶ Other marketing expenses.

The remaining 14% will fund the day-to-day operations such as rent and bills.



TOTAL: **SOFTCAP: 500,000 USD**
HARDCAP: 2,500,000 USD

Figure 6: Use of funds

6.0 ROADMAP

Q4 (2020)

- Idea Formation
- Market Research/Problem Statement formulation
- User Surveys/ Interviews assessment
- Prototype (version 1) completed for Mollie Dating App

Q1(2021)

- Blockchain Architecture Formulation
- Tokenomics Formulation
- Formulation of the Social Capital Ecosystem
- Front-End development work completed (version 1)
- Website (version 1) completed

Q2(2021)

- Start of Back-End development work for Mollie Dating App
- Planning for Marketing/Community Building
- Branding/Designing of the Social Capital Ecosystem

Q3(2021)

- Token creation & Deployment
- Launch of Website (version 2)
- Custom wallet Development & Multi currency support

Q4(2021)

- Security Audits
- Marketing/Pre-sale campaign/Community Building
- Start of Pre-sale
- Launch of Mollie Dating App (Beta version)
- Launch IDO/IEO

Q1(2022)

- Marketing/Community Building
- Launch of Mollie Biz
- Iterate on the product development of Mollie Dating App based on User Feedback