



V I O L A . A I

The World's First  
A.I. Driven Marketplace  
for Dating & Relationships

White Paper

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## IMPORTANT NOTICE

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**PLEASE DO READ THIS SECTION VERY CAREFULLY. IF YOU ARE IN DOUBT AS TO ANY ACTION YOU SHOULD TAKE, PLEASE CONSULT YOUR LEGAL, FINANCIAL, TAX OR OTHER SUITABLE PROFESSIONAL ADVISOR(S).**

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## KEY ESSENTIALS

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### Goal



- The World's First and Smartest A.I. Driven Marketplace for Dating and Relationships
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### Market Size



- At least US\$800 billion
- 

### Token



- Utility is achieved by transactions by users, advertising by merchants and rewards given by or to the community
  - A small % of the transaction is burnt away after each transaction
- 

### Tokens Sold



- VIOLET - ERC 20 Token
  - 37% of Total Supply, Limited to a total of 250 million tokens
  - Tokens purchased are calculated based on the exchange rate at the point of purchase or the end of Token Sale, whichever is higher.
- 

### Cap



- Soft Cap: US\$1 million    Hard Cap: US\$12.5 million
  - Public Sale targeted on 14 Mar 2018
  - End of campaign's exchange rates determine if cap is achieved.
- 

### Team



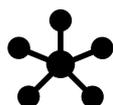
- Over 14 years' strong track record in the industry
  - Team tokens vested with 30% in first year and 70% in 2<sup>nd</sup> year
- 

### User Base



- Starting base of 1.4+ million users to build user base and community from existing apps, platforms and services participating as Merchants/Partners from the start
- 

### Data



- Over 3500+ datasets
  - 1.1 billion data points for training
- 

### Product



- MVP development on-going. Target Launch in May 2018.
  - Fast Monetization with token integration and usage in our 4 dating apps, 2 websites and 4 offline services in 5 countries
-

## ABSTRACT

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Singles and couples face numerous challenges in their journey of finding love and sustaining their relationships. Singles risk being victims of love scams due to the lack of identity verification, experience online dating fatigue and could be exploited by some unethical dating services. On the other hand, couples face difficulty in sustaining their marriages, exacerbated by uncertainty on where to seek help and which advice to follow. Many are also reluctant to share their problems due to concerns of privacy and stigma.

Viola.AI is our solution for singles and couples experiencing these love and relationship challenges.

Viola.AI harnesses on the latest technology in artificial intelligence, cryptocurrency and trustless smart contracts to develop a powerful lifelong relationship advisor named Viola and an A.I. and Blockchain driven marketplace to create and sustain successful and happy relationships for all singles and couples.

Viola.AI is designed to help achieve the following objectives:

- 1) The World's Most Effective A.I. Advisor and Assistant for Dating and Relationships
- 2) The Smartest Blockchain Marketplace for Dating and Relationship

To achieve the objectives, Viola.AI is equipped with several core capabilities.

- a) **A.I. Engine** - Provides highly personalized matching and discreet relationship advices which evolve according to the user's relationship status by employing A.I. with personalised machine learning engine and natural language empathy
- b) **Blockchain Technology** - Protects users through decentralised Real-ID Verification with visual recognition technology, facilitates trustless and efficient transactions with Viola.AI Wallet and Hedged Escrow System
- c) **Marketplace** - Provides timely recommendations to address the user's needs for goods and services facilitated with Smart Contracts, offers strong community support with quality content and advice that addresses user's enquiry and allows customization of Viola.AI core services on 3<sup>rd</sup> party platforms

**We build the VIOLET token to have strong utility.** Besides just the Viola.AI app, the VIOLET token will be integrated with our existing ecosystem of 4 apps, 2 websites and 4 offline services (integrated 3<sup>rd</sup> party Merchants/Partners) so that VIOLET tokens can be used by its owners almost immediately and with decent scale upon its launch. The core utilities of VIOLET Tokens are:

- a) **Payment Transactions** – VIOLET token can be used for payment for goods and services in the 10 platforms in our eco-system and with plans to expand into other partners' ecosystems/platforms.
- b) **Advertising to Growing User-base** - Merchants/Experts would buy VIOLET tokens to advertise the growing database, presenting another strong source of utility besides the transactional utility.
- c) **Community Token** - Users can ask the community questions and upon great content, responses or ideas given, a reward of VIOLET tokens will be given. Rewards will also be given for referring new users or merchants who spend on Viola.AI as a thank you for helping grow the platform.

The VIOLET token is instrumental in building up interactivity and growth traction in the Viola.AI community who will be encouraged and rewarded by providing great content to benefit other users and which the Viola.AI engine can learn from, providing the growing data that Viola.AI can grow better and more accurate from.

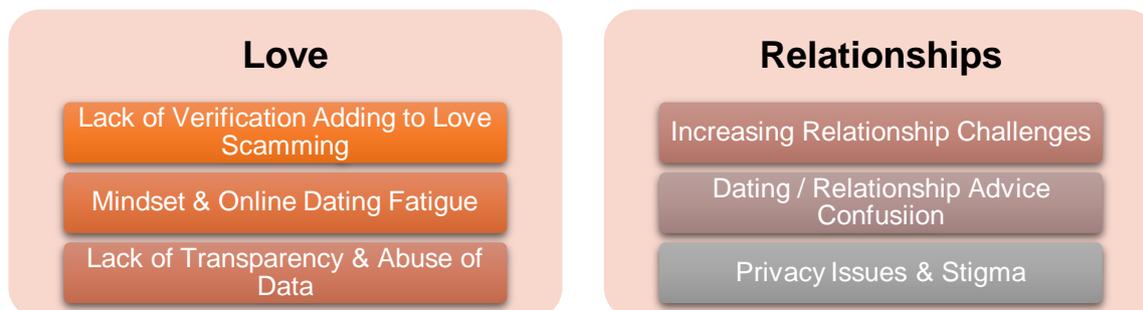
Viola.AI is driven by the team behind the Lunch Actually Group, a group of proven, passionate and dedicated entrepreneurs who are convicted to create better lifetime relationships. Together, the team has combined more than 50 years of experience in the dating and matchmaking industry. CEO Violet Lim is also an acknowledged industry expert who has been featured in more than 4000 local and regional media appearances including Bloomberg, Huffington Post, CNBC, Forbes, BBC, Channel NewsAsia and many others.

We believe Viola.AI will revolutionize and disrupt the world's dating and relationship industry as it can successfully address and resolve the pain points and challenges that singles and couples are facing today.

# 1. BACKGROUND

## 1.1 LOVE & RELATIONSHIPS CHALLENGES IN THE 21<sup>ST</sup> CENTURY

*Everyone has a universal desire to seek companionship and love.* However, despite all the advancement in technology, the quality of dating and relationships has declined over the recent decades to record lows.



### 1.1.1 Lack of Verification Adding to Love Scamming

When singles find love online, the last thing they expect is to be scammed by syndicates targeting their profiles. The absolute lack of verification methods for most online dating services serves the scammer's needs completely as they steal photos and pretend to be someone else. 10% of new accounts on free dating sites are scammers. Scammers have a modus operandi; creation of multiple dating accounts, falsification of profile details, endless texting but never have any face-to-face dates, and upon gaining the trust of the victim, getting the victim to transfer money. Many of the victims never recover financially or emotionally from these scammers.

### 1.1.2 Over-focus on "Meeting" in the New World of Dating

Singles are finding it harder to find the right one (despite over 80% say they would eventually want to settle down) as seen from the number of never married singles increasing worldwide. Most singles believe that they are single because they have not met the right one. They think that dating apps are the holy grail to help resolve their problem. However, 55% of singles in the United States have realised that technology has made dating harder and 61% are negatively impacted in their ability to have meaningful face-to-face conversations. Many singles have since concluded that online dating is hard work.

Finding the right one is not just about finding the right match, it is also about "being the right one" and "choosing the right one". Some singles do not possess the right mind-set (e.g. they are overtly negative, have emotional baggage) and some do not have the right skill set (e.g. what to do on a date, how to escalate from dates to a relationship). Singles who do not have the right mind-set or skills would not succeed, despite having limitless matches or going on dozens of dates, as they would not be able to attract the right person, or they would keep choosing the wrong type of partner.

### 1.1.3 Abuse of User's Data and Poor Security

With limited repeat business (the more effective you are, the faster your customers leave effective dating services) and the high cost of acquiring new leads, many online dating services/apps have gone rogue to maximize on their monetization strategy. Essentially, the exploitation of the user's own data and lack of

transparency is at the heart of the problem. Some of these dating services analyse the data to understand the type of profile that their users are looking for and create bots with false but attractive profiles to lure users to upgrade to paid subscription plans. These rogue dating services extend their customer's limited life time value through these unscrupulous means. Many large dating companies have been caught using fake profiles and bots (e.g. Ashley Madison, JDI Dating, DEAiBBS) and these unethical practices are becoming rampant in the online dating industry. The current centralisation of users' data in the databases of dating apps and sites also means that a successful hack (e.g. Ashley Madison Case) could result in an embarrassing exposure for the users' personal data.

#### **1.1.4 Increasing Relationship Challenges**

More marriages worldwide are failing than ever before. In the United States and Europe, the divorce rates range from 53% to as high as 70%. Even in conservative Japan, divorce rates have jumped 4 times in the last 30 years with 1 in 3 marriages ending in failure. One major challenge that many couples experience is the dearth of romance after the honeymoon years. This lack of romance or taking one another for granted lead to boredom and lack of connection which contributes towards a marriage breakdown. Many couples entering marriage focus on the wedding, not knowing that there are also many different milestones which could be relationship minefields. Newly married couples are often in for a shock as they start to learn about each other's personal habits and the adjustments necessary to make the marriage work.

#### **1.1.5 Confusion on which Advice to Follow**

People are turning to a multitude of avenues for dating and relationship advice ranging from family, friends, books, internet search and forums. The myriad of values and beliefs of different people of all creeds and cultures has produced a huge amount of conflicting dating and relationship content. This has resulted in massive confusion for the singles and couples seeking advice. There is also a lack of tracking on which advice is more effective for the asker while previous high quality advices could be lost and buried in old threads over time.

#### **1.1.6 Privacy Issues and Stigma**

Marriage counselling is a service that is readily available in most countries. However, many are still reluctant to seek help as there is often a stigma attached to the seeking for marriage counselling. Many feel that they are still able to solve the problem on their own, or are uncomfortable sharing their relationship problems or failures with someone else. Marriage counselling is often used as the last resort and often, when it is too late.

### **1.2 THE MARKETPLACE OPPORTUNITY – BIG SPENDING ON DATING AND RELATIONSHIPS**

Spending on love is often seen as an investment whether one is looking for the right partner or one is sustaining a relationship with one's mate. The more developed a society is and the more disposal income it has, the more it spends on dating and relationships. The following are some opportunities for increased spending on dating and relationships.

### 1.2.1 Preparation for Dates

When it comes to dating, first impression counts. Hence, it is no surprise that singles are willing to invest in that impressive outfit or new hairdo to look their best. Singles who are better-groomed are more likely to succeed in the dating and courtship phase compared to their less-groomed counterparts.

### 1.2.2 Dating Activities

Dating activities can be free like spending a day in the park or paid for like catching a movie together, enjoying a premium meal in a Michelin star restaurant or for couples, going for an exotic holiday.

### 1.2.3 Gifts

Buying gifts is common among singles wanting to impress a potential mate, and for attached couples looking to surprise each other on special occasions. Americans are estimated to spend around \$19 billion on Valentine's Day just on buying gifts. In recent years, "Singles Day" (11<sup>th</sup> Nov) has become the world's biggest online shopping day where Chinese shoppers spent \$25.3 billion in one day. Other special days where couples tend to buy gifts include anniversaries, birthdays and Christmas.

### 1.2.4 Dating Services

The dating industry has risen from its infancy stage to now cover online dating sites, dating apps, singles event organizers and matchmaking services. The choices of dating services available for the singles strongly indicate that there is growing demand around the world.

### 1.2.5 Proposals and Weddings

Proposals, wedding planning and the actual wedding itself are estimated to be a US\$300 billion market worldwide as couples are prepared to splurge on the celebration of their union.

### 1.2.6 Education/Counselling

Education and counselling services have grown aggressively over the past decades ranging from "pick up artist" classes for single men, date coaching, books, videos and counselling services that attempt to mend relationships or salvage marriages that have gone wrong. Over time, the education and counselling segment of the industry have grown from strength to strength.

### 1.2.7 Global Addressable Market Size

The dating, courtship and relationship related spending market is estimated to be at least \$800 billion.



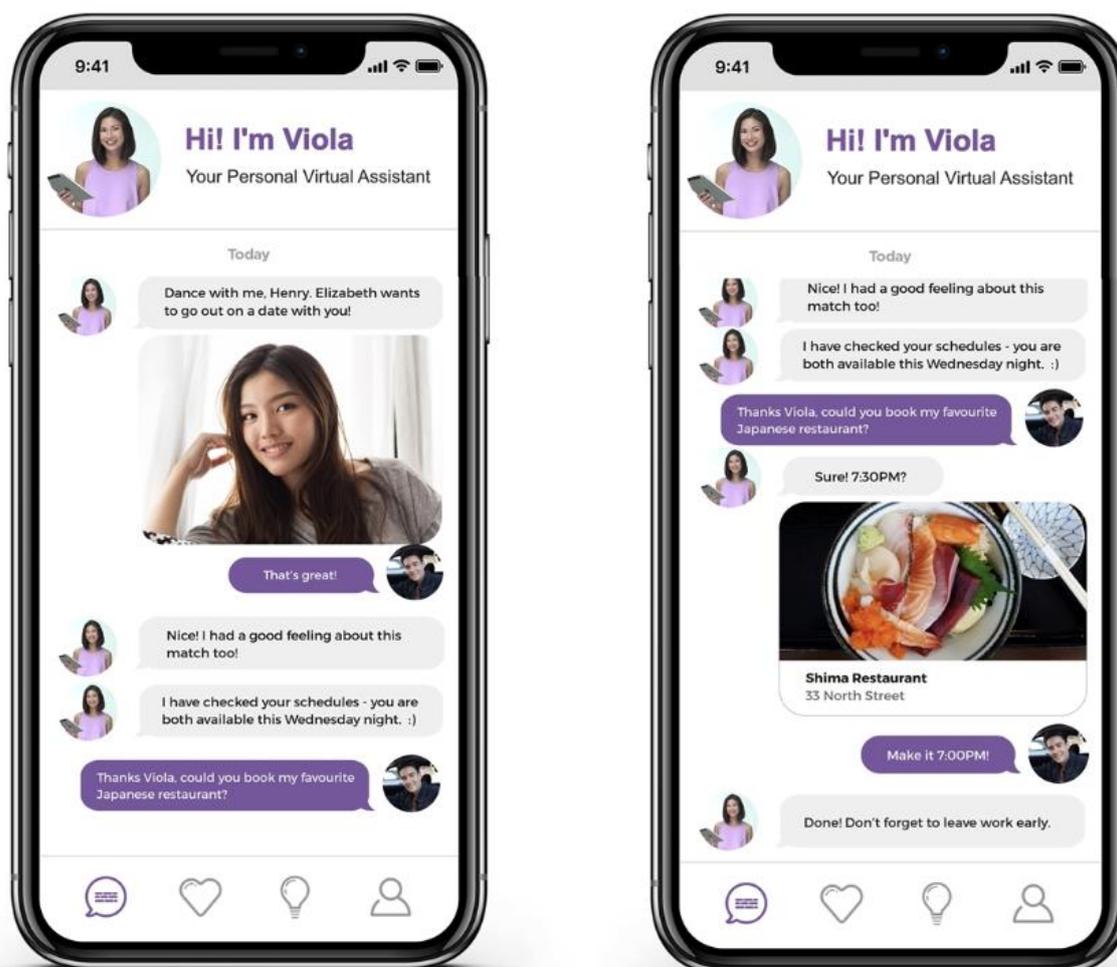
## 2. WHAT IS VIOLA.AI

### 2.1 INTRODUCING VIOLA.AI

To address the love and relationship challenges illustrated above, we are bringing together the latest advances in artificial intelligence, cryptocurrency and trustless smart contracts to create a powerful solution for singles, couples and married couples. The solution will be:

- A decentralised infrastructure with end-to-end data encryption and Real-ID Verification for all users
- Making dating easier for singles and relationships better for couples
- Transparent in nature and addresses the current conflict of interest faced by dating services
- Powered by trustless smart contracts where all parties involved in the marketplace will get the agreed revenue shares and rewards agreed upon

### Our Solution is Viola.AI



## 2.2 CORE OBJECTIVES

### 2.2.1 The World's Most Effective A.I. Adviser/Assistant for Dating and Relationships

Viola.AI is an ever-improving, decentralized and secured A.I. and crowd-wisdom engine that gives sound advice, useful recommendations, timely concierge service and quality matches to help singles to be effective in finding love and to help couples improve their relationships. Complementing Viola.AI is our Real-ID System that assures users that they are not communicating with a bot or scammer.

A marriage falls apart due to accumulation of disappointments and what Dr. John Gottman, a renowned marriage researcher in the US has termed as the “4 horsemen” which are *Contempt, Criticisms, Defensiveness* and *Stonewalling*<sup>1</sup>. Often, couples do not realize that by displaying these behaviours, they are accelerating the decline of their marriage. By the time the couple finally decides to seek marriage counselling, the damage done is often irreparable.

If couples are aware of the need to nurture the relationship with consistent initiatives from the start, many of these negative outcomes could be prevented or corrected. Viola.AI is built to facilitate these initiatives and ensure that both sides take pro-active actions to sustain and grow their relationship.

### 2.2.2 Recommendations based Marketplace for “Dating” and “Relationships”

Viola.AI is an A.I. driven marketplace for both singles and couples that is centred around the usage of VIOLET tokens (ERC 20 token). Smart contracts will be used to facilitate the transfers, escrow, agreed revenue sharing and commissions among buyers, merchants/experts and partners.

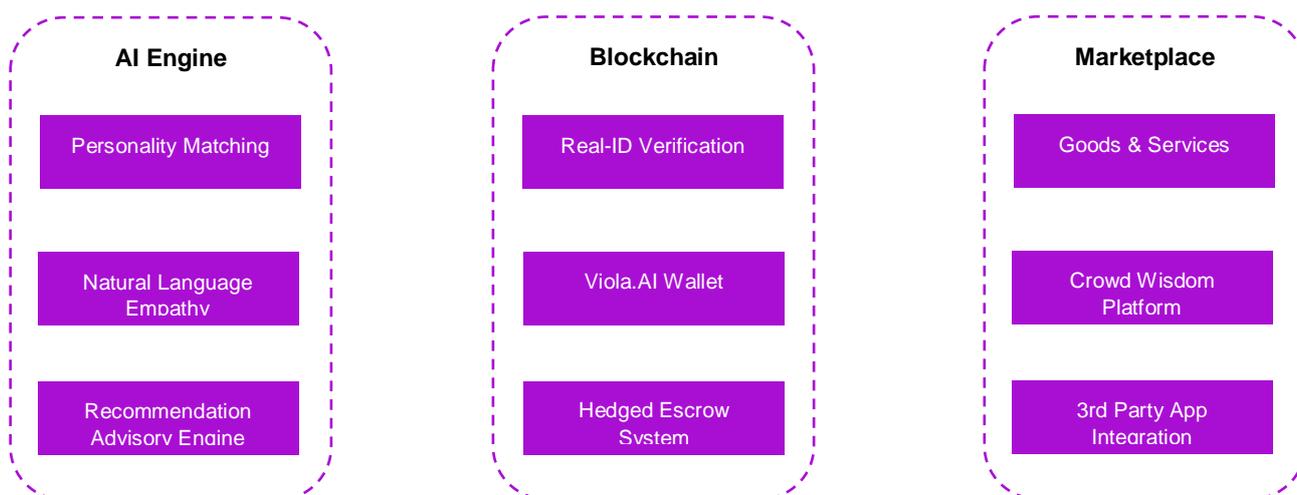
The Dating (for Singles) and Relationships (for Couples) industries have long operated separately. The information accumulated in the dating and courtship journey of a person's life would be useful for the later stages of couple-hood and marriage. Viola.AI provides an opportunity for both industries to come together for greater effectiveness by combining both data and increasing customers' life-time value (CLTV) simultaneously.

Throughout a person's dating and relationship journey, Viola.AI will recommend highly targeted and relevant content, goods and service from the better rated experts/merchants to users according to their personalised needs, relationship timelines (birthdays, anniversaries, special dates), relationship stage (e.g. no wedding rings ads for singles who have not found the right one yet) and other customisable factors. Experts and merchants would thus enjoy higher sales conversion rates due to the timing and relevance of these recommendations. Using Ethereum smart contracts, all parties will be assured that any community and partner's effort to improve Viola.AI will get their agreed due rewards or revenue share.

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<sup>1</sup> <https://www.gottman.com/blog/the-four-horsemen-the-antidotes/>

## 2.3 CORE CAPABILITIES



### 2.3.1 A.I. Engine - Love Advisor and Assistant

#### *Evolving A.I. Engine based on User's Relationship stage*

Most of the dating or relationship bots in the market focus on a simple one-dimensional part of the dating or relationship stage. If it is a dating bot, it solely focuses on matches and dates whereas all the data and information gathered are wasted when the user gets into a relationship, upon which the dating bot becomes useless.

Viola.AI's capabilities do not just cover dating, but extends into courtship, exclusivity and marriage. This will help address the conflict of interest that dating services face where the more effective they are, the earlier they lose their best-paying users. Thus, Viola.AI will always service its users to the best of her ability. When a user finds someone, and is now exclusively dating him/ her, Viola.AI will simply evolve to courtship-centric advice and recommendations, focus on date arrangements; all relevant to an exclusive relationship. Viola.AI can even serve the user in the case of a break-up and ease the person back into dating when he/she is ready. Viola.AI does not judge. If a user's current preference is to make friends or focus on casual dating, Viola.AI will provide the right matches based on mutual intentions. Similarly, users who are looking for serious relationship will be matched with people of similar intentions.

Viola.AI can provide value to users in 3 core ways:

1. Reduces workload for users by providing personalized matching, relationship advices, dates coordination, purchase of goods and services, date and romance ideas and content
2. Provide timely, scheduled and on-request advices and actions based on relationship status and needs
3. Provide discreet and non-judgmental connection for users

Below is a sample of Viola.AI's capabilities which is not exhaustive:

Dating	Courtship	Marriage
1. Right matches based on intention (e.g. Casual/Serious)	1. Capture details on partner to customise do and don'ts	1. Pre-marriage preparation and counselling
2. Arrange dates	2. Advise on managing personal differences	2. Provide honeymoon ideas that fit budget
3. Recommend gifts for dates	3. Curating suitable and fun activities for couples	3. Reminders to maintain 4:1 positive to negative experiences
4. Reminders on dates and dating etiquette	4. Perform relationship health check and provide improvement suggestions	4. Curating suitable date ideas for couple based on lifestyle data
5. Record date and outcome	5. Breakup grieving support	5. Reminders for anniversaries and special dates
6. Propose strategy for texting and following up	6. Transit to finding better match with refined preference and experience	6. Marriage counselling
7. Give advice based on real data	7. Advise on managing expectation of families	7. Divorce advice and management
8. Collect feedback from the other party	8. Provide ideas for proposal	8. Family planning
9. Evolves from just dating into exclusivity	9. Provide ideas for wedding planning	9. Pregnancy and parenting guide
10. Help a divorcee ease back to modern day dating	10. Keep track of wedding plan progress and activities	10. Community and expert support for new parents

### Use Case

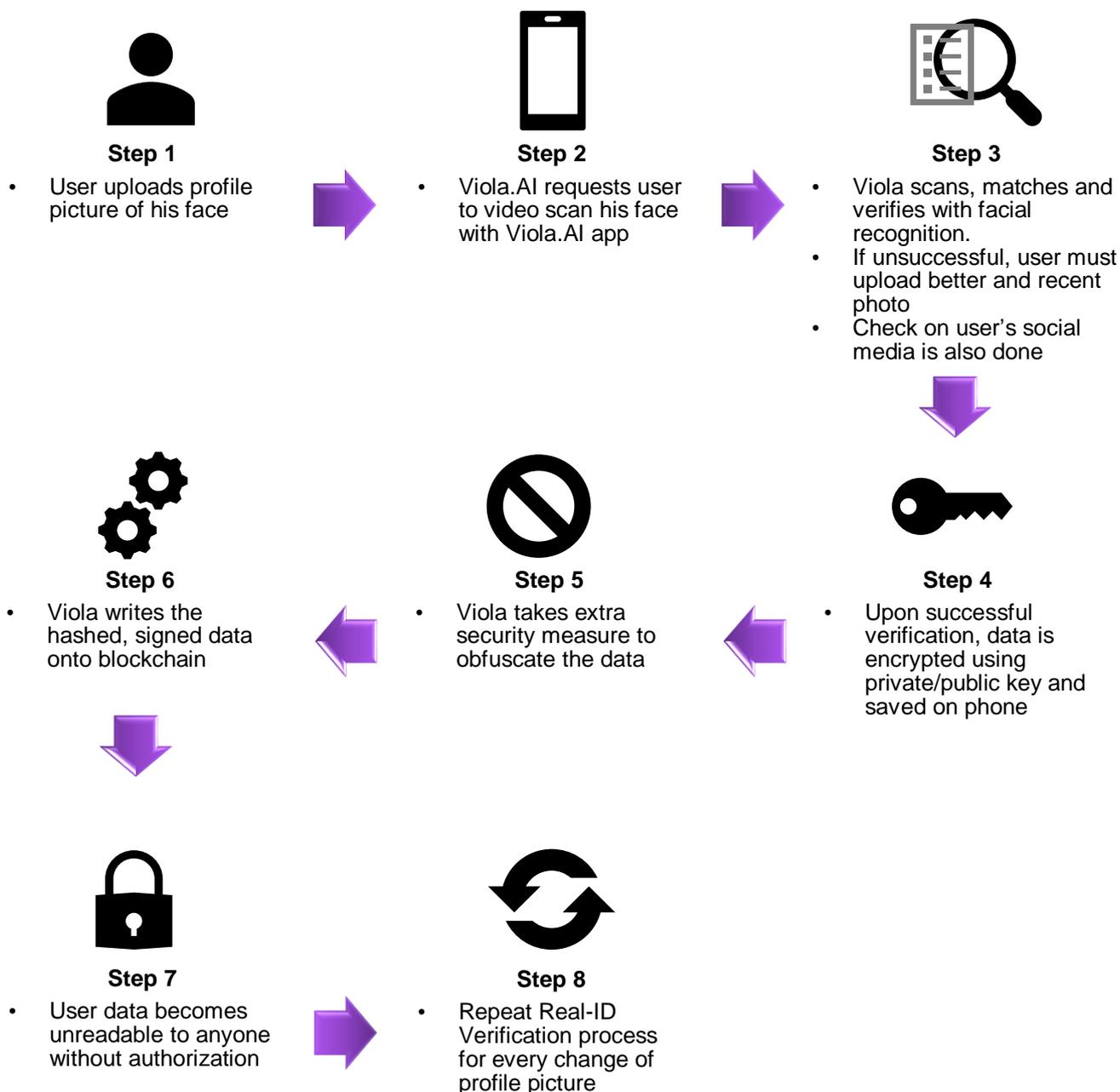
Henry is using Viola.AI to find new matches. Finally, Viola.AI informs Henry that one of his matches, Elizabeth, is also interested in meeting up with him. She proposes to arrange the date on Wednesday (after checking both side's calendars) in a Japanese restaurant (both parties like Japanese food) that is relatively near (based on where Henry and Elizabeth work). Henry agrees to the date, time and venue. Shortly after, he receives a notification that Elizabeth has also agreed. One day before the date, Henry receives a reminder on the date and Viola.AI suggests a first date article for Henry to read. On the day itself, Viola.AI prompts Henry to leave work on time and shows him the location of the restaurant again to avoid being late (first impression counts). Henry finally meets Elizabeth face to face. They both hit it off which Viola.AI promptly asked Henry for feedback on how the date went after the date. After a few more dates proposed and arranged by Viola.AI, Henry and Elizabeth decide to become an exclusive couple. Henry updates Viola.AI on this change in his relationship with Elizabeth and Viola.AI now switches mode from matchmaker to love advisor and begins to help Henry to grow his relationship with Elizabeth henceforth (e.g. reminding him of important dates and prompting him to gift). All this time, Elizabeth goes through the same process as Henry.

### 2.3.2 Blockchain

#### Real-ID Verification and Security

One of the key usages of blockchain technology is in our Real-ID Verification System. Blockchain technology comes together to make Viola.AI a more attractive and powerful proposition. As users are expected to share their lifetime personal and sensitive dating and relationship data on Viola.AI, it is critical to secure this data with our decentralised Real-ID and end-to-end encryption to ensure no Viola.AI user ever should wake up one day

to find all their personal information and communications being leaked to the world, like in the infamous Ashley Madison hacking case. Viola.AI provides a decentralized identity and reputation solution on the blockchain for both users and merchants. With the Real-ID Verification approach, all relevant parties can be cryptographically linked to their verified online identity and reputation data. Not only does this allow users to truly own an online identity rather than a corporation, this will lead to more confident and trust in the communities and marketplace. To counter all the above, Viola.AI's Real-ID Verification creates a quick and efficient process to ensure that a person's dating profile photo and some basic ID has resemblance to the truth. Below are the steps:



The advantages for all users verified by Viola.AI's Real-ID are:

- It ensures the profile a user sees represents a real person and not a bot made to bait the user into signing a subscription plan.
- Lesser disappointments on physical appearance in first face-to-face dates due to greater authenticity of photos used (i.e. what you see on photo more closely resembles what you see in person).
- Higher standards to the photos used in the network and better clarity for all parties.
- Basic user information is verified so that the data used on the profile is real as well.

- All information will be fully encrypted personal data verification proof and optional biometric locks and will be securely stored in the user's phone. By keeping this data in the user's control instead of a centralized services or database, it will prevent the vulnerability to data breaches and may even lead to denial of service where the service is compromised.

### Use Case

*Elizabeth downloads the Viola.AI App and creates an account. She uploads a photo that has half her face blocked and Viola.AI then takes a video scan of her face for the verification process. The verification fails as the photo Elizabeth has used is not suitable (or even good for a dating profile) when compared to the video scan. She is then prompted to use another photo which she uploads to Viola.AI again. This time, the photo used is more suitable and the verification test passes. Elizabeth logs in to her Facebook account to allow verification to be conducted on her profile which includes name and other basic information. The final checks are passed and Elizabeth can proceed to use her verified dating profile on Viola.AI.*

### Viola.AI Wallet

Viola.AI Wallet is key to facilitate all transactions in Viola.AI between users and experts/ merchants. The Viola.AI Wallet provides great convenience and security for users by allowing users to:

- Purchase and store VIOLET tokens
- Make or receive payments for goods and services
- Conduct peer-to-peer transfers when users reward one another for quality content or advices
- Receive rewards for revenue share, gamification, referral and system bug report

### Hedged Escrow System

To ensure all transactions are carried out in a trustless and automatic manner, Viola.AI's business model will be entirely decentralised with Ethereum Smart Contracts and Hedged Escrow System. This system allows users to secure the total value of a service in the hedged contract and only release it when the service is completed. As VIOLET token value may fluctuates during the escrow holding period, any differences in the escrow value are adjusted with the hedged contract upon release of the payment.

## 2.3.3 Recommendation-based Marketplace

### Goods & Services

Viola A.I. includes a content, goods and service recommendation engine that serves as a marketplace between the user community and experts/merchants/partners centred on the VIOLET token. Viola.AI differs from other marketplace services in a few key aspects:

- **Timeliness** – As Viola.AI focuses its advice and recommendations to a user based on his/her specific timeline and occasion, the quality of the leads to the expert and the merchant is higher than that of a person who is simply browsing around or doing “window” shopping with no specific aim.
- **Convenience** – Viola.AI serves as an enabler for both sides for the transaction to happen, reducing friction and misunderstandings that very often happen between users and experts/ merchants.

- Relevance – The right type of content, goods and services from the right experts/merchants are provided to the right type of users based on the person's relationship stage and both side's personal preferences. Thus, there is greater relevance to all parties in the marketplace.

Payment for goods and services can be made with VIOLET token as Viola.AI will be a wallet for users to hold and manage their VIOLET tokens. For initial practicality and to promote mass adoption of the marketplace, payment can also be made with credit cards for now. We would, however, give extra incentives for people to use VIOLET token for transactions ensure it gradually preferred over fiat.

### Marketplace Interaction for Users & Experts / Merchants

- Advice for User's Queries
- Purchase of Goods & Services
- 1-to-1 Direct Chat
- Mutual Reviews
- Tips with VIOLET Token for Good Content & Service
- Revenue Rebate for Vendors with Good Reviews

#### Use Case

*It is now one year since Henry and Elizabeth got married. Viola.AI reminds Henry that his first wedding anniversary is coming and if he wants to do anything special for Elizabeth. Henry responds "Yes" and he wants to buy flowers and book a restaurant for a nice dinner date. Viola.AI proposes the itinerary for the evening which Henry accepts. Viola.AI then proceeds to make the booking. Viola.AI presents Henry with 3 choices of the flower bouquet for Elizabeth and proposes the time and place of delivery. Henry doesn't like any of the choices and sends out request to the florist merchants within Viola.AI for more options. More flower options come back from the florist merchants and Henry chooses one of them to be delivered at the time and place proposed by Viola.AI and makes payment by VIOLET tokens to the chosen florist merchant for it. Henry is now all set for his Anniversary with Elizabeth and Viola.AI reminds him accordingly one day before about it.*

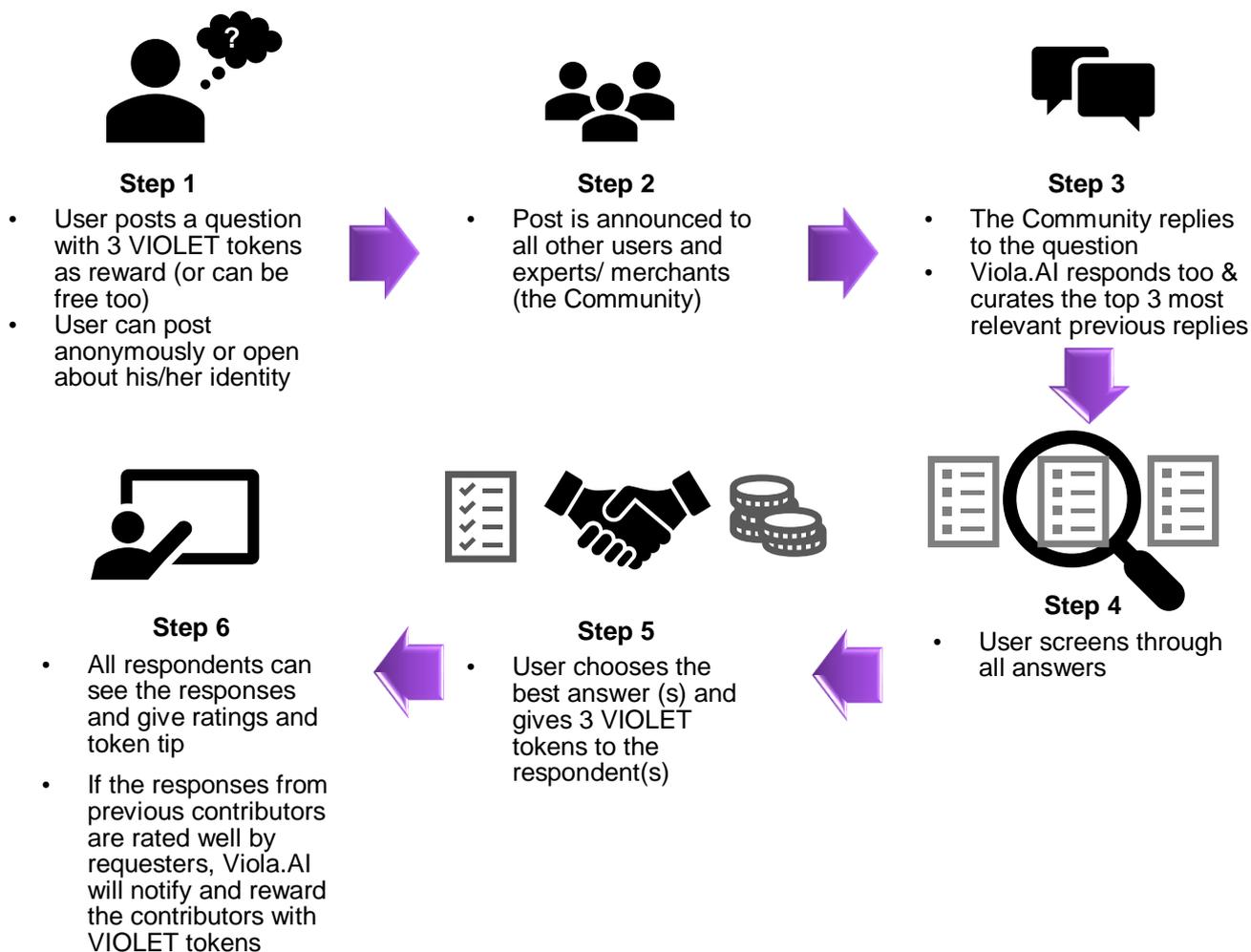
#### Community Crowd Wisdom

Viola.AI is designed so that all users can always get free advice from Viola.AI on an individual basis and in a discreet manner so they are less reluctant to ask questions. However, as Viola.AI is still in the early days of development, it will take time for Viola.AI to learn and to give the most relevant advice. The area of love, dating and relationship is very broad with many possible complex scenarios and permutations.

To supplement Viola.AI's initial limited capability in the beginning while she is developing and learning, users can seek answers by sending out their questions or requests via a bid. The requestor can encourage respondents to answer the request by adding VIOLET tokens to the request as a reward. The respondent with the best answer that is chosen by the requestor will be given VIOLET tokens. The requestor can decide to reveal their identity or remain anonymous if they desire the privacy. Most importantly, Viola.AI will learn from the best-rated responses and if she incorporates the responses into her future responses, the content providers will also be rewarded with VIOLET tokens.

Viola.AI works better than a post in a forum that asks for replies/advice which is a hit-and-miss affair, depending on who happens to be online when the question is asked. Viola.AI can draw the best answers from previous contributors and ensures that requestors do not miss out on the past best responses and that these contributors will continue to be rewarded if it is relevant to helping the requestor solve their problems.

The diagram below illustrates how a request to the community is done:



### Use Case

*Viola.AI has helped Henry and Elizabeth nurture their exclusive relationship. Henry decides to propose to Elizabeth. He wants the proposal to be special and unique and decides to ask the community for advice and ideas. He sets up a request, adds 10 VIOLET tokens as a reward and sends it out. Dozens of replies start coming in from the community proposing ideas and sharing stories of their own proposals. Merchants respond with offers of their services and venues for his proposal. Henry goes through the answers. He selects the reply he deems to be the best and the 10 VIOLET tokens go to the person providing that reply. Henry also selects a venue to rent from one of the merchants and pays a deposit to that merchant through Viola.AI to secure it for the special day. The proposal is successful and Viola.AI proceeds to help the couple plan the wedding.*

## Deployable to other Platforms

Viola.AI core services and engine will be open-core and value-add to other dating, relationship or family related platforms. With the Real-ID Verification system, partners can be assured that the Viola.AI users with the Real-ID tag joining their platform are genuine. Viola will be deployed in all of Lunch Actually Group's eco-system of platforms who will come in as the first 3<sup>rd</sup> party platforms from the start but will be treated as separate entities in their recommendations and ratings. Below is an example of Viola.AI being deployed on the LunchClick platform:



Beyond Lunch Actually Group's platforms, other 3<sup>rd</sup> party partners may also deploy Viola.AI with the below benefits:

- Firstly, Viola.AI can be customized based on their platforms to serve their sales needs by legitimately promoting their subscription packages and services.
- Secondly, Viola.AI changes the paradigm for the dating industry with continued residual income and longer lifetime value of their customers. Viola.AI will track and use smart contracts to enable revenue share so that a partner's users will continue to give them residual income as they move through different stages in a relationship.
- Thirdly, the Viola.AI platform allows partners to further pro-actively engage their users as well as Viola.AI's other users, thus increase their credibility and marketing reach. Viola.AI reward system enables them to earn VIOLET tokens from the users which they can to further advertise their businesses.
- Even though our eco-system of 10 platforms and services will be integrated early, they will be treated without favouritism and fairly when other platforms also come in to compete in the marketplace.
- Lastly, as Viola.AI is open-core, they can choose the parts that can be modified to make it suitable for their needs. This expands the possibility of deploying Viola.AI to other related industries outside of dating and relationships.

## 2.4 TECHNOLOGY

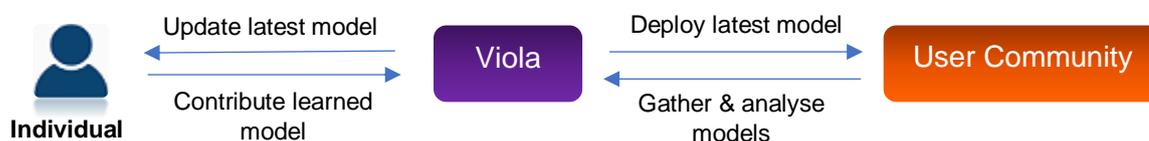
### 2.4.1 Artificial Intelligence (A.I.) with Decentralized and Personalized Machine Learning Engines

Majority of today's big institutions that employ machine and deep learning have centralized infrastructure that own and control user's data. With recent advancement in Blockchain and A.I technology, it is now possible to keep sensitive user's data safe and private while improving the A.I learning models for everyone. Hence, we will develop Viola.AI to have a decentralized A.I. engine for relationships and dating.

The Viola.AI engine will be initially deployed with our proven models based on more than 13 years of experience in dating consultation, concierge and coaching. We are also looking to work with Singapore Government Agency, AI Singapore, who has the capacity to support us with more A.I. expertise and research resources. Over the same period, we have also accumulated 1.1 billion data points segmented in nearly 4000 datasets from not just on what singles do online, but also on what really happens offline in real dates which will provide a strong foundation in our initial A.I. training data and development.

This application of decentralized machine learning will have 3 major benefits:

- User's sensitive data are kept private and safely encrypted in local devices
- Trained A.I. model will be highly personalized for each user
- Allows collaborative learning that has positive network effect for users



With this model, Viola.AI will be able to harness the best practices of the crowd-sourcing while maintaining the personalization of everyone as we understand there is no one-size fits all solution for any relationship challenges.

### 2.4.2 Deeper Understanding of Users and Partners

As we focus on more in-depth understanding of the user via interaction with Viola.AI and big data, we will be able to provide more accurate profiling and timely advice and recommendations. This area will also tap into the user's social media and online data for further analysis.

Each person has their own set of values, beliefs and perspectives. These different degrees of characteristics place a huge influence in searching for compatible matches and are crucial for relationship success. By understanding user and their match/partner/spouse's personality dimensions, Viola.AI will be able to effectively advise them on how best to communicate, actions to take and things to avoid which can be successfully accumulated in Viola.AI for useful application for a person's lifetime relationship.

To obtain accurate personality dimensions, the following methods and approaches will be proposed:

### Step 1 - Data Sets Preparation

User's data obtained should be transformed first into optimal format prior to machine learning analysis. Two major areas will be discussed here to achieve this.

#### a) Dimensionality reduction

By using singular-value decomposition (SVD) and orthogonal rotations (Varimax). These methods will reduce the risk of overfitting and increase statistical power of results. Also, they will remove multicollinearity and redundancy in data corpus by grouping related features (variables) in single dimension. As a result, the significantly reduced data sets will impose lower demands on computational resources and more useful for manual analysis to extract specific patterns for further research and refinement.

SVD Theorem:

$$M = \mathbf{U} \mathbf{\Sigma} \mathbf{V}^*$$

- $\mathbf{U}$  is an  $m \times m$  unitary matrix (if  $K = \mathbb{R}$ , unitary matrices are orthogonal matrices),
- $\mathbf{\Sigma}$  is a diagonal  $m \times n$  matrix with non-negative real numbers on the diagonal,
- $\mathbf{V}$  is an  $n \times n$  unitary matrix over  $K$ , and
- $\mathbf{V}^*$  is the conjugate transpose of  $\mathbf{V}$ .

Varimax Theorem:

$$R_{\text{VARIMAX}} = \arg \max_R \left( \frac{1}{p} \sum_{j=1}^k \sum_{i=1}^p (\Delta R)_{ij}^4 - \sum_{j=1}^k \left( \frac{1}{p} \sum_{i=1}^p (\Delta R)_{ij}^2 \right)^2 \right).$$

#### b) Data imputation of missing values

In real world situation, data obtained from users are usually incomplete for the input into neural network model. To mitigate this situation, we will consider using multivariate imputation by chained equations (MICE).

Multiple imputation has several advantages over other missing data approaches. Multiple imputation involves filling in the missing values multiple times, based on the observed values for a given individual and the relations observed in the data for other users. MICE, are very flexible and can be used in a broad range of settings. Because multiple imputation involves creating multiple predictions for each missing value, the analyses of multiply imputed data take into account the uncertainty in the imputations and yield accurate standard errors.

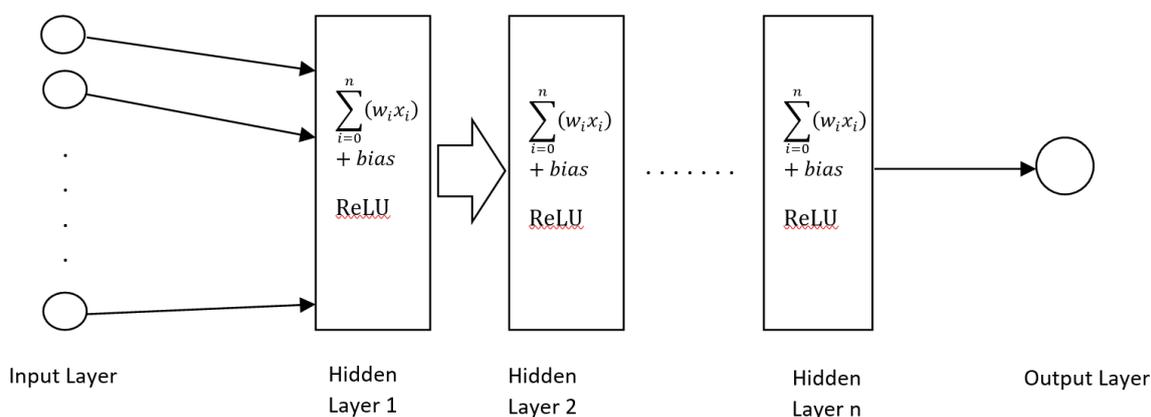
### Step 2 - Artificial Neural Network (ANN) Approach

With the pre-processed datasets from both users and Viola.AI, we will optimize the personality compatibility and personalisation at an individual scale by using machine learning concepts such as neural networks.

ANN can be fit using existing data and then used to predict the compatibility of future matches. On the same note, with the knowledge of couple's compatibility dimensions, Viola.AI will be smarter in recommending and advising users in a relationship.

To achieve accurate recommendation and advice based on user's compatibility with their match/partner, ANN models like multilayer perceptron (MLP) will be considered initially. Further improvements together with other ANN models will be evaluated in the near future.

ANN like MLP mimics biological neuron; hidden units in the neural network apply specific non-linear activation functions. One of the popular activation functions is rectified linear unit (ReLU) that we consider as activation function for the units of hidden layers MLP. It improves information disentangling and linear separability. Furthermore, ReLU activation is computationally cheaper: there is no need for computing the exponential function as in case of sigmoid activation.

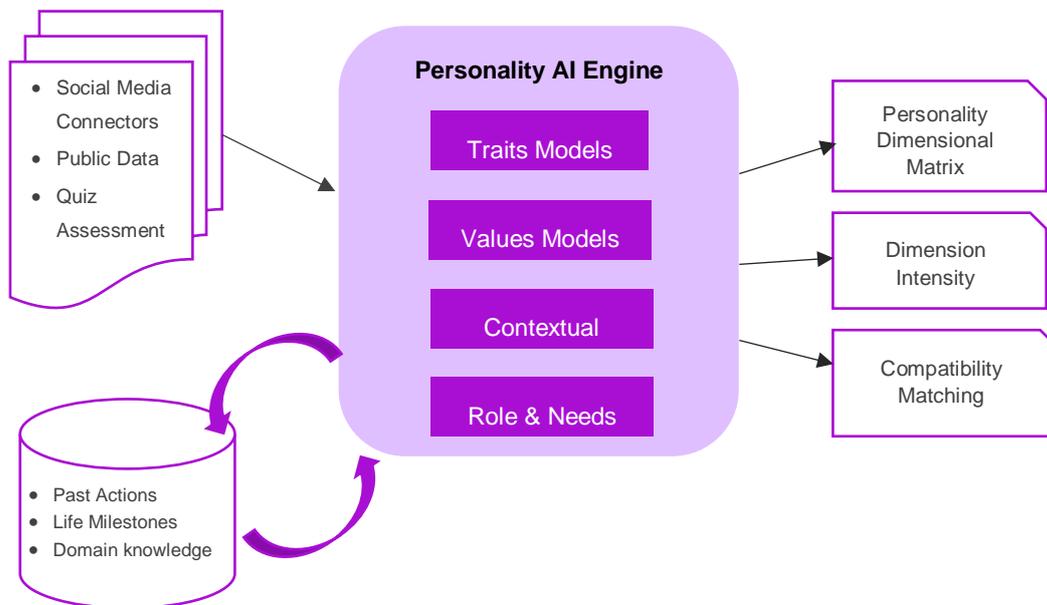


To reduce overfitting, dropout can be applied as regularization technique. As for the loss function to be optimized, Mean Squared Error (MSE) with Adam optimizer (Adaptive Moment Estimation) will be applied. The Adam optimizer has proven advantages like (1) parameters update are invariant to rescaling of the gradient, (2) step sizes are approximately bounded by the step size hyper-parameter, (3) it does not require a stationary objective, (3) works with sparse gradients, and (4) naturally performs a form of step size annealing.

The model will be trained and optimized until the accuracy reaches convergence without losing precision, recall and f1-score. Further improvements and approaches like adding convolution nodes and unsupervised learning with self-organizing maps will be explored to reduce misclassification errors and achieve higher accuracy.

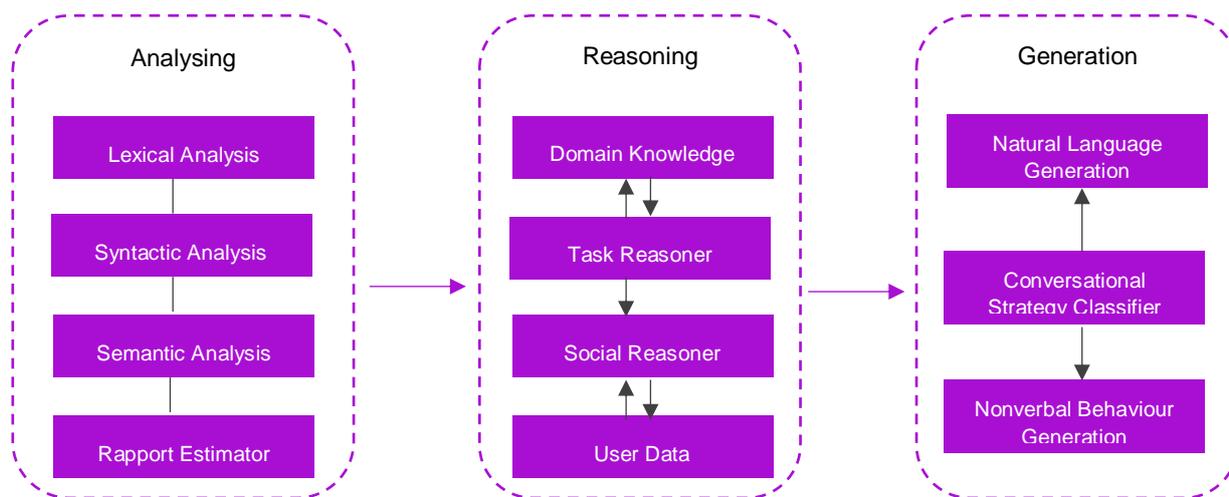
### Step 3 - Personality Matching

From the neural network learning, users will be assigned with their personality dimensions matrix. With this knowledge, Viola.AI will be able to better match, recommend and advice users to have an effective relationship.



### 2.4.3 Natural Language Empathy

By combining natural language processing (NLP) and Sentiment analysis, we will be able to understand users' feelings and perspective better, and to provide relevant actions.

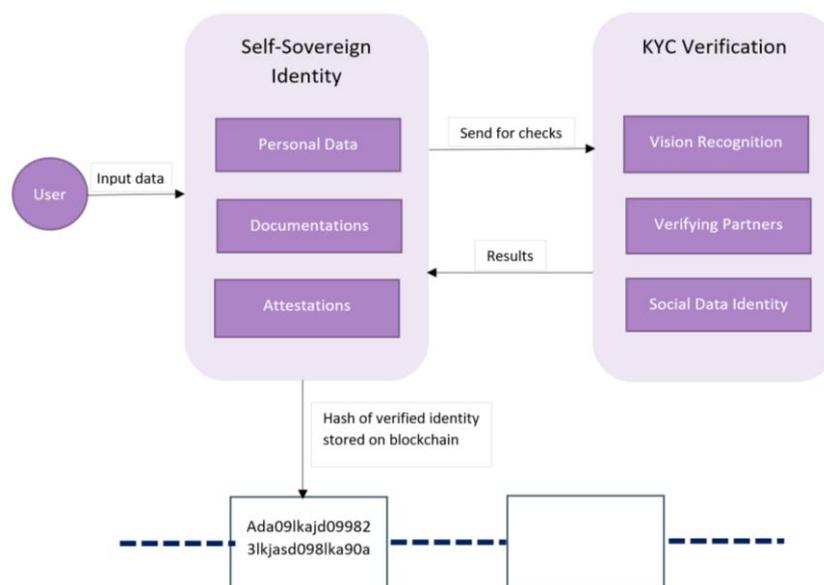


With natural language empathy, Viola.AI will be able to find out the mood of your partner so that the user can be notified of any current emotional concern. With all these knowledge, Viola.AI will be able to recommend suitable categories of actions for both users and their partners.

Another effort to humanize, Viola.AI will have an avatar that represent her with appropriate emotional responses based on the conversational content. With the ability to analyse the sentiment of the user, the avatar can display emotion to project a less intimidating and more realistic interaction with the users.

### 2.4.4 Blockchain Identity Verification

With the advancements in deep neural network learning, image recognition has opened up many useful applications that benefit both users and the Viola.AI ecosystem in a virtuous cycle. For now, we believe the best direction would be to leverage other 3<sup>rd</sup> party facial software that have developed this further than us.



The fully encrypted personal data with optional biometric locks will be securely stored in the user's phone. By keeping this data in the user's control instead of a centralized services or database, it will prevent the vulnerability to data breaches and may even lead to denial of service, in case the service is compromised.

#### 2.4.5 Cryptocurrencies and Blockchain - Viola.AI Wallet and Tokens

Viola.AI will be the open source cryptographic token that serves as a community currency in Viola.AI marketplace. It will be implemented on the public Ethereum blockchain as an ERC20 token.

Ethereum is the preferred choice for VIOLET token due to the following benefits

- Turing-complete trust-less smart contracts to enforce issuance and transactional rules
- Secure with cryptography and with no single point of failure
- Immutable to changes made by a third party

With the smart contract and decentralized nature of this blockchain, VIOLET will be used for all economic transactions within the marketplace and digital service of partners.

Viola.AI wallet will allow users to securely deposit, withdraw and view all transaction history of VIOLET token.

Viola.AI transactions are categorized into 2 main areas:

1. Internal Ledger transactions within Viola.AI marketplace
2. Deposit and withdrawal of tokens between Viola.AI and the Ethereum network

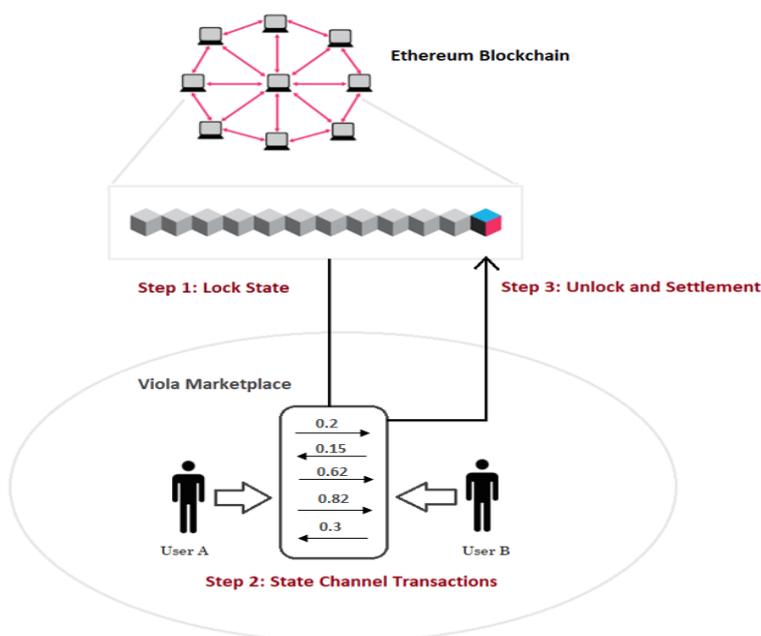
State channels mechanism are being proposed for bulk of the transactions occurring within Viola.AI marketplace. This provides significant improvements in terms of cost (gas) and speed (responsiveness).

The current underlying Ethereum network have mainly 2 potential challenges. Firstly, the transaction throughput limit that will result in longer settlement time as the volume grow with increase adoption of Ethereum. The current

throughput is ~8.5 transactions per second, or approximately 740,000 transactions daily. Secondly, every on-chain transaction, regardless of size, is required to pay a fee (gas). This discourages users from making any micropayment.

With the State channels mechanism, increase speed and lower fees can be achieved as shown in the following approach:

1. Two or more participants lock the blockchain state via multi-signature and smart contract.
2. Participants update the state amongst themselves by constructing and cryptographically signing transactions without submitting it to the blockchain. Each new update overrides previous updates.
3. At some later point, participants submit the state back to the blockchain, which closes the state channel and unlocks the state again.



Steps 1 and 3 involve Ethereum blockchain operations. However, Step 2 does not involve the blockchain at all. It can contain an unlimited number of updates and can remain open indefinitely. In this sense, the blockchain is used purely as a settlement layer to process the final transaction of a series of interactions for the final settlement, which helps lift the burden from the underlying blockchain.

In this regard, state channels enable any transactions to be processed instantly without facing the throughput limitations. It also has potential to reduce high transaction fees of small digital transactions. Users wishing to deposit and withdraw VIOLET token from the Viola.AI application will involve the public Ethereum network.

#### 2.4.6 Crowd Collaboration and Recommendations

Online forums and community groups have achieved a certain degree of success to allow wisdom of crowd to flourish. However, it is not easy to search for relevant relationship knowledge that is objective and specific to the user's context. On top of that, bad actors like spammers, misinformation or miscommunication may result in undesirable outcome for user's leading to an adverse impact on his/her relationship.

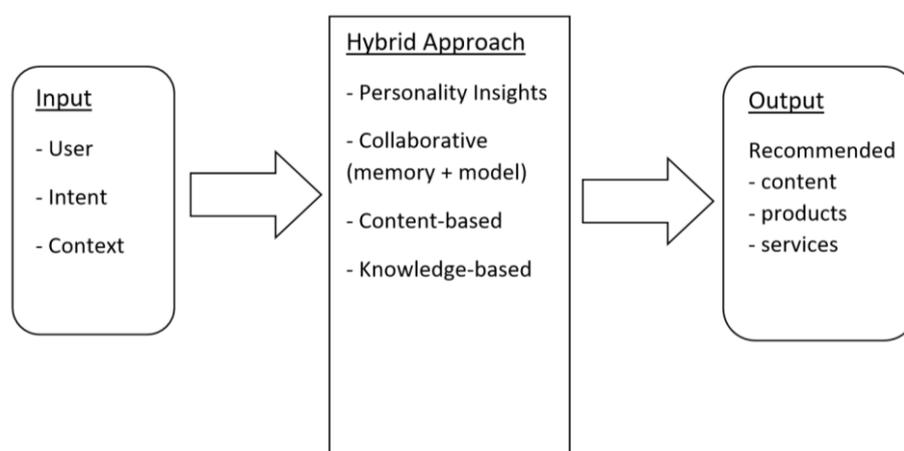
To mitigate these issues, Viola.AI will curate relevant content from the online communities with a hybrid model of collaborative filtering and content-based filtering. On top of this, Viola.AI will supplement with advice based

on both real-life experience and proven scientific model. This will allow users to be presented with a balanced view of crowd wisdom and advice from Viola.AI.

To provide the most relevant content, product and services to users, we will be using an ensemble of ML models and algorithms. A high-level discussion of the methods and rationale will be discussed here.

Combining the personality insights from the Core layer, together with collaborative and content-based algorithms, we believe this approach provides more accurate recommendations and overcome problems like cold start and sparsity.

For the collaborative layer, we will employ context-aware approach with a hybrid of memory and model based. With the awareness of contextual information like relationship status, time, location and social data, we can tailor for specific recommendations based on each current user situation.



To allow better accuracy in content-based recommendation, data imputation and mapping of products and services are critical. Vision recognition and natural language processing will aid in providing details of the products and services on top of information added by partners and merchant. Knowledge-based approach will be added due to the niche domain on dating and relationship. Also, due to the conversational nature of the online communities, explicit domain knowledge is needed to provide the relevant recommendation.

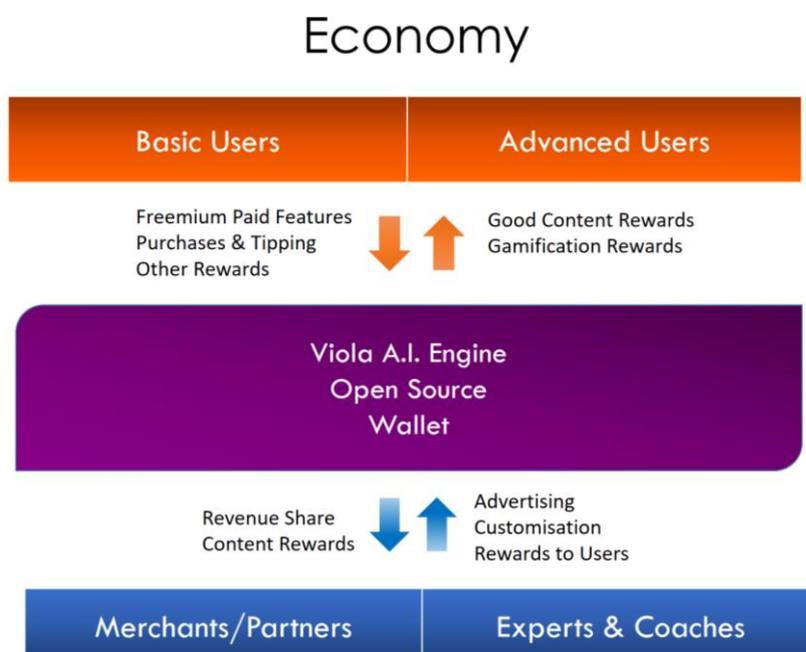
## 2.5 COMPARISONS

Advantages	Viola.AI	Other Dating Bots
<b>Real-ID Verification</b> Decentralised with Visual Recognition	✓	✗
<b>Deep Learning about Users</b> Background, Preference, User Behaviour, Conversation History	✓	✗
<b>For Singles, Attached &amp; Married</b> Seamless Transition	✓	✗
<b>Relationship Advices &amp; Solutions</b> 24/7 and Highly Personalised	✓	✗
<b>Arranges Real Dates</b> Hassle-Free Coordination	✓	✗
<b>Collects Feedback</b> Continual Machine and Deep Learning	✓	✗
<b>Reminders on Occasion</b> Smart AI Calendar	✓	✗
<b>Goods &amp; Services</b> Convenient & Wide Selection	✓	✗
<b>Community Support</b> Quality Content & Services	✓	✗
<b>Gamification</b> Improves Relationship with Fun	✓	✗
<b>Humanized Avatar</b> An AI bot with feelings & expressions	✓	✗

### 3. TOKENOMICS & SMART CONTRACTS

#### 3.1 TOKEN ECONOMY

Viola.AI's business model and ecosystem are centred on the VIOLET token. The token is both a utility and currency which is required for users to enjoy the services of Viola.AI in the following:



Token Uses	Description
<b>Payment for Goods and Services</b> With Hedged Escrow System	Users can use VIOLET tokens to pay for paid content, goods and services from the experts and merchants. Payments can be held in escrow according to the payment terms of the transaction.
<b>Community Usage</b> Quality Content and Advices	Rewards increase as the quality of content becomes higher. Level 1: Great content that helps the users Level 2: When the content is used by Viola.AI to improve her advice algorithm as well Level 3: When the content is very well used by Viola.AI and hits usage milestones
<b>Revenue Share</b>	For every transaction that experts/merchants and partners make, 1% to 10% of the revenue will be shared with Viola.AI., of which 5% will be burnt and removed from circulation.
<b>Advertising Fee</b>	Experts/ merchants can pay for Viola.AI's advertising programme by VIOLET tokens.
<b>Rewards</b> Referral	Referral program for users, merchants and partners to share into the revenue growth of Viola.AI by paid commission every time a person (or business) they referred makes a purchase or spends on advertising on Viola.AI

<p style="text-align: center;"><b>Rewards</b></p> <p>New Verified Users</p>	<p>A small amount of VIOLET Token shall be rewarded to each new verified user that joins the Viola.AI community to both encourage active use of Viola.AI and to make their first purchase.</p>
<p style="text-align: center;"><b>Rewards</b></p> <p>Gamification</p>	<p>Rewards given will be curtailed on regular updates that provide data, good usage of Viola.AI and achieving a high relationship or dating “score” in the gamification element of Viola.AI.</p>
<p style="text-align: center;"><b>Rewards</b></p> <p>Bug Bounty</p>	<p>Reporting bugs in Viola.AI can also earn points in VIOLET. The bigger the bug reported and verified, the more VIOLET tokens shall be given.</p>

It is important to note that the value of VIOLET token will be largely determined by the circumstances in the future with no guarantee possible on our side. The best we can do is to simply execute well to create a strong and useful product with good utility for the VIOLET token in the future.

### 3.1.1 Payment to Merchants and Hedged Escrow System

VIOLET tokens are required to purchase paid content, goods and services from the experts and merchants. The terms of the purchase will be stated by the merchant if it's a full payment, deposit with escrow, escrow with milestones or a full escrow transaction. The user/purchaser will indicate if he or she accepts the payment terms. Viola.AI will then process the transaction accordingly. If funds are to be held in escrow, Viola.AI will use its Ethereum driven Smart Contract escrow system to hold the funds and distribute accordingly upon the user's acknowledgement. The Escrow will be hedged against the value of the content, good and services purchases by using Ethereum and Bitcoin as the holding crypto-currency which will help stabilise the price during this escrow holding period. Viola.AI will make up for any differential in value when the funds are finally released from the escrow into the seller's hands.

#### Use Case

*Viola.AI reminds Elizabeth that it is Henry's birthday in 7 days' time. In response, Elizabeth asks Viola.AI for ideas on gifts to buy for Henry's birthday. Viola.AI is aware of both Henry and Elizabeth's habits and preferences, so she presents a list of relevant recommendations. Elizabeth then chooses the "Heavenly One-day Spa Couple Getaway" package to celebrate. The Merchant stated that the payment terms is a deposit with the rest of the payment held in escrow released when they both arrive at the Spa. Elizabeth agrees and uses Viola.AI to send the funds accordingly. Elizabeth surprises Henry on his birthday and when she arrives at the Spa, she uses Viola.AI to release the rest of the payment to them from Escrow. Very satisfied with the experience at the end of the day, Elizabeth gives the spa an additional small VIOLET token tip to thank them.*

### 3.1.2 Community Usage

To seek advice, content, ideas and even more options from the available merchants and partners, users can give a small VIOLET token as a “thank you” reward to the best response they get which they can select.

This is a huge incentive for experts, merchants and partners as Viola.AI will take note of the experts/ merchants that are receiving these VIOLET token rewards and they will be recommended more regularly as compared with

experts/ merchants that do not have a record of accomplishment. Users can also tip great content and ideas they see on Viola.AI, boosting the reputation of the content in Viola.AI's eyes as well as rewarding the producers of the content.

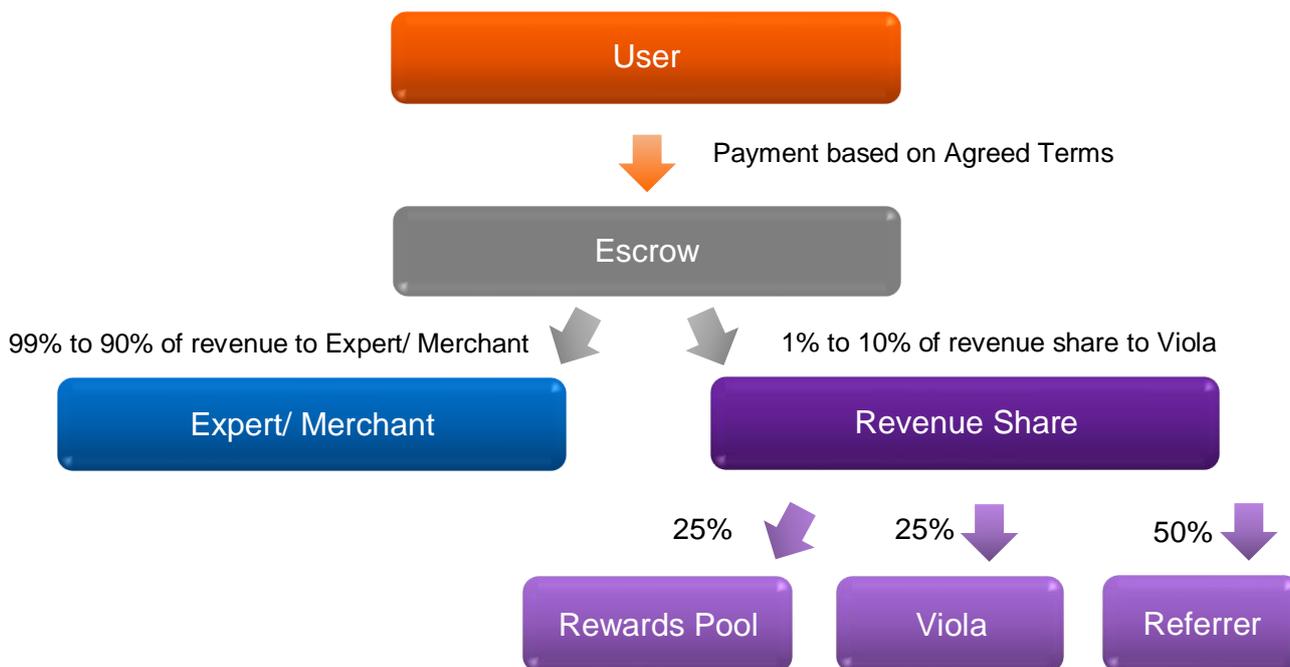
**Use Case**

*Elizabeth has been married to Henry for several years now. Recently she has been feeling more distant from Henry, especially after they had their 2<sup>nd</sup> child. Unsettled by this feeling, Elizabeth sends out an anonymous request to the community with a small VIOLET token reward (although she could have excluded the reward). She describes her problems and feeling towards her marriage and wants to know if it is normal. Soon, people starts to respond, including Viola.AI's bot. Elizabeth learns that a good number of the women in Viola.AI are in the same shoes and learns from their stories, experiences and outcomes. Viola.AI also chips in and let Elizabeth know the facts on her situation (from her huge DB analytics) and some proven concrete steps she can take to improve the situation. Elizabeth is thankful for the support and responses and gives the reward to Viola.AI who then distributes it evenly to all users who responded meaningfully.*

**3.1.3 Revenue Share**

All of Viola.AI's public user features and usage shall and will always be free.

To sustain Viola.AI, we will take a share of the revenue that the merchants and the partners collect for the transaction made on Viola.AI. For e-goods and e-content purchases, a range of 1% up to a maximum of 10% shall be shared. For goods and services purchases, a range of 1% up to a maximum of 5% shall be shared. Of the revenue share amount, it shall be further split on the Viola.AI platform with 25% to be sent to the Viola.AI Foundation for platform development and maintenance. Another 25% is sent to replenish the reward pool and 50% commission paid to the referrer. Where there is no referrer for a transaction, the 50% will be distributed to rewards pool and Viola.AI Foundation equally.



All revenue share arrangements will be programmed into Viola.AI's smart contracts for the appropriate execution and done in a trustless manner for the ease of mind for all sides.

### 3.1.4 Advertising

Merchants can use Viola.AI's advertisement program and pay for it via VIOLET tokens which creates another pillar for VIOLET tokens and more liquidity for users. For the users, any advertised content from the merchant will be clearly indicated to them to avoid any misunderstanding.

In addition, 5% of the advertising commission scheme will be programmed into Viola.AI's Smart Contracts for the appropriate execution to the referrer that brought the merchant into the Viola.AI's Marketplace as a "thank you" for helping to grow Viola.AI marketplace.

### 3.1.5 Rewards

To encourage the growth of Viola.AI, VIOLET tokens are rewarded for a range of actions taken by users.

- **New Verified User**

VIOLET tokens will be rewarded to new verified users to encourage active participation in the community and making their first purchases on the platform.

- **Gamification**

Gamification module of Viola.AI allows users to earn VIOLET tokens when they complete certain tasks and milestones which provide more data to improve Viola.AI's machine learning capability that helps users to better their dating and relationship journey.

- **Bug Bounty**

As Viola.AI seeks continual improvement on our platforms, reports on bug issues will be rewarded with VIOLET tokens depending on the severity of the bug.

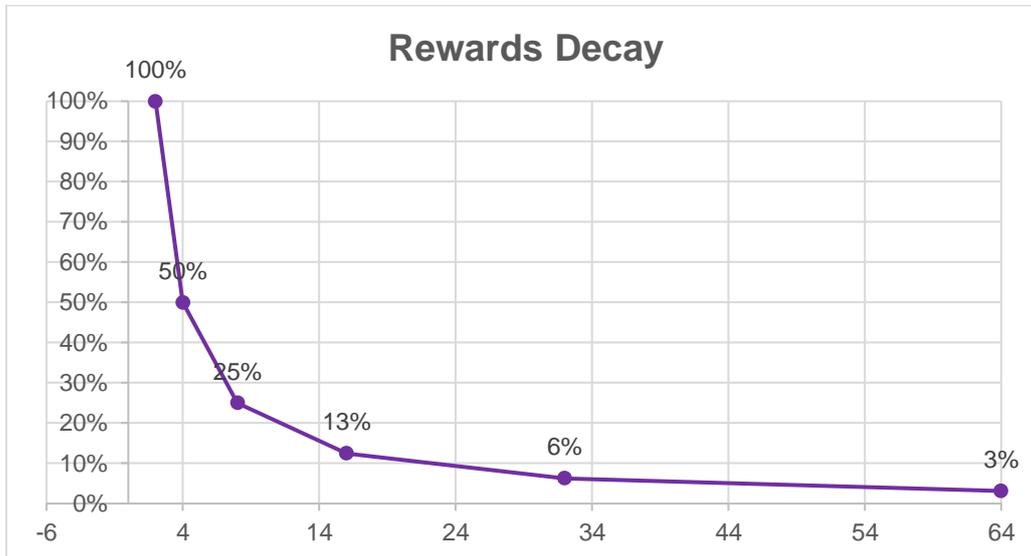
- **Referral**

When a referrer recommends another user to purchase any goods and services, we would reward the referrer with 10% of the 1% to 10% of the revenue share in VIOLET tokens for every purchase made. This essential gives them a lifetime of residual income and a great incentive for users, the community, merchants and partners to help grow the Viola.AI user-base with us.

Similarly, when the referrer introduces another business to purchase advertising from Viola.AI, the referrer will earn a commission of 5% of the advertising amount every time the business makes a purchase.

### 3.2 SUSTAINING THE REWARDS POOL

To prevent Viola.AI’s Rewards Pool from running dry, every time the pool decreases by 50%, the rewards shall be reduced by 1/2 accordingly. This helps rewards early adopters of the Viola.AI platform, keeping the pool from running out too fast. The rewards pool, however, is supported by the monthly 40% of the revenue share to Viola.AI which shall continue to replenish Viola.AI’s reward program for all parties and keep it at full capacity as much as possible.



Token Uses	User	Experts/ Merchants	Partners
Payment for Goods and Services	✓	✓	✓
Community Content Contribution	✓	✓	
Revenue Share		✓	✓
Advertising Fee		✓	
Rewards Referral	✓	✓	✓
Rewards New Verified Users	✓		
Rewards Gamification	✓		
Rewards Bug Bounty	✓	✓	✓

### 3.3 WHY VIOLET TOKEN?

Viola.AI is built by proven pioneers who have been in the industry for the last 13 years. Our founders are the leading dating entrepreneurs in South East Asia with a combined 4000+ media coverage including international media (e.g. BBC, Forbes, The Huffington Post). We are seasoned brand and business builders who are experienced in multi-country expansion; our brick-and-mortar businesses have presence in 6 countries. We are experienced managers, currently manage a team of over 110 people. We have developed several successful dating platform and services from scratch even we did not have much prior experience. We were hungry to learn and have managed to master the technology behind it. We are here to stay in the industry as we find it meaningful and have long staked our reputations and finances on it. We would apply all our experience and knowledge to ensure Viola.AI is a success.

Viola.AI is not starting from scratch and has a good foundation to grow upon. Once Viola.AI's is launched, we would have a base of 1.4 million users to work with as all of our services and products will immediately come in as integrated 3<sup>rd</sup> Party merchants/Partners from the start. We can cross market and cross sell it to our existing platforms to ensure that it is revenue generating from day one via the revenue share. Another important part of the success of any AI project is the adequate datasets to train with. Viola.AI can tap on our existing 3500 datasets and 1.1 billion data points accumulated over 13 years and will have over 100,000 dates to train and learn from. Our existing platforms already possess several key features that will be on Viola.AI, e.g. profiling, matching, arranging dates and collecting feedback. Therefore, we are not going on trial and error as we already have a huge amount of experience to tap on to ensure the features work well.

Viola.AI is designed to reward early buyers of the VIOLET token. The earlier tiers of the Token Sale give more bonus tokens to earliest backers of the project who help make Viola.AI a reality as a thank you for their faith in us and helping us to create a robust community earlier as well.

The VIOLET token can also be used on all our existing platforms ensuring there is decent amount of usage from the start. Hence, VIOLET token users will be able to spend their tokens on our other existing platforms as well. We have also identified partners whom we can work with to put Viola.AI and VIOLET tokens onto their platforms.

## 4. TIMELINE

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### 4.1 FIRST YEAR PRODUCT DELIVERABLES – MVP

We will spend 2018 and 2019 adding on to our existing chatbot development to add the AI depth and key features and should be able to complete these Minimum Viable Product core developments by the end of 2018 as below:

#### Product Modules

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##### 2018 Q2

##### Personal Relationship AI Assistant Module for Singles & Attached Couples (Phase 1)

- Provides personalized relationship and dating advice.
- Proposes compatible matches for singles
- Arranges dates with matches or partners by confirming the venue, date and time of the meetup.

##### Viola.AI Wallet, Marketplace & Token Application

- Securely deposit, withdraw and transfer tokens.
  - Get instant updates on each transaction.
  - View, monitor and verify transactions in the transactions history.
- 

##### 2018 Q3

##### Smart Features: AI and Blockchain

- Real-ID Verification: Ensuring the authenticity of the profiles using the latest computer vision technologies.
- Smart Recognition: Securing your profile using 'smart contracts'.

##### Personal Relationship AI Assistant Module for Singles & Attached Couples (Phase 2)

- Proposes weekend or holiday plans based on the couple's preference and personality.
- Emulates an expressive avatar that changes emotion according to the conversation's context.
- Integrates and organizes user calendar.

##### Marketplace Module

- Onboard merchants and partners for value-added services and products.
- Enables efficient purchase of services and products using smart contracts.
- Provides a feedback platform for service quality review.

##### Viola.AI Wallet & Token Application

- Escrow system developed
- Goods and service payment setup
- Basic revenue share and commissions smart contracts

##### Integration Module

- Integration with all Lunch Actually Group Ecosystem
- 

##### 2018 Q4

##### Smart Features: AI and Blockchain

- Smart Personality Assessment: Creating a data pipeline to build our deep learning models.
- Smart Match Recommendation: Matching profiles based on a machine learning algorithm.

## Product Modules

### Personal Relationship AI Assistant Module for Singles & Attached Couples (Phase 3)

- Curates relevant content from community.
- Predicts possible issues and proposes action plans for singles or couples.
- Recommends services and products to enhance relationship.

### Community Module

- Provides a Content Management System for users and experts to contribute in the community.
- Allows users and experts to earn rewards through their contributions.
- Includes a voting system to gain insights from the community.

### Viola.AI Wallet, Marketplace & Token Application

- Marketplace system set up with token and credit card usage
- Multi-tier commissions and revenue share smart contracts
- Basic reward program in place

## 2019 Q1

### Personal Relationship AI Assistant Module for Married Couples

- Provides personalized relationship advice for married users.
- Predicts possible issues and proposes action plans for married couples.
- Recommends services and products to enhance relationship.

### Community Module

- Enables a system of bid and offerings for digital services.
- Begin curation of content for Viola's A.I. learning
- Begin Rewards program for content curation

### Viola.AI Wallet, Marketplace & Token Application

- Include bids and offers token transactions
- More advanced A.I. recommendations engine for marketplace developed with ratings playing a bigger role
- More aggressive build up Partners, Experts and Merchants listings and offerings

## 4.2 36-MONTH ROADMAP

	2018	2019	2020
<b>The Products</b>	Dating module Courtship module Marriage module	Refinements Add a new segment (e.g. Parenting)	Refinements Add a new segment
<b>The Markets</b>	Singapore Malaysia Hong Kong Australia	US & Canada UK India Taiwan Japan (partner) Thailand Indonesia	Rest of the World
<b>Target No. of Users</b>	1.7+ million	8.5+ million users	25.5+ million users
<b>Sources of Revenues</b>	Revenue share Advanced Content	Advertising Special Customisation	Revenue Share Advanced Content Advertising Special Customisation

## 5. COMPANY BACKGROUND

### 5.1 VISION AND VALUES

VISION	CORE VALUES	MASSIVE TRANSFORMATIVE PURPOSE	BIG HAIRY AUDACIOUS GOAL
To be the world's most effective dating service	Inspire the Best in All Make It Happen Leave No Man Behind Stay Positive and Never Say Die	Better Lifetime Relationships	One Million Happy Marriages

We started out in the dating industry 13 years ago with the vision to be the “The World’s Most Effective Dating Service”. In the past few years, we have also included the Massive Transformative Purpose of “Better Lifetime Relationships” and BHAG of 1 million happy marriages.

It has not been easy to stay true to this vision as competitors have employed capitalistic tactics of using fake profiles to avoid starting from zero database and some started using bots and bait users to sign up for paid subscriptions to raise their revenues, gaining a quick competitive edge over us. Being effective meant that your best customers leave you and you earn less which is one of the paradox of dating industry. However, we are reminded about our vision through the many thousands of dating couples and married couples who have met through our multitude of services that operates in 6 countries of Singapore, Malaysia, Hong Kong, Thailand, Indonesia and Japan (Joint Venture with mixi, Inc).



### 5.2 PLATFORMS AND DATA/CONTENT

In response, we have chosen to invest heavily into research and development over the last decade to fulfil our vision and BHAG. We started with an offline dating service with high price points and manual processes which meant limited scalability. However, this ensured we had plentiful of real face to face experience and knowledge about singles and it helped us understand what they wanted.

Leveraging on our experience, we launched esync.dating 7+ years ago, an online “hybrid” matching service with a lower price point. After completing a comprehensive quiz, users will be matched through our comprehensive matching algorithm based on 16 areas of compatibility. The twist is singles can enjoy a personalized service by communicating with our dating consultants over the phone or text. This ensures singles do meet up with their matches over a date. This well-received hybrid product is now a multi-million-dollar business.

4 years+ ago, we created Lunch Actually Academy, our education arm that helps singles improve their first impressions and dating skills so that they would be more successful in their dating journey. The tens of thousands of coaching sessions have produced plenty of proven material and content that we can deploy in Viola.AI. We have also entered the relationships market with couple events and relationship coaching.

2 years+ ago, we launched our LunchClick dating app, a self-service platform that focuses on bringing singles from online to offline (real dates) as soon as possible. All our matching platforms are centred on bringing people on real dates and in total, we have arranged more than 100,000 dates. Dates feedback is incorporated into our system. We have accumulated not just online dating behaviour but also post-date data because all our services are full loops i.e. we have data on what happens offline in real face to face dates. Hence, we have a unique advantage over most other dating services that tend to be focused just online or offline. In the last 13 years, we have accumulated over 1.1 billion data points in over 3500 datasets giving us a strong foundation for training sets for A.I. development.



#### **Business Footprint**

Singapore, Malaysia, Hong Kong, Thailand, Indonesia, Japan (JV)



#### **Product Ecosystem**

2 Online Sites, 3 Offline Services, 4 Dating Apps,



#### **Data**

Over 3500 datasets  
1.1 Billion Data Points



#### **Members**

Over 1.4 Million +



#### **Matches**

Over 30.1 Million



#### **Dates**

Over 100,000



#### **Strong Content Network**

Matchmaking Institute and Field Experts



#### **Business Monetization**

Freemium, Mass, Premium



#### **Industry Experience**

Industry pioneer with over 13 years' track record in the industry

## **5.3 EMBARKING ONTO VIOLA.AI**

With Viola.AI, we are embarking on our most ambitious project to date, one that could possibly render most of our earlier dating platforms obsolete. But in the years of conceptualizing and planning for Viola.AI, we believe that we must not be afraid to “attack” ourselves but we must always be at the forefront of tech developments.

All of Viola.AI development and IP are placed under a separate company subsidiary called “Viola Tech Pte Ltd”, will have its own team and will operate like a start-up. This helps us ensure proper distance between the entities and ensure that all funds received from the token sale is only used for Viola.AI development.

## 5.4 TEAM & DEVELOPERS

### 5.4.1 Core Team Members



**VIOLET LIM**  
Co-Founder  
Chief Executive Officer

Violet Lim has been in the dating industry for over 13 years. She has proven expertise in brand building. Over the years, Violet has built a strong brand equity for Lunch Actually Group's products with over 4000 media appearances worldwide. Violet will spearhead Viola.AI's brand building efforts which are critical to the expansion plan of Viola.AI.



**JAMIE LEE**  
Co-Founder  
Business Development Head

Jamie Lee is a visionary who has conceptualised many of our past products. Viola.AI is his brainchild that has been in the making for 2 years. With his knowledge and strong belief in the potential of A.I and blockchain technology, Jamie provides the strategic, business development and commercialization direction for Viola.AI.



**ZAM ONG**  
Co-Founder  
A.I. & Crypto Protocol Architect

Zam Ong is highly experienced with 15 years in technological development. He has expertise in A.I. and has been leading the research and development in Cryptocurrency and AI. Zam is designing Viola.AI's blockchain and A.I. technologies to create a powerful, decentralised and personalized AI engine for Viola.AI.



**NIKKI ASSAVATHORN**  
Co-Founder  
Chief Product Officer

Nikki has 10 years of entrepreneurial and international business experience in building start-up companies, launched products and sold tech companies. She also has strong hands-on experience in product development and UI/UX. With her collective experience, Nikki drives the application design and development of Viola.AI.



**MARTTI DUMANGENG**  
Blockchain & Technology Solutions Head

Martti has 10 years of holistic experience in full stack development, A.I. and Machine Learning, database administration and blockchain development. He is highly experienced in building cloud infrastructure and security designs. Working on many aspects of the smart contract development and technology architecture of Viola.AI.



**BRYAN CHU**  
Artificial Intelligence & Data Analytics Scientist  
Bryan has strong technical knowledge in data analytics and database systems. He is instrumental to the adoption of most suitable backend infrastructure to support the blockchain and AI technologies of Viola.AI. Leveraging on his expertise, Bryan will work on the development of AI solutions to be provided for Viola.AI.



**CHRISTINA THUNG**  
**Head of PR**

With 8 years of experience in PR, Journalism and Communications, Christina has successfully led the branding initiatives as the Group Head of PR & Partnerships for Lunch Actually Group, and generated over 200 media coverage in 2017 across Asia. With her collective experience, Christina will spearhead the PR efforts for Viola.AI.



**LI YHEE CHIN**

**Business Development & Partnerships**

Li Yhee has a strong interest in cryptocurrency and blockchain innovation. She is experienced in strategy and business development and is a current MBA candidate at National University of Singapore. Leveraging her knowledge of blockchain community, she focuses on business development and partnerships of Viola.AI by connecting client stakeholders across various domains.



**FRED LACORTE**

**Head of Community Management**

Fred is the marketing expert with 9 years of progressive record in crowdfunding, retail-HNW investments and dating services in Asia. He is experienced in leading online marketing effort in Lunch Actually Group. Combining with his strong interest in Blockchain technology, Fred will lead the content strategizing and community management of Viola.AI.



**MOHAN RAJ SIVAKUMAR**

**Senior Software Engineer**

Mohan has strong expertise in full stack development and infrastructure development across banking, academic and technology industry. He attained Master of Computing in National University of Singapore. Mohan will focus on building a secure and robust backend infrastructure for Viola.AI platform and product development.

## 5.5 ADVISORS



**LISA CLAMPITT**  
**Advisor**

Founder and President of the Matchmaking Institute (MMI) in New York, connecting relationship professionals to spread the love. The MMI is the biggest network of dating professionals and coaches worldwide.



**HONG TING WONG**  
**Advisor**

An early adopter of cryptocurrencies over 3 years ago and a serial entrepreneur, Hong Ting is currently founder & CEO of Botbot.AI and 2359 Media, powering businesses with A.I. technology.



**DATO LARRY GAN NYAP LIOU**  
**Advisor**

Larry was the Managing Partner for Accenture Asia, and between 1999 to 2003 he managed the firm's multibillion dollar Venture Fund in Asia Pacific. Presently, he is Chairman of Cuscapi Berhad, Rev Asia Berhad and Diversified Gateway Solutions Berhad and the British Malaysian Chamber of Commerce and the CEO/Managing Director of Formis Resources Berhad.



**BRUNO VANRYB**  
**Advisor**

Bruno Vanryb is a French Serial Entrepreneur who founded Avanquest, a listed and global software publisher. Bruno Vanryb currently heads Be Brave, a consultancy firm, and act as an Executive advisor for different Tech companies. Bruno Vanryb is also Senior Partner at Avolta, an M&A and Fundraising Boutique currently involved in various ICOs.



**PHILIPPE RODRIGUEZ**  
**Advisor**

Philippe is the President of Bitcoin Association in France since 2014. He had founded Avolta Partners which actively helps raise capital and manages M&A process for various ICOs and startups in the technology industry. Other than holding Masters in Computer Science and MBA, Philippe is also an author of the book "La Revolution Blockchain" published by Dunod.



**MICHAEL REECE**  
**Advisor**

Michael is a blockchain entrepreneur with 5 years of experience in cryptocurrency and launching of ICO, supported by his 25 years of full stack developer experience in IT business. In addition, Michael owns NicheAdNetwork which is a niche market advertising network with a large dating online presence with over 200 million impressions a month.



**PETER SIN**  
**Advisor**

Peter Sin serves as the Co-Head of Digital Currency Sub-Committee of Singapore Cryptocurrency and Blockchain Industry Association (ACCESS) and the Co-Founder of Singapore Bitcoin Club, Singapore's largest cryptocurrency trading educational community. He joins selected ICOs as advisor, including MEGAX, VRT World, and Bounties. He is a frequent speaker and panelist on forums and seminars on cryptocurrencies. Peter is an experienced financial professional in Singapore's leading financial advisory firm.



**CALEB YAP**  
**Advisor**

Caleb is one of the Co-Founder of Singapore Bitcoin Club, Singapore's largest cryptocurrency trading educational community. He regularly conducts educational workshops and seminars on cryptocurrencies. His views on different investment strategies and different aspects of cryptocurrency are highly valued by the local community. Besides, he is also an experienced real estate consultant with one of the largest property agency in Singapore.



**PRAKASH SOMOSUNDRAM**  
**Advisor**

As a highly ranked as an influencer in the fintech space in Asia, Prakash is active in startup ecosystem development and promotion in Singapore. He is leading two ICOs, as Strategy and Corporate Development for Lalaworld and Co-founder for Aditus. In 2016, he was awarded as one of Singapore Indian Business Leaders (SIBL). Prakash is also a leading digital entrepreneur who founded Yolk that served Lenovo, Microsoft and Singapore's Ministry of Communications.



**KENNETH TAN**  
**Advisor**

Kenneth is currently the co-Founder at FundYourselfNow, a Singapore-based crypto-currency crowdfunding platform. He is a thought leader and active writer in the blockchain space and has several media coverage as Business Times Singapore, and major crypto publications. He has over 10 years of experience in consulting for MNCs and government agencies in the design, development and implementation of digital applications and platforms.



**BRIAN CONDENANZA**  
**Advisor**

As an early investor in Bitcoin, Brian shares a passion for blockchain technology. Today, Brian advises blockchain companies to achieve their goals & uses his experience with social media to help them connect better with their audiences. He is also an Internet entrepreneur, founder of Fluo Shoes and has been featured in the media such as the Huffington Post, New York Mag and The New York Times.



**ALEXANDER HAXTON**  
**Advisor**

Alexander was an early adopter of Bitcoin in 2012. He began trading and investing in Bitcoin while being a cryptocurrency advocate on social media. Since then, he has become a cryptocurrency and blockchain consultant and advisor to companies seeking to embrace the blockchain and cryptocurrency sphere.



**WARREN WHITLOCK**  
**Advisor**

Warren Whitlock is a digital business development strategist and one of the top influencers in the blockchain space. He has helped businesses transform to a new way of doing business using social media and online marketing and promotion to attract the right audience from the 2 billion people using Internet. Warren has worked in technology, business services and broadcasting, and is currently involved with media, health and several startups.



**JEREMY KHOO**  
**Advisor**

Jeremy Khoo is a business operator with a passion for the Southeast Asian e-commerce space. He is currently Group CEO of iFashion - a leading multi-million regional fashion and lifestyle retail company of which Jeremy co-founded retail blockchain MegaX which successfully conducted a token sale and deployed the cryptocurrency for use. He also advises and help build exciting blockchain projects such as Consentium.



**RAYMOND NG**  
**Advisor**

Raymond Ng is a pioneer of Open Source in Singapore, having organized the Singapore Linux Conference & LinuxWorld Expo 20 years ago. Raymond Ng also majored in Artificial Intelligence during his study of Computer Science in National University of Singapore, and he used Open Source to develop AI applications.

## 6. TOKEN SALE

### 6.1 INITIAL TOKEN SALE

The soft cap we need to power this project forward is US\$1 million, while the hard cap is US\$12.5 million. When we hit the full hard cap, we will be able to develop the project further and take Viola.AI global faster.

### 6.2 OVERVIEW OF TOKEN SALE

Items	Details
<b>Project Description</b>	Viola.AI aims to be the best AI service and marketplace for dating and relationships when it is fully launched
<b>Token Symbol</b>	VAI
<b>Token Background</b>	VIOLET is built as an ERC20 token on the Ethereum blockchain which ensures security and high liquidity of the token's ecosystem.
<b>Start Date</b>	Target on 14 Mar 2018
<b>End Date</b>	13 April 2018 or earlier if the hard cap is achieved
<b>Soft and Hard Cap</b>	US\$ 1 million (soft) US\$12.5 million (hard) – End of Campaign's exchange rates determine if cap is achieved.
<b>Listed on Exchange</b>	In Progress
<b>Token Public Sales Price for one VIOLET</b>	US\$0.20
<b>Exchange</b>	US\$1 to 5 VIOLET
<b>Maximum Token Supply</b>	A maximum of 250 million tokens
<b>Tokens for Crowd Sale</b>	37% of total supply
<b>Pre-Sale Available</b>	Yes – Maximum 7.5 million tokens Pre-sale has closed successfully.
<b>Accepted Crypto Currencies</b>	BTC & ETH

## 6.3 HOW IT WORKS

The following will be how the Viola.AI Token Sale will work:

- All purchases must complete their KYC process for the purchase to be legitimate.
- All the funds from the Token Sale shall be held in Escrow till the end of the Token Sale success or failure. If we are unable to sell at least US\$1 million of tokens in all, we will make full refund to purchasers.
- After the Token Sale, VIOLET tokens will be tradable on a recognized exchange or ERC20 token exchanger and at some points in the future after that. We will actively get our tokens listed as soon as possible.

## 6.4 TOKEN SALE SCHEDULE AND BONUSES

Timeline	Details
<b>Pre-Viola.AI Public Token Sale</b>	KYC and whitelisting process begin. Details of interested parties will be collected. Pre-sale available for strategic buyers and people who are interested in coming in early before public sale for the best rates
<b>Pre-Viola.AI Public Token Sale</b>	Each participant will be informed of the individual cap on the VIOLET tokens. This ensures as many people as possible have access to purchase VIOLET tokens which will help with the business aspect once the product is launched.
<b>Viola.AI Public Token Sale</b> Token Sale Day, 14 Mar, 12pm First 24 hours: 20% bonus	Token Sale Day on 14 Mar 2018 at 12:00PM at Singapore's Time Upon the start of the public sale and in the first 24 hours (1 day), whitelisted users are able to participate in the Token Sale and they are subject to their individual cap and will get 20% bonus tokens.
<b>Viola.AI Public Token Sale</b> Day 2 & 3: 15% bonus	After the first 24 hours (1 day), the tokens will be sold to the Whitelist without individual cap at 15% bonus tokens for the next 2 days.
<b>Viola.AI Public Token Sale</b> Day 4 to 10: 10% bonus	After the first 3 days of the token sale, the tokens will be sold to the Whitelist without individual cap at 10% bonus tokens for the next 7 days.
<b>Viola.AI Public Token Sale</b> Day 11 to 30: No bonus	After the first 10 days of the token sale, the tokens will be sold to the Whitelist without individual cap and bonus tokens for the next 20 days or when hard cap is hit based on the current ETH and BTC exchange rates, whichever comes first.
<b>Viola.AI Public Token Sale</b> Last day on 13 April 2018	End of Viola.AI Token Sale at 12:00PM at Singapore's Time
<b>Post – Viola.AI Token Sale</b> Token Sale end day + 3 days	All unsold tokens will be burnt 3 days after Viola.AI Token Sale
<b>Post – Viola.AI Token Sale</b> Token Sale end day + 7 days	Issuance of VIOLET tokens. Amount of VIOLET to be issued is pegged against the exchange rates at the point of purchase and at the end of the token sale, whichever is the highest.

## 6.5 TOKEN STRUCTURE

### 6.5.1 Token Distribution

The following diagram illustrates how VIOLET tokens will be distributed among various stakeholders.

**Token Distribution**



- **Token Sale (37%)**

A maximum of 92.5 million tokens will be issued for the token sale. Any bonus tokens issued will have a lockdown period of 60 days upon the end of Public Token Sale. The bonus tokens will be issued 60 days after the end of Public Token Sale. The token amount purchased is calculated based on the exchange rate at the point of purchase or the end of Token Sale, whichever is higher.

- **Rewards & Bounty Pool (28%)**

The rewards program is an important part of the growth, community, content creation and engagement strategy for Viola.AI.

- **Company Reserve (25%)**

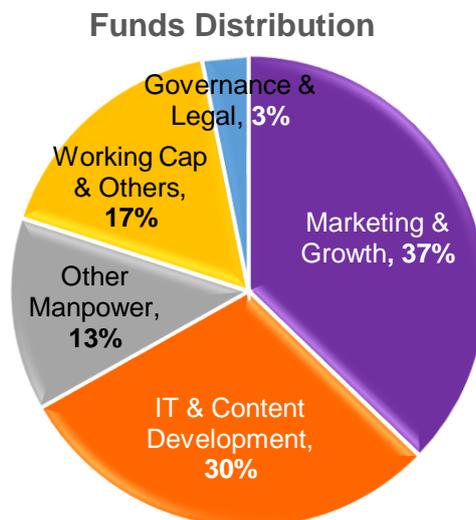
Company Reserve Pool is used for future development, including future fund raising, academic research and for expanding the rewards pool. This reserve shall have a 1-year vesting.

- **Team, Partners and Advisor Pool (10%)**

All team members will be vested in the Company for a total of 2 years with the 30% of the tokens vested till the 1<sup>st</sup> Year and the rest of the 70% tokens vested till the 2<sup>nd</sup> Year. This will include an option pool for future associates as well. For advisors, they will be vested for 6 months.

## 6.5.2 Use of Funds

The following diagram illustrates how the funds raised from VIOLET Token Sale will be utilised for various function to support the development of Viola.AI.



- **Marketing & Expansion (37%)**

The largest portion of funds will be invested on business expansion (which includes branding, marketing, business development) to help Viola.AI to go global quickly and enjoy economies of scale. The bigger the user base and the transaction volume, the higher the VIOLET token's valuation and liquidity.

- **IT & Content Development (30%)**

The next biggest cost item would be the research, IT development, content development and IT maintenance required for Viola.AI to become a truly useful and effective tool for all users. In research, we would work with reputable academic partners to ensure Viola.AI is developed based on solid scientific principles while partnering with practicing experts in their respective domains for more practical and pragmatic content to be put on Viola.AI to value add to users.

- **Other Manpower (13%)**

Funds will also be needed to build the project team (excludes IT team) to grow and execute the plans for Viola.AI. The team is estimated to grow up to 25 to 28 people by year 3.

- **Working Capital, Reserves & Others (17%)**

Working capital and other expenses includes the many support functions, rental and other operational costs that is involved in running a business. This includes a cashflow buffer for unforeseen circumstances as well.

- **Governance & Legal (3%)**

In the expansion effort and as the company grows, the legal and governance area includes costs to maintain the company.

## 7. FINAL WORDS FROM THE FOUNDERS

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13 years ago, we started out in the love industry with a 3-people team and today, we have grown into a regional dating powerhouse with over a 110-people operation with presence in 6 countries. Over the years, we have focused all our energies and efforts on two core principles that have brought us to where we are today.

FIRST, we are committed, and we are here to stay in the love industry. Every single day, we are humbled by the impact that we have made on our customers' lives; the life journeys they have cultivated together, the family units they have formed and the children that came after. Despite the many challenges, it has been a meaningful, fruitful and mostly enjoyable career path for the both of us, knowing we have made a difference in people's lives.

SECOND, we believe in the power of technology to propel mankind to greater heights. And to stay ahead, we must be in the forefront of technology. We could have been contented to stay in our high margin offline business and make it into a lucrative "lifestyle business". Instead, we chose to continuously reinvest our profits into R&D and build new technology and new products. From developing one of the most comprehensive and powerful matchmaking CRMs which many other matchmakers have been modelling after to developing unique online dating products like esync.dating (the region's first hybrid dating service), LunchClick (the first app that focuses on being people from online to offline dates) and to acquiring comprehensive compatibility matching systems like Setipe (the largest serious online matchmaking site in Indonesia), we have always kept abreast of the next big trend and the latest technologies that we could leverage on.

The Blockchain and A.I. revolution has just begun. Even though it is still in its infancy, we know with certainty that this revolution would shake up many industries and businesses including ours. We believe that this would be the key to building a better dating and relationship industry. This revolution would also enable the crowd to share in the fruits of their contributions via smart contracts and spread the financial benefits to the many rather than being left in the hands of a few. A.I. technology often has a bad reputation; slated to putting millions of people out of job and potentially creating chaos. We are convinced that A.I. technology can be channelled to create love and promote better understanding for relationships.

We have a dream. Our dream is to transform the global dating and relationship landscape by helping billions of people create better lifetime relationships. We believe this can be done through Viola.AI. - an AI driven, decentralised market place for love and relationship. By being part of our project, you are helping us fulfil our dream. By being part of our project, you are helping billions of singles and couples fulfil their dreams of finding love and happiness. We thank you for your consideration and your support.

Love,

Jamie and Violet

On behalf of the Viola.AI team