



bubblo



Morgan Lewis

# TABLE OF CONTENTS

1. Executive Summary
2. Meet Bubblo
3. Vision Mission and Philosophy
  - 3.1 Bubblo Vision
  - 3.2 Bubblo Mission Statement
  - 3.3 Bubblo Philosophy
  - 3.4 The Centralized Review Problem
  - 3.5 Bubblo Gives Consumers What They Want
  - 3.6 Bubblo Gives Businesses What They Need
4. Bubblo Target Market
  - 4.1 Industry Landscape
  - 4.2 Differentiation
  - 4.3 Competitive Advantages For Both App And  
Future Token Offering
5. Partners/Investors Brands
6. Traction Timeline
  - 6.1 Mumbai Case Study
7. SWOT ANALYSIS
8. Bubblo Token Launch
  - 8.1 Token Functionality
  - 8.2 Token Distribution
  - 8.3 Use of Token Sale Proceeds
  - 8.4 BUBL Benefits Explained
  - 8.5 BUBL Token Summary
  - 8.6 Token Support
  - 8.7 Assurance
9. Technical Overview of BUBL Token
  - 9.1. Overview
  - 9.2. Proof of Intelligence
  - 9.3. Mediation of data rights
  - 9.4. Simulations
10. Team
11. Advisors

# 1. EXECUTIVE SUMMARY

Bubblo is an AI powered discovery app and marketing platform that harnesses the power of blockchain to empower users to commoditize their personal data and bargain it with businesses in exchange for deals, discounts and prizes.

Bubblo is a curated discovery app that utilizes the latest AI frameworks to help users discover their very own personalized TOP 5 venue recommendations. The app crunches social network and review site data to rank bars, clubs, and restaurants based on Facebook likes, Twitter followers, the number and frequency of Instagram pictures, check-ins, star ratings and sentiment analysis on reviews from Google, Foursquare, Trip Advisor, Yelp etc. As a result, Bubblo offers a simple, visual way of locating bars, clubs, and restaurants to truly know everything about a venue before ever stepping foot inside through 360 degree virtual reality videos, real-time videos/deals, and the gender ratio of places.

Businesses in-turn can use the hyper-local targeted marketing platform to send deals, videos, and video deals directly to users in their area actually looking for their services and check how effective the ads are through automatic, anonymous check-ins. Bubblo has huge B2B possibilities because it is the first marketing platform integrated with a big data discovery platform on the blockchain.

Bubblo's Blockchain platform will be an innovative instrument to incentivize and reward the major parties involved in the Food and Beverage industry (customers, businesses, and marketers), keeping them all engaged in conversations with one another and with permission access to information on each other in a safe, secure, and real-time manner.

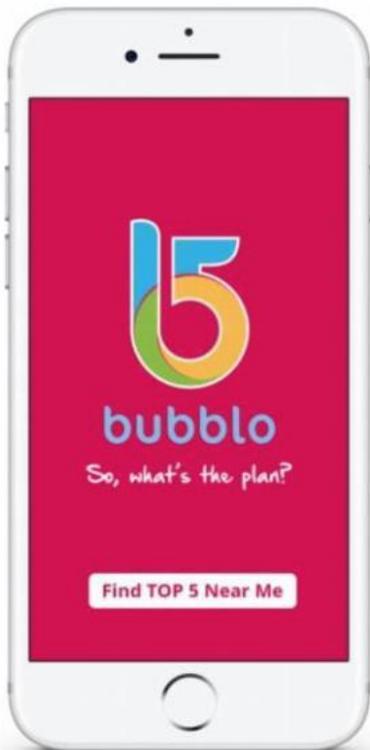


*"We at Bubblo aim to provide our users with the best platform for Food, Beverage and Retail transactions, with a successful AI powered mobile app"*



- BUBBLO

## 2. MEET BUBBLO



Bubblo is an intelligent discovery app. It harnesses “the power of AI” to help users discover their very own personalized TOP 5 venue recommendations.

Bubblo is also able to help businesses develop a real-time advertising presence which they can track via automatic anonymous check-ins.

Our mission is to integrate both the digital and physical aspects of an experience into a simple presentable format.



*“My job is to travel the world looking for companies that are best placed to integrate and promote the capabilities of IBM Watson. Bubblo immediately was that company.”*

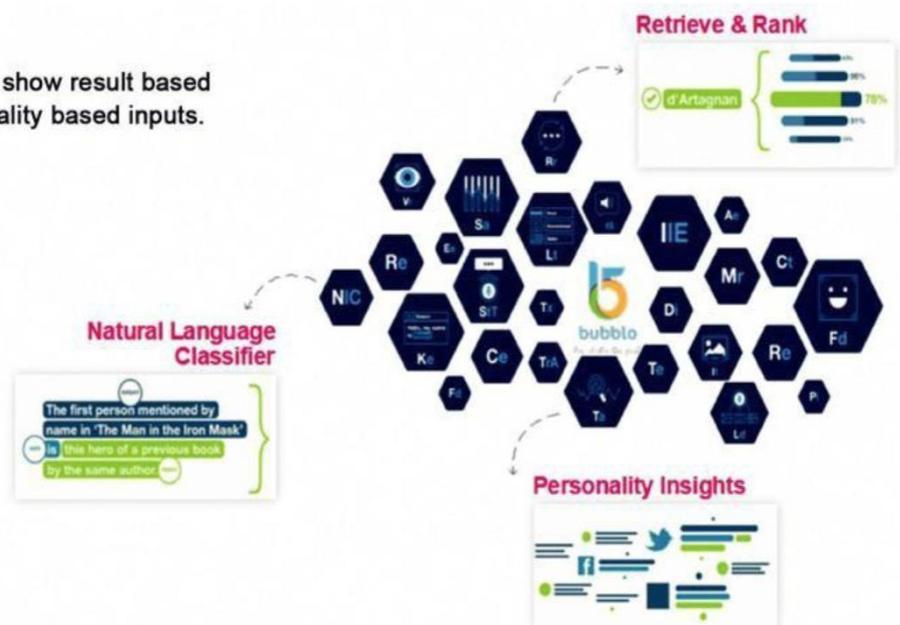


- RAY DHILLON  
Head of Business  
Development Asia-Pacific  
IBM Watson

### 2.1 Tech Partnership (Bubblo & IBM Watson)

#### Bubblo to leverage IBM Watson APIs

To apply cognitive capabilities in order to show result based user behavior, location, and other personality based inputs.



## 3. VISION MISSION AND PHILOSOPHY

### 3.1 Bubblo Vision

To aggregate the digital and physical worlds and present them in a simple visual way.

### 3.2 Bubblo Mission Statement

At Bubblo our mission is to create a user and business ecosystem that is up to date on each other by incentivizing all parties concerned to share personal data, deals, discounts, and content: User friendly accessibility to information, deals, and videos of nearby vendors.

Easy and fluid interaction between the businesses and their potential patrons.

### 3.3 Bubblo Philosophy

Our philosophy can be summed up in seven simple principles:

1. To provide all the relevant information to users who are planning to explore the city they reside in, or any city around the world.
2. To provide venues with the means to interact with potential patrons at the precise moment, when patrons are making the decision to socialize.
3. To keep rates reasonable and easy to recoup.
4. To provide both users and businesses with valuable information from the content that they post.
5. By introducing Bubblo as an app that is intricately connected to the real world, by marketing it in numerous creative and on-the-ground guerrilla campaigns, rather than solely online.
6. We strive to be a high-octane company that is constantly working to improve its products and services, increase profits, and provide customer satisfaction while maintaining high ethical standards.
7. All features and designs must elevate and improve the nexus between B2B and B2C connectivity because when this is at its best, everyone benefits.

### 3.4 The Centralized Review Problem

**Consumers:** The discovery app landscape is not reflective of a myriad of elements such as social media, the real-time deals and the actual environment of bars, clubs, and restaurants. Existing tools either provide large lists or show dozens of pins on a map to suggest places to go out to users. These suggestions are not very helpful in narrowing down user's choices to help them decide.

Additionally, current social networks and review sites are not transparent about what data they collect from users and who they sell that data to.

Moreover, users do not currently benefit monetarily or otherwise from the use and sale of their personal data.

**Businesses:** Bubblo seeks to solve the problems faced by businesses in participating in the digital world. Currently, most businesses have no means to accurately advertise in real-time to potential patrons in the area, through mobile devices.

Venues can currently advertise on various discovery tools, but all these companies act as a filter between potential patrons and their advertising. There is no means for venues to reach out directly to nearby consumers as they would with a billboard or a staff member on the street trying to get people through the door.

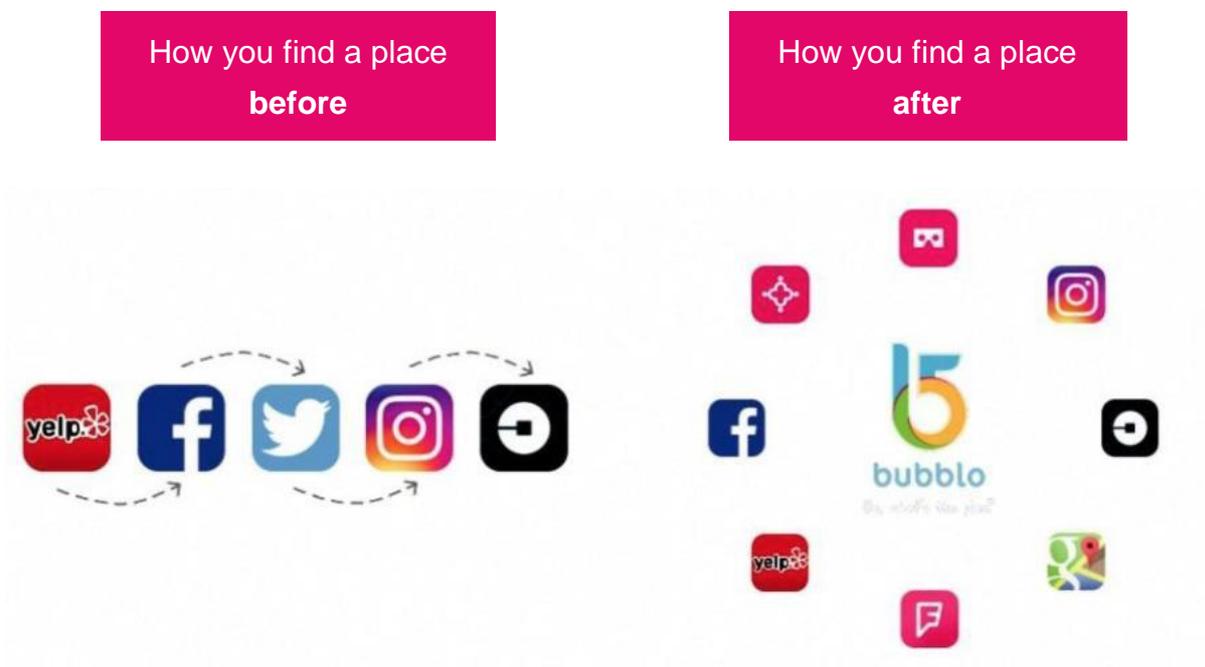
In the case of digital ads that venues do place on various other sites, they do not have a means to accurately gauge how effective their ads were in attracting patrons to their venue.

A lack of such data has prevented local bars, clubs, and restaurants from accurately and effectively advertising on mobile devices. Bubblo gives businesses the tools to track the success of a mobile ad campaign and advertise to customers in real-time.

### 3.5 Bubblo Gives Consumers what they Want

Based on social media likes, followers, the number and frequency of pictures as well as check-ins on social media, Bubblo is able to utilize social media and review site data to rank a variety of venues.

Bubblo offers a simple and a visual way of judging bars, clubs, restaurants and retail before ever stepping foot inside.



Through 360 degree videos, real-time video deals, the gender ratio of a place and other real-time content Bubblo help users experience venues in ways they never could with existing players.

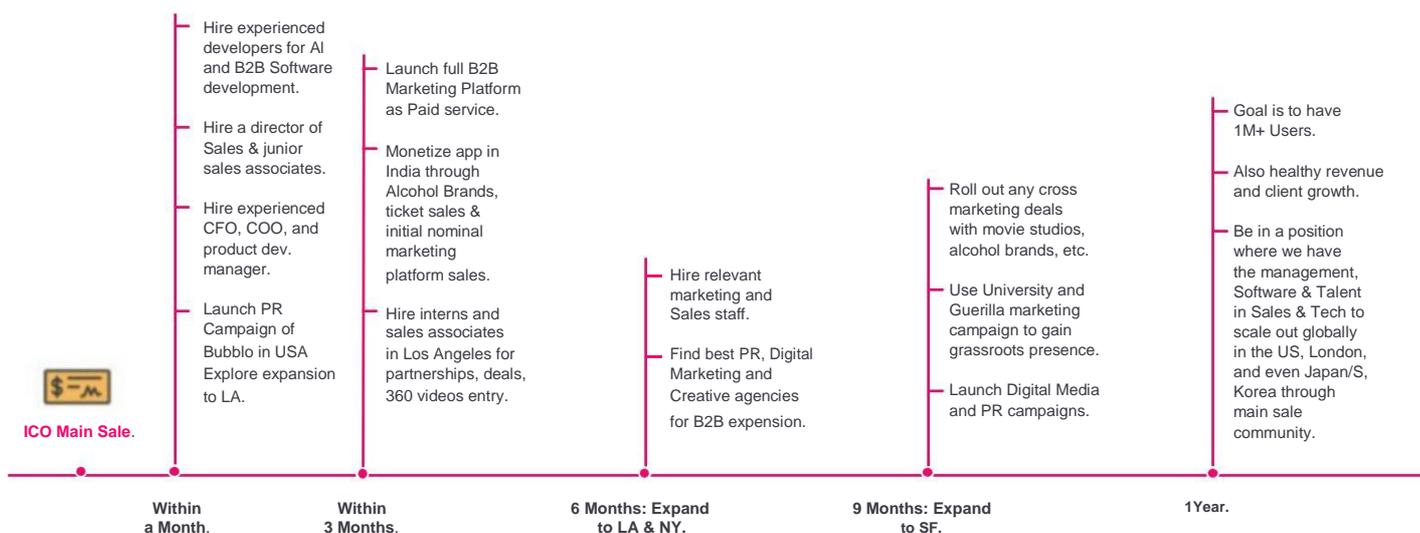
## 3.6 Bubblo Gives Businesses what they Need

Businesses in-turn can use the marketing platform to send deals, videos, and video deals directly to the users in their area, by searching for their services. They can then see how effective the ads are through automatic, anonymous, check-ins. Bubblo has huge B2B possibilities because it truly is the first marketing platform integrated with a discovery tool for users.

Venues can interact with potential patrons that are in the area looking for their specific services.

- 1. Sponsored Bubbles:** Venues will pay Bubblo to have sponsored Bubble ads on the home screen of Bubblo. These ads are independent of the “Top 5 Bubbles” algorithm but are instead based on the user’s preferences and location.
- 2. Marketing Platform:** Using a dynamic pricing model Bubblo’s marketing platform allows businesses to bid on sending deals, promotional and/or 360 videos.
- 3. Data Analytics:** Bubblo’s automatic anonymous check-ins are a source for immense data analytics that can be then sold back to an endless number of firms and institutions. Amongst other metrics, venues can pay for analytics on the demographics of their current customers, nearby potential patrons, nearby competitors, and the preferences of their current customers.
- 4. B2C Revenue:** Bubblo’s venue screen is an open platform to integrate with any B2C services such as table reservations, taxi bookings, food delivery, event tickets, payment services and other services which can integrate easily into our platform.
- 5. Bubblo Video Ads Platform:** Bubblo’s video platform shows vertical and 360 video ads and eventually could charge similar rates to Snapchat in the future. Benefiting additionally from the proliferation of vertical video ad content being created by Snapchat, WPP, and other advertising firms.

## Go-to-Market Timeline



## 4. BUBBLO'S TARGET MARKET

The first target users for Bubblo were tech-savvy smartphone users aged 18- 35 who use social networks to plan their daily activities. This target group was comprised of university students and tourists who would frequently visit bars, clubs, and restaurants in major urban centers to find the best places to go.

After successfully marketing the app in London, Bubblo moved to India and the Middle East where we have large partnerships, less competition, cheaper operating costs, and most importantly larger markets. The target segments in these regions are similar 18-35 year old's who quickly adopt new apps and enjoy socializing with one another in public places.

Additionally, tourists are also a major segment in these markets. To reach both these segments, we are using PR, Social Media, on-the-ground advertising, and our investment from the Times Group of India to give us traditional presence in newspapers, on radio, billboards, and TV advertising. We believe that combining these approaches will create a viral story and brand for Bubblo to rapidly reach large amounts of potential users.

### 4.1 Industry Landscape

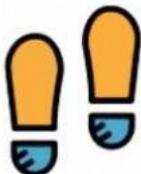
Consumers: The discovery app landscape is not reflective of a myriad of elements such as social media, the real- time deals and the actual environment of bars, clubs, and restaurants. Existing tools either provide very large lists or show dozens of pins on a map as possible options. These suggestions are not very helpful in narrowing down users' choices to help them decide.



Discovery tool market highly fragmented between numerous small players & few large players with poor interfaces that scare off users.



Large players have ignored the B2B component of real-time and location-based marketing.



Large players such as Yelp, Foursquare, Zomato & TripAdvisor offer no way for advertisers to track foot traffic generated from Ads.



Most smaller players focus on one social media platform or specific demographics which makes it hard to scale.



Google found in a recent study that Google search interest in "near me" has increased 34x since 2011

## 4.2 Differentiation



### Artificial Intelligence

An AI partnership with IBM's Watson Supercomputer provides a platform to innovate both the B2C & B2B components of the app.



### Multiple Monetization Paths

Bubblo's numerous revenue streams and ability to adapt to capture revenue from multiple industries, gives it the greatest chance to monetize successfully.



### Geographic Scalability

Bubblo is easily scalable globally as it can build its database of bars, clubs and restaurants from existing open-source APIs allowing it to expand to any new city in the world within a week. Bubblo's ability to integrate with local API partners in different geographies for reviews, taxi bookings and payment services can provide scalability and consistency to its content and services.



### 360 Video

First Discovery app offering ability for venues to promote themselves in VR.

App	Location	Reviews	Social	Check-in	Video	Real-time	offers	Marketing platform	AI Based Results
Bubblo	✓	✓	✓	✓	✓	✓	✓	✓	✓
Foursquare									
Swarm	✓	✓	✓						
Yelp									
Timeout		✓	✓						
Zomato									
Tastemade		✓				✓			

## 4.3 Competitive Advantages

### Scalable Cross-Industry Partnerships:

Bubblo's competitive advantage both in the app space as well as in the Token Sale market is the numerous Blue-Chip partnerships, investors, and clients it has secured. Partnerships and clients in tourism, banking/credit card, mobile phones/telecoms, taxi bookings, and food & beverage companies allows the Bubblo app to have a clear advantage in its content, pricing and flexibility between popular brands, for both the app and BUBL token.

By establishing the Bubblo brand, Bubblo will enable continuous customer acquisition to the app and the future token; accelerating the adoption and cultivation of both.



#### Tourism

- Bubblo easily discovers new cities.
- Airbnb cross-promotion.



#### Food & Beverage

- F&B Providers such as Diageo can have Bubblo Filters to promote bars, clubs, restaurant deals on app
- Delivery apps, table reservation apps, food payment apps all have a place to cross-promote and drive sales through Bubblo.



#### Banks/Credit Cards

- Providers can give Bubblo Filter to banks to help their credit card customers easily find the closest deals nearby.
- Banks give Bubblo access to deal database.



#### Mobile Phones

- LOI to pre-install app on 2m + phones with Samsung, Panasonic, Oppo, Micromax and others.
- Apps cannot be deleted.
- Cross-promote downloads with every new Reliance Jio Subscriber. (Target 50m+ users)



#### Taxi Bookings

- Uber and Careem can be booked through Bubblo.
- Points system partners.

## 5. PARTNERS / INVESTORS BRANDS

These partnerships are spread over a diverse range of industries such as the tourism sector, the banking sector, the mobile phones and telecoms sector, transportation services, the entertainment industry as well as the hospitality industry with a large variety of food and beverage vendors, clubs and bars.



Times Group (India) investment of \$500,000 as media capital in Bubblo allows scalability for physical marketing through discounted ads across TV, radio, billboards, magazines, and digital websites. By utilizing the Times Group relations with Uber and Airbnb, Bubblo can create serious value and monetization.



Cross-marketing partnerships with Fox Studios (LA) provides access to celebrity endorsements, cross-promotional content, exclusive promotion on sponsored bubbles, featured filters, 360 videos and red-carpet giveaways. This gives the Bubblo App ways to laterally and horizontally promote its features through movie campaigns.



Our London Based VC investor



Our advertising relationship with Eros International (Bollywood studio), scales monetized marketing which paves the way to expand to other geographical locations due to the popularity of Bollywood films across the globe.



Partnerships with Uber in London and India showcases Bubblo's ability to plug and play APIs in respective regions.



Careem's (Uber in Middle East) integration with Bubblo App makes it scalable in any region. Similar integrations and monetizing relations are in progress with food delivery, table booking, and ticket booking services across regions.



Bubblo is in cross-promotion talks with Airbnb to become a concierge of sorts for users. Airbnb hosts will be given featured filters in Bubblo to add favorite bars, clubs, restaurants, and local venues to Bubblo's database.



Panasonic



INTEX



Bubble has signed partnerships with Samsung, Panasonic, Oppo, Intex, Micromax and Carbon for pre-installing the app onto newly manufactured phones or alerting existing phone owners to download the app, increasing the user acquisition of Bubble. Pre-installed apps cannot be deleted, and owners would be sent alerts to open the app or claim exclusive deals.



Bubble's partnership with largest 4G network in India, Reliance Jio whereby sales representatives would drive downloads to customers coming into stores for new phones or repairs. Additionally, cross marketing across physical and digital media channels will take place.



IBM's Watson simplifies Bubble's Filters into a simple search (voice) to the user. The AI would scan user's Facebook, email, LinkedIn, and location information to recommend places. Its critical analytics is a huge technological leap for Bubble. The Partnership is highly scalable, as Watson is translated into many languages across regions such as Japan or China aiding the Bubble App userbase.



Bubble is currently working out the technical details of a partnership with ICICI, offering to text its customers to download Bubble for access to exclusive deals in retail venues and restaurants.



Bubble is negotiating exclusive deals from bars, clubs, and restaurants across regions in exchange for free trials on its marketing platform, ranging from high-end restaurants and clubs to low-end dive bars and street food establishments including drink distributors such as Diageo.



Bubble's Strategic Partnership with CASHAA is to utilize CAS in its App, making it easier for users to transact. CASHAA, is a gateway to consumer-centric digital financial products for adoption of Blockchain.



Partnered with AUXESISGROUP, which is one of the Top 100 Most Influential Blockchain Companies worldwide and a leading enterprise in blockchain development. Powering decentralized applications on a network tailored for needs of blockchain industry.

## 5.1 Smartphone Partnership Deep Dive

Bubblo has reached agreement with several smartphone OEM's to have the app come pre-installed on the phones. We feel this is a critical partnership opportunity that will significantly drive our user base. Below tables highlights the opportunity we expect to capture in the India and US markets:

Bubblo Smartphone Partnership - India Data

unit: millions	2017 units shipped	2017 India Marketshare	2018 Estimate	2019 Estimate
Samsung	30.63	25%	31.98	33.38
Oppo	9.30	8%	9.71	10.14
Micromax	6.70	5%	6.99	7.30
Panasonic	2.00	2%	2.09	2.18
<b>Total</b>	<b>46.62</b>	<b>39%</b>	<b>48.68</b>	<b>50.82</b>

Annual growth estimated at 4.4%

Date sources: IDC, India Times

Bubblo's agreed upon strategic partnerships in India should generate ~50 million pre-installed units in 2017, or a 39% of the entire Indian smartphone market. Projecting a very modest 0.1% usage rate of the app moving forward will mean ~0.5 million users for us in the Indian market.

While our partnerships are currently only for the Indian market, we are working hard to negotiate the same deal in the US with Samsung.

Bubblo Smartphone Partnership - US Data

unit: millions	2017 units shipped	2017 US Marketshare	2018 Estimate	2019 Estimate
Samsung	54.13	29%	55.86	57.65
<b>Total</b>	<b>54.13</b>	<b>29%</b>	<b>55.86</b>	<b>57.65</b>

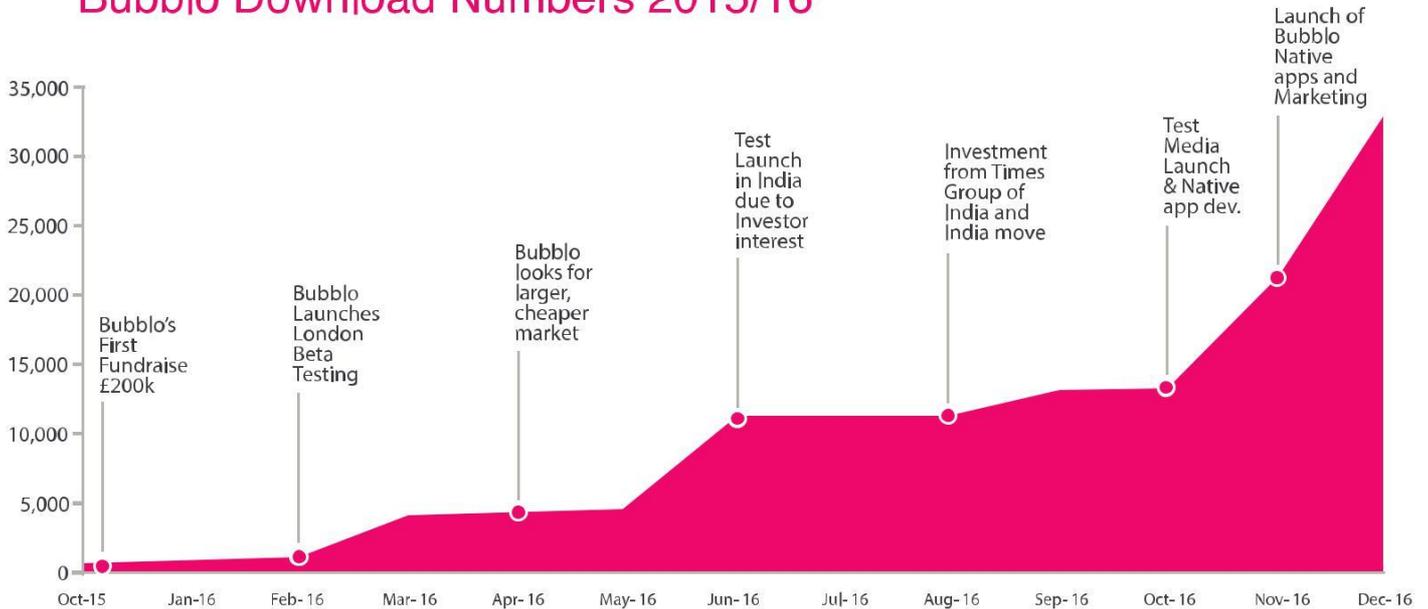
Annual growth estimated at 4.4%

Date sources: comScore

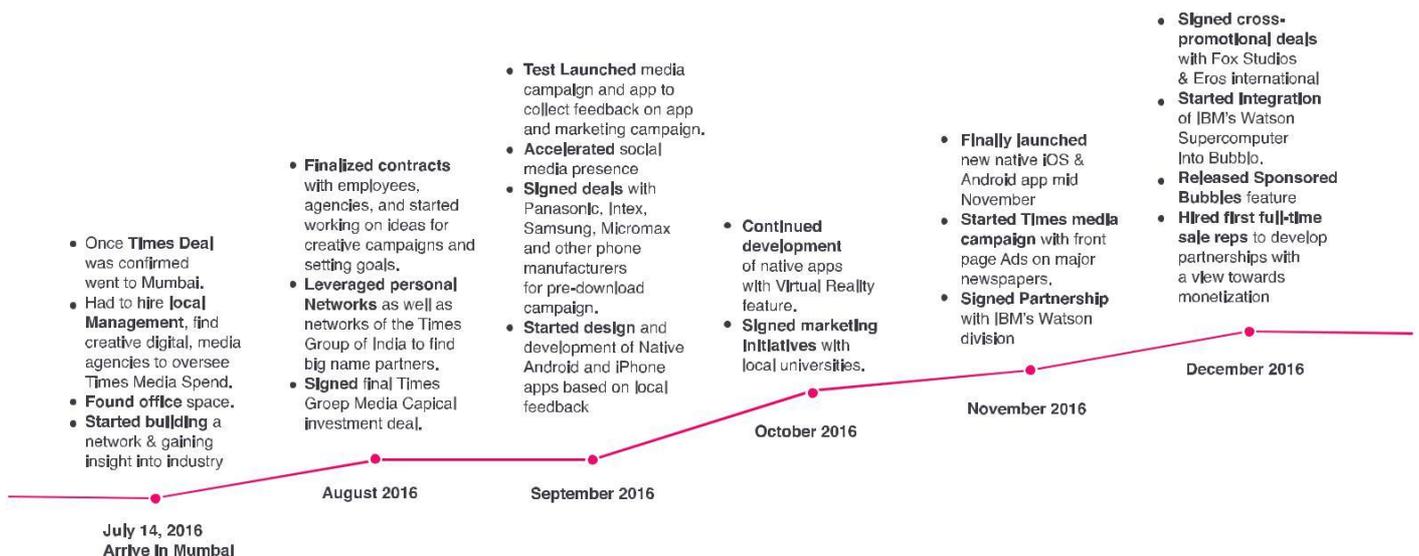
With Samsung's strong 29% marketshare in the US, we would come pre-installed on ~55 million units if the deal went through. Again, even with a conservative estimate of 0.1% usage rate, this strong partnership would yield us ~0.5 million users in the US market.

## 6. TRACTION TIMELINE

### Bubblo Download Numbers 2015/16



### 6.1 Mumbai Case Study



## 7. SWOT ANALYSIS

### Strengths:

- Strong management team with professional PR, Media, Digital Agencies to help the market growth.
- KPMG Accountants, Morgan Lewis Law, Latham Watkins ICO Legal
- Revenue ready strategy will help financing of expansion.
- Easy to understand designs make for an attractive app.
- Comprehensive marketing plan keeps App relevant and viral.
- Depth of Blue Chip partners and clients across diverse range of industries ensures that Bubblo has presence across various spaces and patrons.

### Weaknesses:

- Simultaneous B2C and B2B marketing and sales is difficult and expensive however, true value creation is derived from having direct relationship with users and clients.
- Large team across geographies requires special attention, however managerial hierarchies being put into place should ensure efficient organization.
- Initially high dependence on 3rd party data, however there is no way to identify which of these data relationships will end or change in the short-term and in the long-term there are numerous options to build Bubblo's own proprietary data.

### Opportunities:

- Discovery and Location-based advertising. The discovery space is set to grow at an exponential rate and location-based advertising is projected to become the next frontier in media and influence on consumer behavior.
- The competition has yet to focus on providing a true marketing platform to bars, clubs, restaurants and other venues looking to advertise directly to potential patrons.

Bubblo would have a first mover advantage in this space and could establish entry barriers on competition by signing up a large base of clients, especially in a 360-video space.

### Threats:

- Other bigger competitors could move into the space that Bubblo is trying to create via new features or designs. However, this is highly unlikely as these brands have already been established.  
and it would require a major design and branding overhaul to achieve a similar level to Bubblo. There is a greater possibility of a large competitor attempting to acquire Bubblo.
- Platform's reliance on multiple social media and review data sources may be compromised by change in policy at one or more of its sources, however in the long- term Bubblo seeks to build its own data to manage the risk.

## 8. BUBBLO TOKEN LAUNCH

Crypto markets are growing at a rapid pace, with increasing participation in token generation events from blockchain innovators, forward-thinking entrepreneurs, businesses and crypto-finance specialists who support blockchain initiatives. Due to their strong belief in the technology these are the people who want to be a part of the future blockchain and cryptocurrency- powered economy. Participants can contribute via their view on future growth potential of the product or idea. An early example of such success was Ethereum, which raised \$18 Million in 2014, reaching a \$1 Billion market capitalization in 2016 and then \$20+ Billion earlier this year.

To achieve future targets, Bubblo's token generation event i.e. the proceeds of which are required to build the products and services detailed in this paper. This is backed by a unique, proven and blue-chip company validated platform. Unlike others based only on an idea, Bubblo's model has been established via a soft-launched mobile app. The company has major VC investors and partners including the largest media conglomerate in India (The Times Group of India), Foresight Partners, Fox Studios, IBM, Uber, Airbnb, Panasonic, Eros International and Careem, among other blue-chip companies.

Aside from existing achievements which is a strong indicator of the future roadmap for innovative products and services, the main benefits of contributing to our project are ways in which BUBL will be used for transacting across multiple services in the app as well as multiple geographies. Increase in user acquisition, data access from both users and businesses, and marketing transactions on the app with venue partners and media companies enabled by the platform will result in appreciation of BUBL value.

### 8.1 Token Functionality

#### User/Patron Ecosystem

One of the main problem points on other review sites is the low engagement from a broad section of the population with regards to reviews and content uploads. Bubblo solves this problem by gamifying the review experience and incentivizing users to contribute their opinions, pictures, and content in exchange for BUBL tokens. The review system will take the form of a reddit style community where reviewers are upvoted or downvoted based on the quality of their reviews and their expertise on a particular type of venue.

Users will get rewarded tokens for every review, comment, or up/down vote they leave to incentivize maximum community participation rather than only a small subset of reviewers with an affinity towards reviewing. Instead of only a text-based review system, users will also be able to upload video-based reviews to make the experience more personalized and interactive. Therefore, making this style of interaction between users unique.

## Example A: Features that will be familiar to users from other centralized review services

MY SUBREDDITS FRONT - ALL - RANDOM | ASKREDDIT - VIDEOS - ADVICEANIMALS

Reddit ALL hot new rising controversial top

261 upvoted Reddit's Upvoted Weekly newsletter of 32 percent, and CTR of 35 percent promoted by ckk524 169 comments share save hide report

1 5252 Seems suspicious (imgur.com) submitted 7 hours ago by spazticmethod to /r/funny 496 comments share save hide report

Rankings based on upvotes

2 5114 A girl who lost arm to cancer received... submitted 7 hours ago by NanMoss to /r/pics 549 comments share save hide report

Community based review validation Ability to comment on other review

3 4218 TIL despite being a millionaire, Si... daughter, Lisa. A girl he named a... (en.wikipedia.org) submitted 7 hours ago by Veritech-1 to /r/todayilear 1415 comments share save hide report

The screenshot shows the Reddit interface with several annotations. A pink box highlights the '169 comments' link in the first post. A red circle highlights the number '1' next to the second post. A red circle highlights the number '5114' next to the second post. A red circle highlights the number '549 comments' next to the second post. A red circle highlights the number '3' next to the third post. A red circle highlights the number '4218' next to the third post. A red circle highlights the number '1415 comments' next to the third post. A red circle highlights the text 'Ability to comment on other review' next to the third post.

## Example B: Example of a review with points, comments, and community interaction

↑ [-] **hazmatt47** 4688 points 1 month ago  
↓ Casa Bonita will always hold a special place in my heart. I go there every year. Although, I miss the guy dressed in a gorilla suit who would run around and screw with people.  
permalink embed save report reply

↑ [-] **carolineo** 1770 points 1 month ago  
↓ I took some visiting friends there just last weekend and gorilla guy was there! Well, a gorilla guy, if not THE gorilla guy...  
permalink embed save parent report reply

↑ [-] **hazmatt47** 610 points 1 month ago  
↓ His legacy lives on.  
permalink embed save parent report reply

load more comments (11 replies)

load more comments (13 replies)

Additionally, rather than just upvotes, the tokenized system will automatically reward “BUBL” tokens from the system for every form of participation. Other users can reward users with not only upvotes but actual tokens for excellent real-time insight into a venue.

- ▶ The ecosystem is formed to maximize participation of quality reviewers while ensuring accountability to outliers and trolls. It will also be very difficult to “game” the system because only users who have been to a venue and have recently “checked-in” or exchanged tokens with a location will be able to leave a review.

reviews, a user can start off the conversation by either checking in or uploading some form of media such as a picture or video to the venue page to earn bonus tokens and also get the venue earning tokens, giving discounts, and participating in the Bubblo token ecosystem.

- ▶ A user’s profile of places they have checked into or exchanged tokens with, will also reward users with bonus tokens. Users can become experts on a specific style of venue, cuisine, or experience to earn these bonus tokens on top of the usual reward.

Reviews on venues is subjective, and current review sites make it impossible to understand the people that are reviewing a venue. This system not only makes it simple and secure due to its decentralized nature, but it encourages users to visit and record as many places as possible. No data will ever be held with Bubblo and only anonymous numerical data points are handed out to third parties such as businesses and marketers, never matching to a name or person.

- ▶ In addition to earning tokens through reviewing, Bubblo will also create and expand the review community by rewarding users with tokens for finding errors in information on venues such as bars, clubs, and restaurants. If any info such as phone numbers, menus, twitter feeds, or pictures/videos are missing, have changed or are wrong, users can

send an edit request and if the change is approved they will get rewarded. This Wikipedia style crowdsourcing will help push the expansion of our community to other cities as users who help crowdsource all the venues to a new city, will be rewarded for their efforts with deals at venues and cities accordingly.

## Business Ecosystem

Beyond the rewarding of tokens in the user ecosystem, the highlight of Bubblo's blockchain vertical is the data that the tokens represent and give various parties access to. The BUBL token is not a token that has value unto itself alone. Instead, the value of the Bubblo token is derived from the access to user and business data the tokens grant an owner. Data is Bubblo's reserve asset of the BUBL token. Users and businesses have traditionally given away their private data for little to no monetary reward, however this will end as the Bubblo Token ecosystem allows users and businesses alike to recapture ownership over their data and bargain that data with other parties in exchange for monetary rewards as well as discounts, advertising, and more benefits.

Bubblo's token ecosystem is designed to increase the reliability and usefulness of reviews by building a decentralized community of users that are motivated to actively participate. Businesses will be incentivized to participate in this token ecosystem as it will bring customers, reviews, data, and the ability to market their venues in a way that they have never been able to do before. Thus Bubblo advertising platform has transformed into the world's first decentralized marketing ecosystem by automatically bringing in customers while using information to hyper-locally target potential customers with advertisements.

The demand for Bubblo tokens will depend on the discounts and rewards that can be obtained from venues. Businesses will certainly want to offer these exclusive deals in exchange for user's tokens because of the following three main benefits:

- 1 Accepting tokens will bring in thousands of Bubblo users who are actively involved and review a venues quality, through written and video uploads.
- 2 The exchange of tokens with users for deals will result in an exchange of digital signatures with patrons which will lead to an immediate acquisition of anonymous data on those individuals. Acquiring tokens from users will transfer their profile with basic information such as their age and gender as well as what kind of other venues they visit (including their geographic footprint). This provides businesses instant access to data that allows them to truly know what kind of patrons are visiting them, so that they can better understand and correctly plan future marketing efforts.
- 3 Bubblo tokens accepted by businesses will go above and beyond merely bringing in customers and data on those customers. They can be used by businesses to automatically market their venue to similar patrons as well as bring back repeat customers. Bubblo's existing marketing platform can be utilized by businesses who accept tokens to market via sponsored bubbles, hyper-locally targeted real-time video ads, and even anonymously reward users for positive reviews of their venue.

Bubblo's token and marketing platform may experience a small learning curve initially for businesses so just as Google

Adwords or Facebook Ads, it will automatically allocate your spend budget towards user targeted advertising by applying a mix of tools. Targeting will be highly accurate and highly interactive compared to any other review site because of the data that will be held on the tokens. As a matter of fact, a summarized macro picture of a venue and all the patrons that have visited before, along with data on the reviews about the venue can be added to the marketing platform upon allocating a spend budget to aid in targeting specific clientele.



If the business chooses, they can manually allocate advertising spend between sponsored bubbles, hyper local advertising, 360- degree video ads on their own page, furthermore customize their own pages.

Finally, if the business chooses to not partake in any advertising, they can always sell the tokens with the aggregated macro data chain snapshots of every consumer to ever visit them to 3rd party affiliate marketing and digital marketing agencies looking for that data, or just sell it on the exchanges where the data will be wiped.

### 3rd Party Marketing Ecosystem:

Beyond the community created by both users and businesses actively involved in a decentralized review token experience, Bubblo is focused on ensuring the value of the token central to the community to maintain and grow its value to the benefit of everyone including external parties.

By delivering high value geo-tagged consumer and business insight data and creating hyper-loval advertising opportunities in the Bubblo Ad platform using those insights, Bubblo achieves value creation for 3 parties. Thus, Affiliate marketing agencies, digital marketing agencies, consumer behavior data trackers, and even financial institutions such as hedge funds, will all be incentivized to purchase tokens. The following are the potential benefits to purchase BUBL tokens:

**1. Affiliate Marketing Agencies** have been an invaluable resource to many brands to get consumers to hear about a product from people they know and trust. These agencies could do the same on Bubblo's marketing platform. By buying BUBL tokens in bulk or gaining a contract directly from businesses, they will be able to reach out to and target different types of customers most likely to bring in good reviews and businesses to their marketing customers.

- a. These affiliate marketers can pay tokens to potential reviewers to go to a restaurant and then afterwards leave a quality review of a place, at the risk of positive or negative votes from the community to maintain integrity.
- b. They can also pay to utilize Bubblo's advertising platform to target users they believe are likely to be potential customers of a specific product.
- c. Buying tokens in bulk from various businesses or from Bubblo itself will allow these agencies to draw informative data that they can analyze for better insights, and thus better targeted advertising both on and off the Bubblo marketing platform.

**2. Digital Marketing Agencies** can also accept tokens directly from businesses or buy in bulk to advertise directly on Bubblo's marketing platform and use the data gained to better form their overall digital advertising strategies. Either way they will have tokens that they can automatically spend towards advertising on the Bubblo platform or sell on the open market.

**3. Consumer Business Data Trackers:** There are many agencies ranging from government to business insights and consulting services that are hungry for consumer data from businesses. Though the data they will receive will be macro in nature and can be obtained by either paying businesses directly or buying tokens on exchanges, it will help draw insights to fit their broader research and consulting strategies.

**4. Financial Institutions:** Investment Banks, Hedge Funds, and any other financial trader that desires consumer insight data will also be interested in buying Bubblo tokens for their macro consumer insights.

In short, Bubblo is going to be a step towards a future that will eventually see the end of centralized and slow-moving competitors who are **"Web 2.0 companies"**.

## 8.2 Token Distribution

### Phase 1 – Community Building with 24 million tokens (3%)

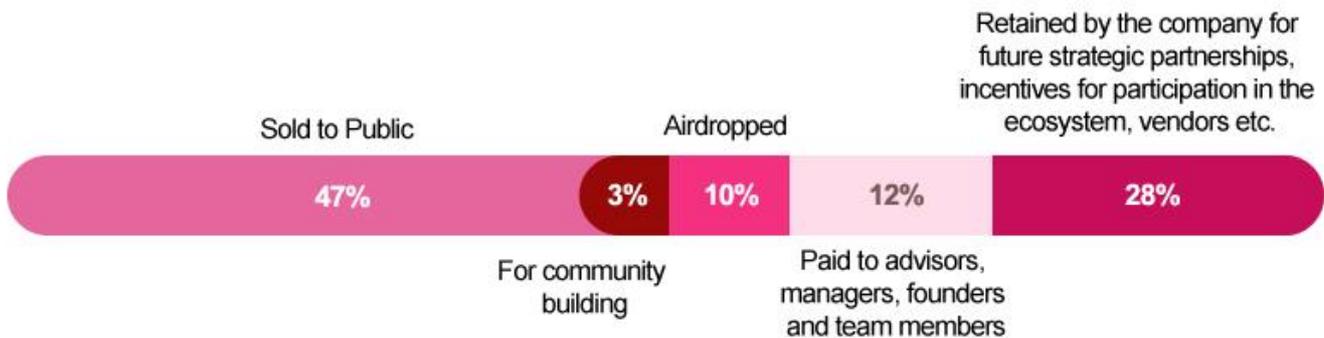
Business Flow	Token Distribution Mechanism	No. of tokens to be rewarded
User Download Bubblo		2
User adds a new place (café, bar, restaurant, club, hotel)	Each addition, user earns 1 token	3
User add phone numbers/menus/pictures	For each entry user will earn 1 token / if all three added by a user he/she will earn 6 tokens	1
User add videos / 360 videos		2
User reviews/add a comment		1
User correct info on existing data base	For each correction user will receives 2 tokens	2
User votes against gender ratio		1
User receives loyalty tokens for repeated/active usage	Fortnightly rewarded by 1 token for repeated usage by a user	1
User shares referral link or posts on social media to increase community members	Both referral and user will receive 2 tokens each	2
User refers venues (cafe, bar, restaurant, club, hotel)		3
Users who watches video adverts		2

\* Community building phase is allotted 24 million tokens and would continue till tokens are exhausted in this slab, this would include bounty programs/campaigns as well.

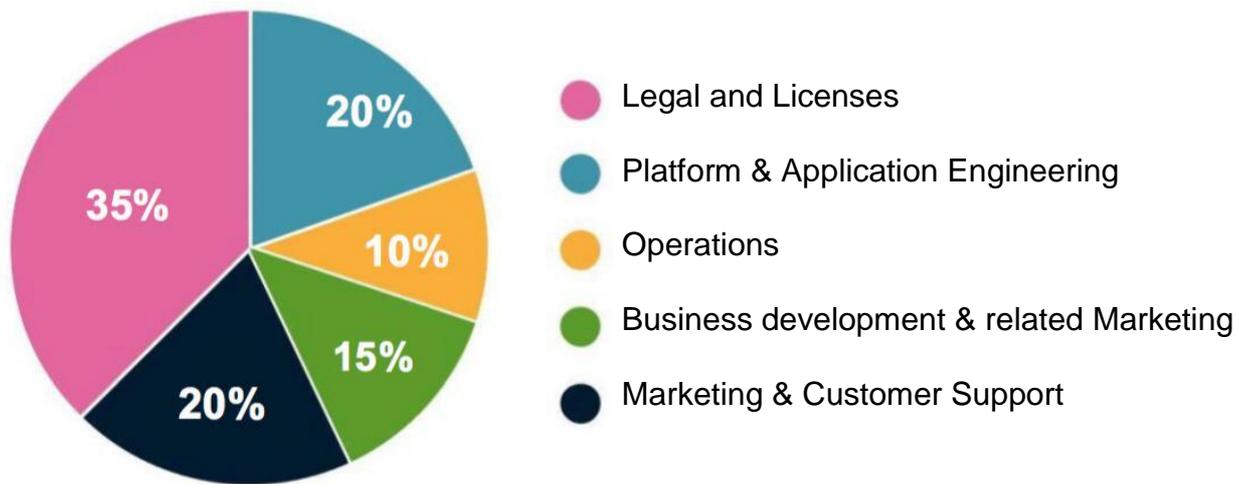
## Phase 2 – Token Sale of 376 Million (47%)

Retained	40%
Airdrop	10%
Sold in Presale and main sale	47%
for community building	3%
# of tokens sold in presale and Main sale	400,000,000
Total # tokens	800,000,000
USD Soft Cap	8,000,000
USD Hard Cap	20,000,000
Pre-Sale Bonus	40%
Main Sale Bonus	20%

### 320 Million tokens (40%) allocated to Company, Team & Advisors



## 8.3 Use of Token Sale Proceeds



## 8.4 BUBL Benefits Explained

BUBL will be an innovative instrument to incentivize the major parties involved in the Food and Beverage industry (customers, businesses, and marketers) to stay engaged in conversation with one another and have access to information on each other in a safe, secure, and real-time manner. Customers for their part will get rewarded for reviewing and visiting venues and for sharing their basic information with the venues upon receiving exclusive deals and benefits. Businesses in return will immediately have a means of reaching similar users by being able to use the tokens they receive for marketing. 3rd party marketers and researchers will have an opportunity to a huge amount of data to target and draw conclusions on consumer behavior from.

## 8.5 BUBL Token Summary

<b>Project description</b>	The first decentralized review platform for bars, clubs, restaurants, and retail establishments
<b>Ticker symbol</b>	BUBL
<b>Token background</b>	BUBL is built as an ERC20 token on the Ethereum blockchain
<b>Pre Sale Date</b>	25th July, 2018 9AM New York
<b>BUBL token price</b>	\$ 0.05
<b>Accepted payment methods</b>	BTC, ETH, CAS and FIAT (usd, gbp, euro etc)
<b>Percentage of BUBL token for sale</b>	47%
<b>Target amount to be raised</b>	\$20,000,000
<b>Project Status</b>	Live product

## 8.6 Token Support

The Bubblo team is dedicated to support our token sale participants during the token sale process. Typically, funds will be deposited with an escrow until the user releases the funds to the receiver. For every offer made, a smart contract is automatically created. Both users deposit tokens to the escrow as a guarantee for a successful transaction. If there is a dispute in the transaction, the user will not release the funds, and can start the process of resolving the dispute. One of the ways to resolve such disputes will be to contact the Bubblo Support Team at **support@bubbloapp.com** and **info@bubbloapp.com**.

## 8.7 Assurance

Blockchain technology enables a secure, smart-contract based escrow for all transactions, along with ensuring that no exploits exist within the code. The smart contract's code will also be reviewed with Bubblo's technical team to ensure best security for our token sale participants.

## 9. TECHNICAL ANALYSIS OF BUBL TOKEN

Bubble will launch its token on the Ethereum platform, a decentralized platform for the deployment of smart contracts with intelligence beyond the basic scripting afforded with earlier cryptocurrencies. The token will adhere to the ERC-20 specification, the de facto standard token specification, allowing it to be immediately traded on any exchange supporting Ethereum-based assets. It will further include community voting privileges, a protocol upgrade mechanism, and safeguards related to U.S. securities laws, the details of which are forthcoming.

While the Bubble token will initially launch on Ethereum, the objective is to achieve easy portability to the best technology as it becomes available. We will be constantly evaluating alternatives over time, but for the foreseeable future, believe Ethereum has a market dominance that offers too great a network effect to forego.

### BUBBLE COIN: TECHNICAL OVERVIEW

**Abstract.** We present Bubble Coin, a multi-purpose cryptographic token that is awarded to users for contributing high-quality data to the Bubble social network, a concept we call proof-of-human intelligence (POHI). The key question of the “value” of an individual user contribution is determined by AI technology hosted Bubble-side, making the “BUBL” the first blockchain where designated AI technology is a central mediator in a proof scheme. The BUBL is the vehicle that drives Bubble-based rewards at venues, but far more importantly, coins encode the “data rights” for re-targeting or collecting summary statistics on the users that have (in a sense to be made explicit) “interacted with” that coin over the past  $kt$  transactions, a deterministic process of network size. Thus, the coin allows users to either proactively decide to sell on the rights to their data contributions – and be compensated for them – or to maintain total privacy – a completely unique value proposition unlike any other platform.

## 1. Overview

The Bubble Coin (hereafter “BUBL”) is the native token of the Bubble platform, a social discovery tool that helps users figure out the answer to the obvious question: “what’s up tonight?” This might be better phrased “what’s up now,” as the most unique part of the Bubble platform is the emphasis on real-time information gathering – helping to build a real-time heat map of social behavior.

## 1.1. Economic incentives.

But in order to build the map, users have to provide real-time and frequent check-ins, posts, and reviews – a non-starter even at the scale of Yelp. Initial informal studies have shown users are over 25x more likely to post a real-time photo if they are awarded with tangible value (tokens), and over 100x more likely if they are rewarded with tokens that can be immediately redeemed at the venue for special treatment or a cash discount.

The BUBL provides the mechanism by which these users are incentivized to generate high-quality real-time data for the platform. On the merchant or venue side, the BUBL provides a means through which to offer a joint loyalty program with every other merchant or venue on the Bubblo platform. We expect merchants and venues to be enthusiastic about joining the platform, as we plan to offer a (justified by our business model) liquidity program for merchants and venues.

## 1.2. Byzantine faults.

Byzantine faults are a natural problem in the world of BUBL, where there is an ongoing process of “issuing and burning” tokens, but with an unusual attack profile.

Imagine we issued tokens at a fixed rate – say one per post, review, or photo. A bad actor could simply upload large amounts of garbage data, earning himself one token per item. Done ad infinitum, the bad actor could even exhaust the fixed supply of Bubblo coins being held. (Safeguards related to supply are in place at the software level; the question is of primarily theoretical interest.) But furthermore, this could incentivize users to contribute poor-quality data – which is certainly not the behavior we are looking to incentivize. Thus, to avoid Byzantine faults (cheating), we cannot simply issue a fixed number of tokens for any data contributed by the user – we need to validate the quality of data and issue the proper number of tokens accordingly.

## 2. Proof of intelligence

In the same way that Bitcoin can be viewed as “backed” by the compute power required to mine one, the BUBL is backed by a contribution of data requiring human intelligence. The determination of what is intelligent, in addition to the assessment of value, is entirely the domain of artificial intelligence (AI) technology maintained by Bubblo. When a user uploads data to the app, this AI determines the number of BUBL that will be transferred to their account.

While this poses constraints on the AI – for example, a model should be highly immune to adversarial perturbations, even at the cost of accuracy – it presents a unique new solution to the unique notion of Byzantine faults in BUBL.

### 2.1. Artificial intelligence technology.

The Bubblo AI technology is proprietary, and was primarily developed to handle adversarial perturbations and identify genuine material. While we intentionally keep the details of the AI technology confidential – contrary to popular opinion, there is some added security in obscurity – we will discuss some problems we’ve addressed.

In the space of image recognition, neural networks have provided entirely new levels of accuracy. While such achievements as GANs (Goodfellow et al.) have even allowed neural networks to create images that look reasonable to a human, they don't yet function at the scale that would be required to generate the kind of images Bubblo would be receiving. That said, adversarial perturbations are a real and immediate problem in the space of neural nets. (? et al.) showed a number of alarming cases in which human-imperceptible changes to an input image can change a correct classification into an incorrect one – with 99% certainty attached to it, no less. This weakness presents a huge risk that Bubblo's AI stack needs to handle.

In the space of social network analysis, we are applying cutting-edge techniques related to learning structures – technology commonly used in the fields of molecular biology and chemistry suddenly becomes useful in helping Bubblo understand the meaning of the substructures in its network. This work relies heavily on the work of Kondor et al. in the space of structure learning.

## 2.2. Safeguards.

Any AI-based system should have built-in safeguards, but especially so in this case. With a fixed total supply of tokens, a clever adversary could find an adversarial perturbation of some piece of data and use it to exhaust the full supply of tokens. For this reason, “kill switch” safeguards exist at the software level to automatically shut down in the event of unusual coin allocation activity. This provides time for a human to look at the problem and determine whether any imminent security risk exists, and, if so, what to do about it.

Furthermore, Bubblo uses proprietary technology that analyzes newly submitted content in light of past content. When a similar piece of data is repeatedly observed, the kill switch engages, as this is precisely the attack profile of someone looking to exploit the adversarial perturbations problem.

## 2.3. A note on consensus.

Keep in mind, the proof scheme – much like in Bitcoin, Ethereum, etc. – is linked to the allocation of tokens, it is not the basis of the consensus mechanism. In a more global sense, the consensus mechanism is simply that of the host chain – currently, in our case, Ethereum.

## 3. Mediation of data rights

The Bubblo Market Data product is based on the notion of “data rights” – that is, you cannot retarget customers or purchase data unless you have the data rights. Said rights are, in a very loose sense, “encoded” in token balances. Because a token is a theoretical construct – a balance in a ledger – we must find a technique to equitably distribute data rights among coinholders in such a manner as to achieve the following goals:

- (1) The amount of data rights should increase with the balance of coins transacted in the network (to encourage liquidity providers).
- (2) The data rights value of coins should increase with the total value of the data in the network.
- (3) The data rights received by accepting BUBL from a user should provide data rights to that

specific user and other users that are, in a sense to be made precise, “similar.”

(4) As a corollary to the previous point, the data rights encoded in a transfer used to redeem some value with a vendor should provide that vendor with information useful for retargeting efforts.

(5) Over time, there should be no saturation effect – that is, all balances should not inherit data rights to all other balances, regardless of the size of network growth.

(6) A user that hoards their awarded tokens should have data rights inaccessible to all (other) addresses.

(7) On a long enough time horizon, a user that never spends tokens awarded to them should be inaccessible to all other users in a data rights sense.

### 3.1. The true relationship graph.

We presume that over  $N$  addresses there is a “true” relationship graph, where a “relationship” means the two parties transact at some point in time. The true graph,  $GT = (VT, ET)$ , is only realized at some theoretical time point

$T = \infty$ , so for  $t < T$  we need a model for network evolution over time, as well as results about the true resulting network  $GT$  at some fixed size  $N$ .

### 3.2. Trivial solutions.

Trivially, we satisfy many of the above requirements by simply encoding data rights as those accounts in  $GT$  reachable within some distance from the base account. However, the growth of the network would quickly create an undesirable saturation effect, as more and more nodes become interconnected. In order to build a more robust solution, we need to adopt a model for the growth of the social network over time.

### 3.3. The Barabasi-Albert model.

The Barabasi-Albert model defines a random process generating scale-free networks that exhibit preferential attachment. By virtue of being scale-free, the resulting graph  $GT$  has the property that a node’s degree follows a distribution proportional to  $1/k^3$ , that is:

$$P(k) \propto k^{-3}$$

The model was constructed in order to correct previous attempts at building stochastic representations of social network evolution that failed to reproduce the observed phenomenon of “hub” creation. In the context of Bubblo, hubs play an especially important role, as they represent both big balance holders and the venues that accept Bubblo coins. The BA model, a so-called “small-world” model, is especially critical to this analysis because it highlights precisely those topological features of real-life observed social networks that interest us – for example, the average distance between two nodes equation (2) is substantially less than in most types of random graphs. This “small-world” effect is precisely the concern when using path length to mediate data rights – so the BA model gives us a way to rigorously study the path length decision

problem and determine how to define  $k_t$  in order to achieve the properties listed above.

### 3.4. The $k_t$ process.

We will define a value  $k_t$ , a function of the network size  $N_t$ , and give data rights to an address  $i$  at time  $t$  for all addresses  $j$  reachable in up to  $k_t$  steps in the transaction graph  $G_t$ . Let  $N = |G_t|$ . We know from BA that the average path length between two nodes will be:

$$E[l_{i,j}] = \frac{\ln N}{\ln \ln N}$$

for two addresses  $i$  and  $j$ . So in order to prevent saturation, we require that  $k_t$  stay reasonably far below this expectation. In order to do that, we choose a parameter  $\alpha \in \mathbb{R}$  and set

$$k_t = \alpha \frac{\ln N_t}{\ln \ln N_t}$$

### 3.5. Big balances and venues.

The properties relevant to venues follow immediately from the definitions, since a venue will always be a neighbor of its customers. Furthermore, venues will naturally become hubs in the network, giving their balances many of the same properties as those of large liquidity providers. In order to demonstrate that our model will meet the above properties as it relates to liquidity providers, we begin with the definition that a valuable liquidity provider will have transacted with a multitude of parties. By the power-law distribution in equation (1), each party provides an equal expected degree, and, by association, possible data rights. The BA model leads to an explicit form for degree growth over time:

$$\frac{\partial d_i}{\partial t} = m d_i P_j d_j$$

In other words, large-degree nodes tend to attract attention in the BA model (preferential attachment) and a large balance holder has a greater chance of being sufficiently close in the transaction graph to such a hub, and to the large amount of data rights that come with it. This creates the “rich get richer” phenomenon known in scale-free networks and observed in economic reality.

In the case of liquidity providers and marketers – who aren’t well described by the nodes introduced in the BA model – the most important shift is the change from  $k_t = 2$  to  $k_t = 3$ , when these hubs become useful to them. For the first 500,000 or so users in the network,  $k_t < 3$  and the effect of the hubs isn’t particularly important to someone seeking data rights. However, as the network matures, these hubs become of paramount importance, since they provide the pathway to a large proportion of the network’s data rights, and by equation (1), we know they are rare. Thus, one would have to transact with a large number of parties in order to have a reasonable probability of become connected (in the sense of  $E_t$ ).

### 3.6. Drop-off.

The last requirement in our list can only be met by having a drop-off period for transaction data. Thus, we build the transaction graph  $G_t$  only using transactions from the past 350,400 blocks maximum, or approximately two months, assuming an average block time of 15 seconds.

### 3.7. Discussion.

TODO: explain how this system meets the above criteria.

## 4. Simulations

Much of the discussion so far has been about a theoretical framework within which to reason about the evolution of the Bubblo network, and its results were used to motivate a way to define  $G_t$  and to set  $k_t$ . But, analytical approaches will not suffice to demonstrate that our set of rules create the desired results in the context of a growing Barabasi-Albert network. In order to do that, we'll need to perform simulations. Having set the parameter  $\alpha = 0.6$ , our main questions are:

- (1) As the network grows, is there an undesirable saturation effect?
- (2) Do nodes of high degree have more data rights?
- (3) Does the average proportion of accounts accessible within  $k_t$  change with the size of the network? Put otherwise, does the number of accounts accessible grow with the size of the network?

In order to study this, we performed 100 simulations across a range of network sizes. While our analysis is informal, it is both informative and promising.

Regarding nodes of high degree, like venues and liquidity providers, Figure 1 demonstrates that, indeed, more data rights would stem from higher degree under this system. Thus, liquidity providers are appropriately incentivized to transact with as many parties as possible. Interestingly, it is plain to see that the proportion is linearly bounded by below – a useful guarantee for a BUBL token holder.

Figure 2 is a scatter plot of rights proportions across different network sizes, so each vertical set of points represents a sample (of increasing size)

Figure 1. Data rights ratio as a function of node degree

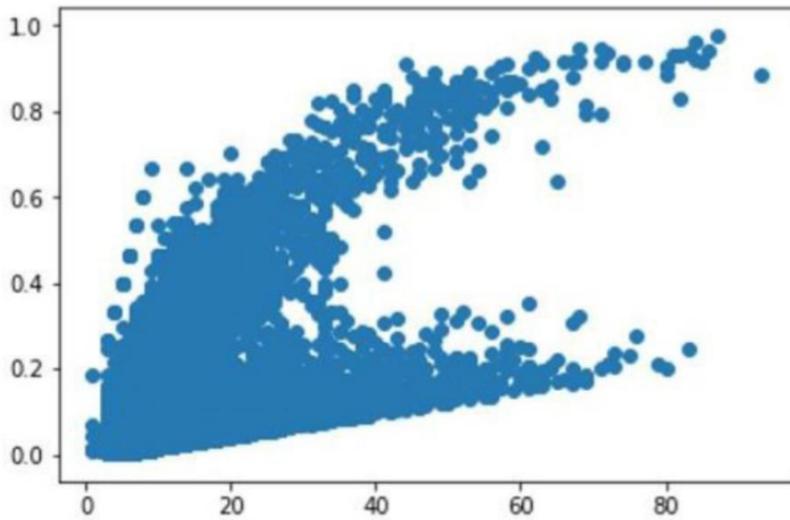
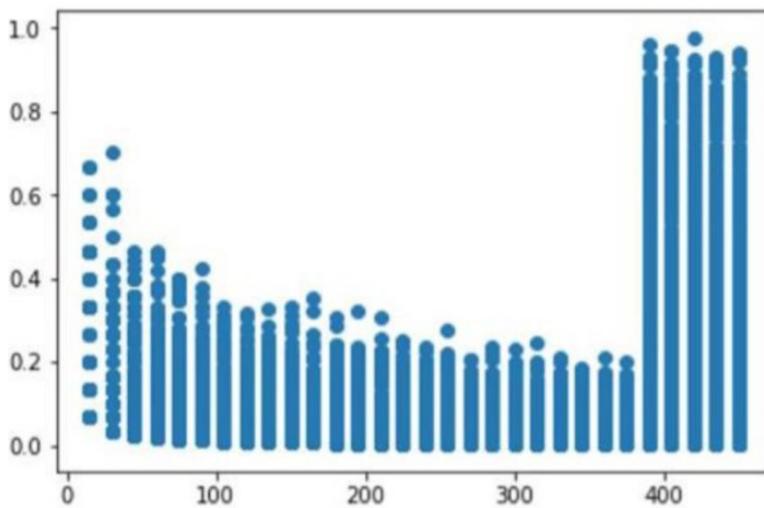


Figure 2. Data rights ratio as a function of network size

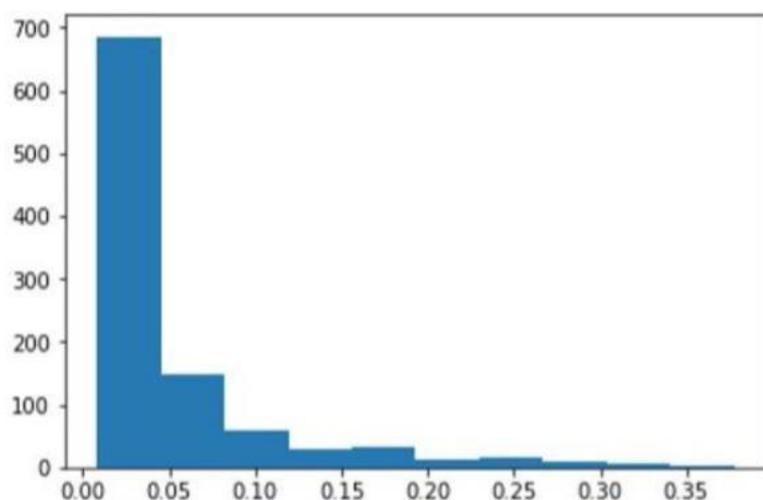


is a clear change. This cliff is due to our choice of  $\alpha$  – this is the point at which the maximum allowable steps  $kt$  goes from 1 to 2.

But the graphic becomes difficult to analyze visually – there are too many points to look at. So, we compared the data rights proportion histogram in small network sizes versus large network sizes. The larger network size is of specific interest, as this represents the simulations after the cliff we observed in Figure 2.

We can see quite plainly that the histograms maintain their exponential distribution-like property, although we note that there is a greater range of outcomes with the larger size. It's tempting to explain this by network size, but in point of fact, it has more to do with the shift in  $kt$ . Based on the definition,  $kt$  will never be greater than 4 (the value of  $kt$  if all the people in the world are users). With each change in  $kt$ , the distribution becomes a bit more “generous,” but maintains its exponential shape. In this way, data rights value increases with the value of the network – precisely at each cliff induced by the choice of  $\alpha$ .

Figure 3. Histogram of data rights with small network sizes



## 10. TEAM



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Sripada**

CEO/Founder



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Victor**

CTO



**Venkatesh  
Krishnamurthy**

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**Veronika  
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**Kyle  
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**Will  
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