



# Whitepaper

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# 1. DISCLAIMER

The purpose of this Whitepaper is to present the NOIZ token to potential token holders. The information set forth below may not be exhaustive and does not imply any elements of a contractual relationship. The sole purpose is to provide relevant and reasonable information to potential token holders in order for them to determine whether to undertake a thorough analysis of the company with the intent of acquiring NOIZ tokens.

Nothing in this Whitepaper shall be deemed to constitute a prospectus of any sort or a solicitation for investment, nor does it in any way pertain to an offering or a solicitation of an offer to buy any securities in any jurisdiction. This document is not composed in accordance with and is not subject to, laws or regulations of any jurisdiction, which are designed to protect investors.

The product token is not a digital currency, security, commodity, or any other kind of financial instrument and has not been registered under the Securities Act, the securities laws of any state of the United States or the securities laws of any other country, including the securities laws of any jurisdiction in which a potential token holder is a resident.

NOIZ token cannot be used for any purposes other than as provided in this Whitepaper, including but not limited to, any subscription, speculative or other financial purposes. The NOIZ token confers no other rights in any form, including but not limited to any ownership, distribution (including, but not limited to, profit), redemption, liquidation, property (including all forms of intellectual property), or other financial or legal rights, other than those specifically set forth below.

Certain statements, estimates and financial information contained herein constitute forward-looking statements or information. Such forward-looking statements or information involve known and unknown risks and uncertainties, which may cause actual events or results to differ materially from the estimates or the results implied or expressed in such forward-looking statements.

This English language Whitepaper is the primary official source of information about the NOIZ token. The information contained herein may from time to time be translated into other languages or used in the course of written or verbal communications with existing and prospective consumers, partners etc. In the course of such translation or communication, some of the information contained herein may be lost, corrupted, or misrepresented. The accuracy of such alternative communications cannot be guaranteed. In the event of any conflicts or inconsistencies between such translations and communications and this official English language Whitepaper, the provisions of this English language original document shall prevail.

## 2. ABSTRACT

NOIZ uses AI-powered marketing campaigns and data monetization to thwart ad fraud and help businesses create real personalization across customer journeys, resulting in higher engagement and greater returns on marketing investment.

Using an SDK and API, NOIZ has integrated its AI-powered marketing campaigns with WordPress, email service providers, blockchain protocols, ad networks, chatbot services, payment gateways, and messenger apps. An individual person, or team, can build and service their own customizable NOIZ campaigns and even contribute to the growing list of integrations.

Consumers who monetize their data are rewarded in NOIZ tokens. In the fashion of a loyalty program framework, they can redeem their NOIZ tokens for special offers, and redeemed tokens are donated to social impact organizations. This boosts the profile of the brand providing the special offer, and this is how engagement becomes impact through NOIZ.

NOIZ is being built by a 10-person team, including 1 serial entrepreneur, 1 DSP architect, and 2 lead developers with past experience at AxePay, the Canadian Space Agency, NEM and The Boeing Company.

# 3. INTRODUCTION

NOIZ is a platform that combines communication with marketing technology tools to help businesses acquire genuine data and to truly personalize customer journeys for a higher return on investment (ROI).

NOIZ is also making use of blockchain technology to securely store and monetize consumer data, converting the data to impact through loyalty rewards programs.

Efficient customer journeys, an end to ad fraud, and impact through data compensation; that's the NOIZ advantage.

## 3a. Online Advertising: Current State

There are three core groups in online advertising and media: consumers, marketers and publishers.

With each group facing different challenges, NOIZ has created solutions to help all three.

### 3a.i. Consumer Perspective:

1. **Data Leakage:** According to the [Princeton Web Transparency & Accountability Project<sup>1</sup>](https://webtap.princeton.edu/research/), 76% of websites now contain Google trackers (cookies) and 24% have Facebook trackers. With programmatic advertising, cookies, GPS tracking systems, and bots all following consumer actions on and off-line, ad platforms, publishers and third parties have been exploiting consumer data.
2. **Manipulation of information and opinion:** Due to leaked data, consumers are frequently victimized and manipulated by malicious targeting. Recent political campaigns around the world have used this to their advantage, with [30+ countries already affected<sup>2</sup>](https://www.npr.org/sections/alltechconsidered/2017/11/16/564542100/how-disinformation-and-distortions-on-social-media-affected-elections-worldwide), including the US, China, Russia, Sudan and Mexico. [Facebook's data piracy scandal involving Cambridge Analytica<sup>3</sup>](https://techcrunch.com/2018/03/25/zuck-apologizes-for-cambridge-analytica-scandal-with-full-page-print-ad/) is an example of how such data collection can occur.
3. **Lack of control:** Consumers are often unable to control what information is collected about them. Options to “opt-out” exist on some platforms, but consumers need to take deliberate actions in their accounts to make updates. Most consumers struggle to protect their privacy either because they are unaware or find it challenging or tedious to navigate the process.

Consumers also have limited options when it comes to providing feedback. They are unable to speak out for or against the marketers and publishers they like or dislike. This leads to consumers continuously being exposed to advertisements they do not wish to see.

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<sup>1</sup> <https://webtap.princeton.edu/research/>

<sup>2</sup> <https://www.npr.org/sections/alltechconsidered/2017/11/16/564542100/how-disinformation-and-distortions-on-social-media-affected-elections-worldwide>

<sup>3</sup> <https://techcrunch.com/2018/03/25/zuck-apologizes-for-cambridge-analytica-scandal-with-full-page-print-ad/>

4. **Irrelevant, repetitive ads:** Consumers are tired of seeing irrelevant and persistent online ads. As a result, many consumers prefer not to see ads at all and end up using [ad-blocking services](#)<sup>4</sup>.
5. **Lack of data ownership:** Consumers do not own the data that they generate; they are not compensated for the information they provide to marketers, publishers nor third parties. Their personal information is instead freely traded as valuable data in the market, as described in Point 1 of the Consumer Perspective.

### 3a.ii. Marketer Perspective

1. **Lack of data transparency:** Digital media has been estimated to take in US\$ 237 billion in 2018, 40% of the global ad expense. [This figure is expected to grow](#)<sup>5</sup> to US\$ 291 billion or to 50% of global ad expense in 2020. Yet, in a 2017 [survey](#)<sup>6</sup>, the vast majority of chief marketing officers responding said they could not demonstrate return on investment (ROI) for online advertising.

This is the result of programmed bots and scam accounts inflating the number of views, clicks and impressions that determine the cost and effectiveness of digital advertising. In 2017, big brands demanded greater data transparency from both ad networks, such as Google and Facebook, along with publishers, such as NYTimes and ESPN. P&G Chief Marketing Officer Marc Pritchard [spearheaded this demand](#)<sup>7</sup> in January of 2017.

Similarly, even if marketers connect with publishers directly, the problem still exists. It is hard to validate the web traffic numbers provided by publishers and translate these numbers into accurate ROI and/or KPIs for marketers.

2. **Low ROI:** A [Juniper Research report](#)<sup>8</sup> has predicted that ad fraud will consume US\$ 42 billion in 2019 and US\$ 100 billion in 2023. With ROI already being difficult to calculate due to fraudulent traffic, the situation is made worse by the fact that fraudulent traffic consumes half of online advertising budgets.
3. **Inefficient Targeting:** Brands often end up displaying ads to consumers who often are uninterested in those particular ads. This is due to targeting based on the analysis of online interactions and collected personal information. This is not always accurate information, however.
4. **Ads display next to malicious content, hurting brand image:** Many ad platforms have been ineffective at keeping a check on malicious publishers (those that publish fake news, plagiarised content or even [extremist content](#)<sup>9</sup>); thereby, potentially harming the reputation of those who

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4 <https://marketingland.com/survey-shows-us-ad-blocking-usage-40-percent-laptops-15-percent-mobile-216324>

5 <https://www.cnbc.com/2017/12/04/global-advertising-spend-2020-online-and-offline-ad-spend-to-be-equal.html>

6 <https://cmosurvey.org/results/august-2017/>

7 <https://www.cnbc.com/2017/01/31/procter-gamble-chief-marketer-slams-crappy-media-supply-chain.html>

8 <https://www.juniperresearch.com/researchstore/content-commerce/future-digital-advertising>

9 <https://www.businessinsider.in/The-real-motivations-behind-the-growing-YouTube-advertiser-boycott/articleshow/57769246.cms>

advertise on such publisher sites.

5. **Middlemen fees:** Ad networks, exchanges and agencies all act as middlemen and take a portion of ad budgets that could instead be spent on additional ad space. This money is lost as a result of working indirectly with publishers.

### 3a.iii. Publisher Perspective

1. **Lack of data transparency hinders content strategy:** Publishers use data analytics to optimize content strategy; this includes methods of delivery (email, social media, time of day, frequency), medium (video, blog, infographic), length (500-750 words, 20 second videos) and topic. Using skewed data to make the decisions, which are meant to optimize this strategy, means there is higher potential for errors in the content strategy.
2. **Lack of data transparency devalues media kits:** Media kits are the documents that publishers prepare to let the advertising community know the value of the publishers' ad space. Publishers use information such as monthly page views, unique visitors and subscribers along with demographic info such as location, age and gender to create audience profiles in their media kits. However, the numbers and information they provide in their media kits can be skewed due to fraudulent traffic, making the data they provide flawed. Yet, this flawed data is used by publishers to determine the value of their ad space.

With CMOs like P&G's Marc Pritchard demanding greater data transparency (as mentioned above), publishers will face the challenge of providing authenticated data in their media kits.

3. **Middlemen fees:** Like marketers, publishers have the option to work with ad networks, exchanges and agencies to sell ad space. Publishers determine the value of their ad space and middlemen ensure the publisher receives the requested amount. In this method, marketers need to give more money to the middlemen, which means less money gets spent on publishers' ad space.

## 3b. The NOIZ Solution

Using blockchain technology, AI, a Software Development Kit (SDK) and an API, NOIZ is redeveloping the online advertising industry by combining the following features:

1. **Asset creation and verification:** Large amounts of information are shared across the Internet every second of every day, and this information is a huge asset in the hands of the right people. To further explain: each click, view, image, and tag that a person, company, government or any organization generates through their online actions contributes to the exponentially growing pool of information known as Big Data. For many, Big Data provides information about target audiences, constituents, and economies. Having such information allows decision-making to be more accurate and efficient, and that is valuable.

However, not all information holds the same value. NOIZ is using blockchain and AI to verify the value of information that is shared across the online advertising and media industries, creating true digital assets on which consumers, marketers and publishers can all capitalize.

2. **Ad fraud prevention:** NOIZ analyzes campaign interaction data, such as timestamps and mouse movements, to filter out suspicious activity. Consumers also need to complete a Know Your Customer (KYC) process to collect NOIZ tokens; this is another layer of anti-fraud protection.
3. **Ownership and transfer of digital assets through blockchain:** All private information that is shared on the NOIZ network is owned by those who create the information. Marketers own the images and copy that make up their ads; publishers own the content and ad space on their platforms; consumers own the data that is created from their engagement; and everyone owns their personally identifiable information.

This information, the digital assets, can be transferred, shared and sold between the different actors of the NOIZ network and with individuals or organizations on non-NOIZ networks, creating a method for everyone to monetize the value of their digital assets (more details in section 7).

4. **NOIZ SDK and API:** Marketers contribute to the development of NOIZ campaigns by integrating their own marketing components into the campaigns they create.
5. **Increased engagement:** Consumers are incentivized to engage with virtual assistant NIKOLA in marketing campaigns through the reward of NOIZ tokens. Tests are being run to confirm the belief that token incentivization will increase engagement.

NOIZ's NIKOLA is a virtual assistant that complements the artwork of an ad by enabling marketers and publishers to converse directly with consumers. This type of interactive advertising gives consumers greater opportunity to engage, much more than the standard click.

NIKOLA also learns from consumers' engagement, improving its conversational abilities over time and further increasing engagement through a more customized customer journey.

Consumer control over data, resulting in hyper-targeting (explained further in 3c.i), also generates higher engagement.

6. **Engagement to impact:** NOIZ awards consumers tokens for sharing their personal information and online engagement data; this data is converted into impact when consumers redeem their NOIZ tokens for special offers.
7. **Community regulated:** Decentralization is sought after by using consensus voting in combination with Proof of Stake (as explained further in section 5d). Actors in the NOIZ ecosystem can vote

up or down to indicate how they feel about the content and/or actions of other actors in the NOIZ community, along with the other actors themselves.

Consumers can upvote or downvote specific marketers and publishers, content, social impact organizations, as well as NOIZ's ad matching algorithm. Marketers, publishers and social impact organizations can also vote in similar ways, but they cannot vote within their own category (i.e. marketers can't vote on other marketers).

The Proof of Stake model adds weight to holding NOIZ tokens and strengthens the voting process, preventing actors from voting maliciously.

8. **Peer-to-peer (P2P) marketplace:** NOIZ is an ad network that allows marketers and publishers to work with one another directly and transparently. Once NIKOLA creates the first asset transfer for marketers and publishers, NIKOLA will no longer be necessary to organize the transactions. Instead, on the NOIZ platform, marketers and publishers will be able to streamline their system for selecting which ad space to purchase / which ads to allow.

### 3c. What Makes NOIZ Unique?

#### 3c.i. NOIZ Profiles

NOIZ profiles are designed for consumers to easily create and store their engagement data and personal information on the NOIZ blockchain network. This is the consumer information brands use to best deliver ads and other media online.

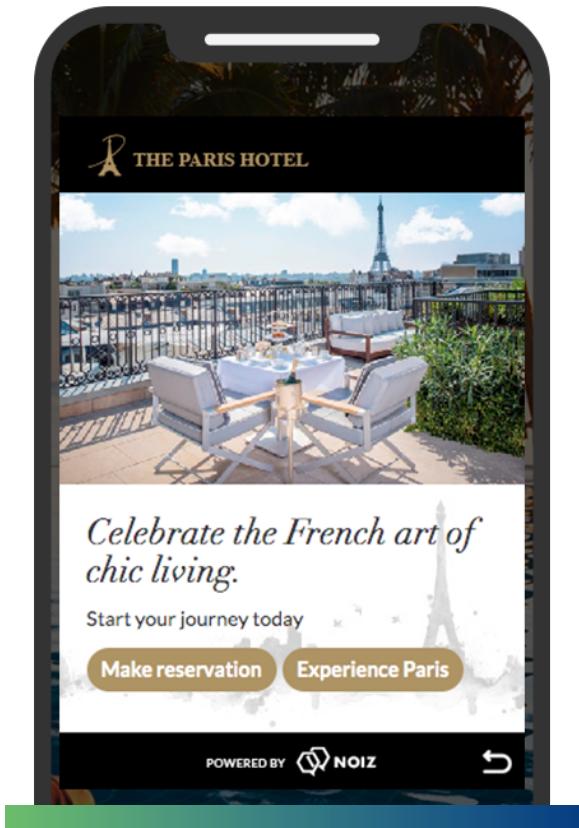
Consumers monetize the data stored in their NOIZ profiles by granting brands, individuals and/or third-parties access to target them based off this information. Consumers can choose which parts of their NOIZ profiles they would like to share with whom. They can opt to share only segments, the entire NOIZ profile or none of it all. As stated in the paragraph above, this data is used to determine the flow of content consumers see online, and with consumers in control of who has access to this data, they are also in control of the content flow.

NOIZ users will be able to rank their data in different categories and have the data verified by friends or trusted 3rd parties (see section 4 for more details). This gives brands an idea of how true the data is that they use to target the consumer, resulting in brands knowing exactly who to place their ads in front of and resulting in consumers seeing ads and media that are of actual interest to them.

This is known as hyper-targeting, and with consumers in control, it is more efficient than ever before. Consumers seeing ads and media they like means they will be more likely to engage, which means brands will be more efficiently spending their ad budgets for significantly improved ROI.

### 3c.ii. Conversational Data through Interactive Marketing Campaigns

NOIZ equips display ads and web page marketing campaigns with virtual assistant NIKOLA, creating campaigns that converses with consumers.



The fact that the campaign is cognitive will enable it to continuously learn from consumer interactions for the purpose of improving user experience and increasing engagement even further.

Conversational data is much more contextual than simple demographic data as well, which provides marketers greater insight into their target audiences, beyond that of even the NOIZ profiles.

### 3c.iii. Social Impact

NOIZ includes social impact organizations in its token economics, allowing such organizations to receive tokens through the seamless transactional processes that occur between the other actors of the NOIZ community.

Should a consumer redeem tokens for special offers provided by an advertiser or publisher, those redeemed tokens will be forwarded to social impact organizations. Actors in the NOIZ community can also donate their tokens directly, if they so choose.

### 3c.iv. Experienced Team and Partners

NOIZ has a team of professionals with over 150 years of collective experience in digital media. In

addition to this, NOIZ is partnered with well-established agencies and ad networks. As a result, NOIZ is able to leverage the relationships these partner companies have with their clients to grow the advertiser and publisher communities in the NOIZ network.

NOIZ advisor and former Asia Miles CEO Stephen S.Y. Wong is an expert in rewards points systems and is using this expertise to help determine the reward process for the NOIZ ecosystem.

Helene Li, another advisor of NOIZ, is a consultant and Top 10 Influencer of sustainability and social impact investing. She is passionately working towards purpose-led investment becoming mainstream in the financial industry, and she is using this passion to help boost investment and partnership opportunities for NOIZ.

Co-founder of 8 Decimal Capital Herbie Fu is an advisor, investor and strategic partner for over 10 blockchain projects, and he is now using his expertise to advise on the NOIZ project.

### **3c.v. Governance**

NOIZ has combined a consensus voting system with Proof of Stake. This enables community members to form a token-backed consensus for three purposes:

1. To upvote or downvote on advertisers, publishers and social impact organizations staying within the NOIZ ecosystem of integrity and remain compliant with the community standards
2. To upvote or downvote advertiser's ads and publisher's contents
3. To educate the NOIZ's ad matching algorithm

Simply voting, with no stakes, tells NIKOLA how better to deliver content to consumers on individual levels, but votes that are backed using the Proof of Stake mechanism indicate a desire to keep or remove an actor and/or an actor's content.

In this way, the community governance is also a layer of filtration for keeping malicious parties and their content out of the NOIZ ecosystem.

## **3d. NOIZ Value**

### **3d.i. Token Use**

1. Marketers use NOIZ tokens to pay community members and publishers for marketing campaign creation and distribution, and to purchase consumer data.
2. Publishers use NOIZ tokens to purchase consumer data, attract new viewership, and become marketers (for subscriptions).
3. Consumers use NOIZ tokens to earn special offers on products and services provided by marketers and publishers.

4. Social impact organizations use NOIZ tokens to create ads; they can also sell their tokens to the marketers looking to purchase tokens for marketing campaigns.
5. The more tokens that are held by an actor of the NOIZ ecosystem, the higher that actor's trust score and the greater weight on his or her votes.

### **3d.ii. Business Value**

1. NOIZ has monetized consumer data and created a marketplace in which this data can be sold and purchased.
2. Programmatic advertising algorithms that are trainable will be used for the ad matching optimization.
3. Marketers choose and create the dialogue / interaction flow on their advertisements, allowing marketers to collect a plethora of consumer information.
4. NOIZ will create marketing campaigns on behalf of marketers, should they request, in exchange for NOIZ tokens.
5. NOIZ campaigns are customizable so that marketers can create the user experience their audience wants
6. NOIZ will also implement other interactive ads into the NOIZ ecosystem, enabling NOIZ to not only have conversational data, but also interaction data from other ad forms such as interactive videos, AR/VR and affiliate programs.

# 4. NOIZ PROFILES & HYPER-TARGETING

## 4a. NOIZ Profiles

Engagement data automatically accumulates in an individual's NOIZ profile, if the individual allows it. Additionally, consumers can upload their lifestyle data directly into their NOIZ profiles or by interacting with NIKOLA. NOIZ profiles are stored on the NOIZ blockchain network. Thus, authenticating consumer data, keeping it safe from being hacked or leaked, giving consumers control over who has access to their data and enabling consumers to monetize this data.

### 4a.i. Lifestyle Data

Lifestyle data includes:

1. Images (with keyword tags)
2. Videos (with keyword tags)
3. Demographic Information, such as:
  - a. Age
  - b. Gender
  - c. Location
4. Personal details, such as:
  - a. Favorite color is green
  - b. Father/mother of two children
5. Personal preferences, such as:
  - a. Preferring hiking over biking
  - b. Preferring blue over red
6. Interests, such as:
  - a. Modern art
  - b. Travel

### 4a.ii. Validation of NOIZ Profile

Consumers can grant their friends access to all or some of the lifestyle data stored in their NOIZ profiles, and then request that their friends upvote the lifestyle data made available to them. Having friends upvote one another's lifestyle data helps to verify that the information is true, making it more valuable to brands.

A data needs to be validated by half of user's friend community to be considered as approved, trustful and premium data.

#### **4a.iii. Validation Points**

Consumers acquire validation points on their lifestyle data each time another user provides an upvote.

Validation points are used to segment consumers into tiers based on a general score of all validation points they have in different categories. Each category has its own validation score, and each user has an overall validation score. The higher the overall validation score is, the better the special offers will be when the consumer chooses to redeem his or her NOIZ tokens.

#### **4a.iv. NOIZ Badges**

Validations points are associated with categories, or tags, known as NOIZ badges. Consumers can be targeted based off which badges they have. For example: Consumer A has a photo of him/herself playing tennis and that photo is upvoted by Consumer A's friends 10 times. Consumer A now has a score of 10 in both the Tennis badge and the Sports badge.

Earning different NOIZ Badges allows users to have access to special offers specifically created for badge owners. (e.g. promotion on Tennis rackets for Tennis badge owners).

Badges are created over time by NOIZ; users are able to create new badges as well, which become accepted after the badge receives enough validation points from other community members.

#### **4a.v. Monetization of NOIZ Profiles**

Consumers monetize the data stored in their NOIZ profiles by granting brands, individuals and/or third-parties access to the information. Consumers can choose which parts of their NOIZ profiles they would like to share with whom. They can opt to share some segments, the entire NOIZ profile or none of it all.

### **4b. Hyper-targeting**

With consumers having control over the information that brands use to target them, they now have the control over the flow of advertisements and other media that are displayed to them online.

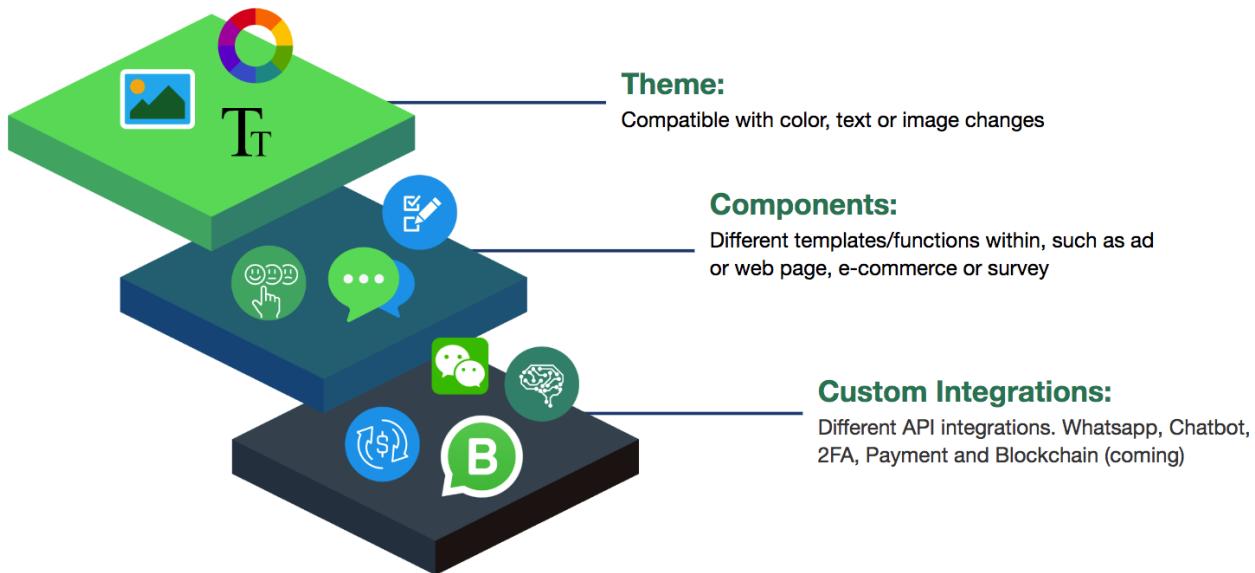
From a brand's perspective, they use the information they know about consumers to optimize advertising and media strategies. With consumers granting trusted brands access to their Lifestyle Persona data—which could differ on a brand-by-brand basis—consumers are enabling brands to hyper-target them. As a result, consumers will see the ads that are specific to their interests, which leads to higher engagement and more efficient ad spend for brands.

A Proof of Engagement concept is created by using AI and blockchain to verify users and authenticate engagement, preventing ad fraud from occurring within the NOIZ ecosystem.

# 5. NOIZ SERVICES FOR MARKETERS

NOIZ has started offering value to marketers through campaign management services.

The various layers of the NOIZ architecture allow NOIZ to offer a variety of customer experiences and marketing services from simple and inexpensive, to fully customized enterprise integrated solutions.



## 5a. Overview of Services

The NOIZ platform helps businesses interact with their customers in more meaningful ways by making it easier to build first-rate integrated digital user experiences.

NOIZ enables advertisers to build their own integrated ad campaigns through a fully automated Software as a Service platform. However, we can begin offering these services through a traditional digital advertising model immediately, starting June, 2019.

Services	Available	Description
Custom theme	June, 2019	Marketers can add their branding and preferences to NOIZ themes and components
Custom NOIZ component	June, 2019	Please send me more information 1/2n
Customized NOIZ component	June, 2019	Marketers can extend an existing NOIZ component with their own features

Custom API Integration	June, 2019	Integrate a 3rd party service with NOIZ
Custom Report	August, 2019	View insights about your customer interactions from a custom perspective. Includes a new panel in your admin dashboard with custom data visualization

## 5b. Available Components

\*Currently sold as custom components

### 5b.i. Chatbot

A custom-branded chatbot for customers to interact with. Integrations with 3rd party services (such as 2FA, payment gateway, and CRM systems can help marketers automate lead generation, loyalty programs, and customer service.

### 5b.ii. Custom

Marketers can use their imagination! Any responsive user interface widget that uses NLP, Payment, CRM, or even blockchain.

### 5b.iii. Survey\*

A custom smart survey that can help marketers gain valuable insights about their customers, while helping the customers find what they're looking for faster.

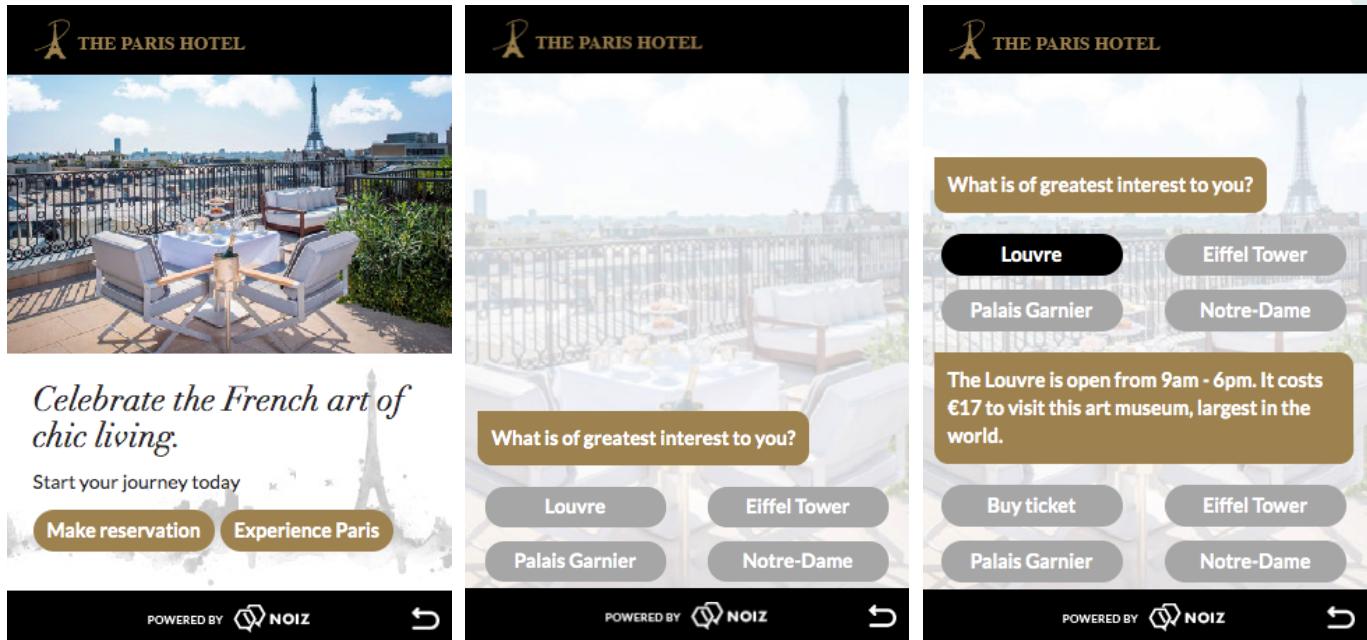
### 5b.iv. E-Commerce\*

A product description widget that allows the customer to ask questions about it, and purchase it with Stripe or Paypal, all without leaving the widget.

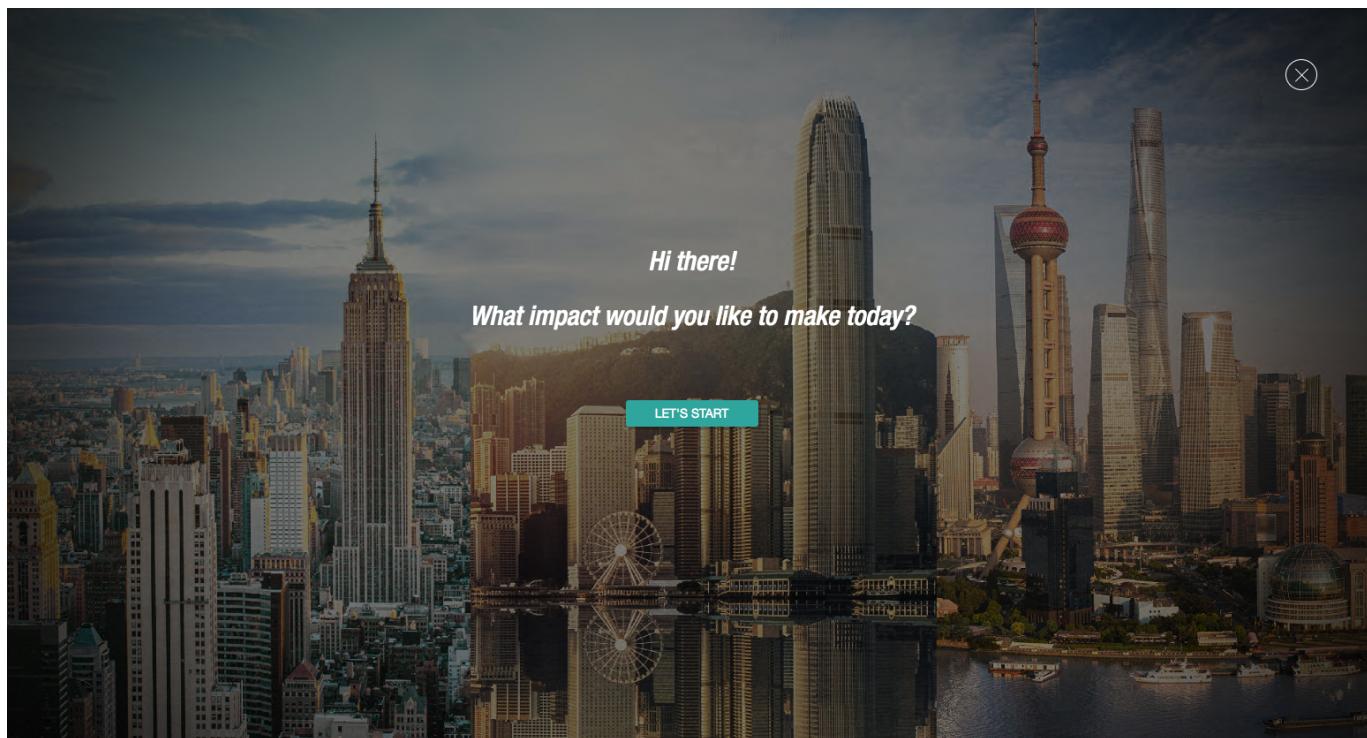
## 5c. Channels

Channel	Available	Description
Cognitive Ad Campaign	January, 2019	Distribute NOIZ advertisements through Hotmob and GDN ad networks.
Embedded Website Chatbot	June, 2019	A NOIZ widget embedded into your website
Conversational Landing Page	June, 2019	A conversational landing page, powered by Google DialogFlow Natural Language Processing. Great for generating leads, collecting customer feedback, providing customer support, and processing orders. Can be integrated with most messaging services.

Ad Format:

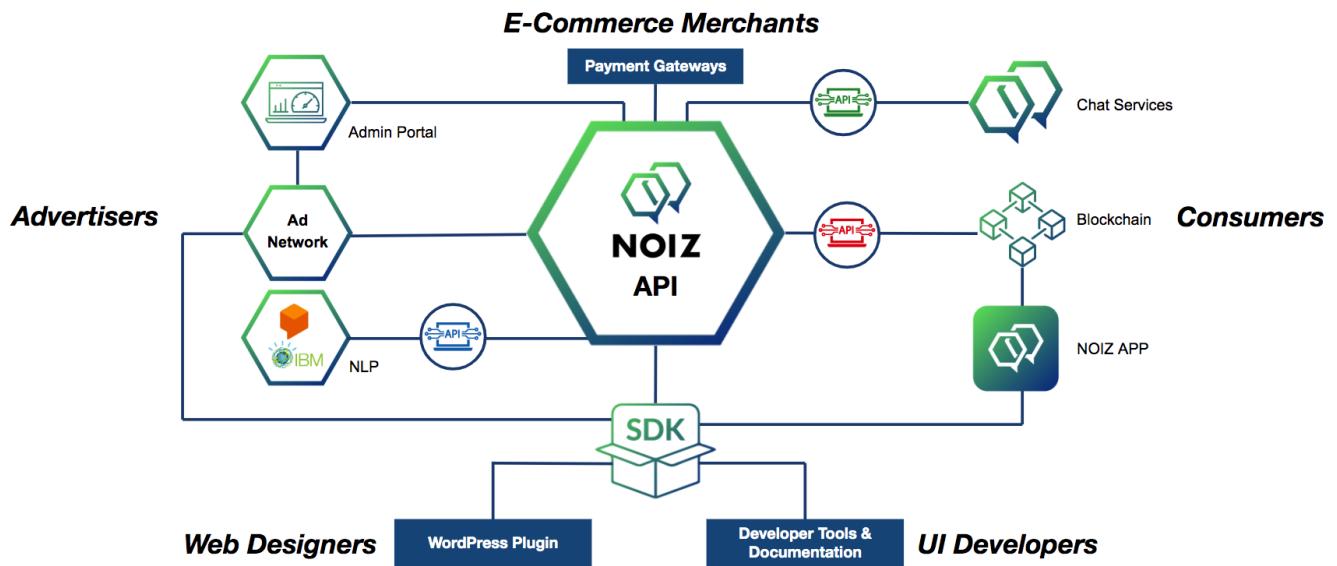


Web/landing page Format:



## 5d. Details of SDK & API

Using an SDK and API, NOIZ has integrated its AI-powered marketing campaigns with WordPress email service providers, blockchain protocols, ad networks, chatbot services, payment gateways, and messenger apps. An individual person, or team, can build and service their own customizable NOIZ campaigns and even contribute to the growing list of integrations.



# 6. PROOF OF ENGAGEMENT THROUGH NIKOLA

A Proof of Engagement concept is created by using AI and blockchain to verify users and authenticate engagement, preventing ad fraud from occurring within the NOIZ ecosystem.

Authenticated data provides marketers with the transparency they so rightfully deserve and desire. This allows marketers and publishers to make more accurate decisions from data analysis, resulting in higher ROIs.

Proof of Engagement is achieved through conversing with NIKOLA in cognitive marketing campaigns, where REM, Passive Monitoring and verification of users occurs.

## 6a. What is NIKOLA?

NIKOLA is a virtual assistant that NOIZ has equipped to the creative of display ads to make cognitive marketing campaigns, currently in the form of display ads and web/landing pages. A plug-in to equip emails with the cognitive marketing campaign is also on the horizon.

This new campaign technology stores conversational data from user interactions and learns from the collected information—using AI and NLP methodologies—to better improve its conversational abilities in the future. This results in a friendlier, more personalized user experience.

NIKOLA is able to work with multiple languages using freestyle text or voice messages. It is currently operating within English, Chinese and Korean at text levels.

NIKOLA can also classify consumer responses, their engagement, into a Level of Intent system and deliver tokens to consumers based on this rating system.

Level of Intent	Stage	Intent	Tokens Rewarded
Level 1: Arise	Provides preference	Yes, I would like to take a trip	1/8n*
Level 2: Interest	Provides personally identifiable information	Please send me more information	1/2n
Level 3: Conversion	Completes conversion funnel	Book, buy now, pay	n - 1/2n - 1/8n

\*n is the maximum amount of tokens an advertiser will want to pay

Marketers can determine the amount of tokens to reward for each Level of Intent. They can also choose from the following applications to provide NIKOLA with an objective when collecting intent:

1. Lead Generation Dialogue
2. Customer Service Dialogue
3. Brand Engagement
4. Campaign Promotion
5. Event/Sign-up/Subscription Engagement
6. e-Commerce
7. Online to Offline (O2O) Traffic
8. Surveys
9. Gamification
10. Loyalty Extension Promotion
11. Localized & Personalised Attraction Promotion
12. Live Video Interactions

## 6b. NLP and NLG

Natural Language Processing (NLP) and Natural Language Generation (NLG) improve enable NIKOLA to analyze and continuously improve conversational data. Through such a feeding process, NIKOLA is able to gain valuable insight of user behavior and generate satisfactory responses which evoke positive emotions from users.

NIKOLA will be trained to reach a high level of accuracy in predicting the most relevant underlying content to help unveil the most wanted subject related to a potential customer.

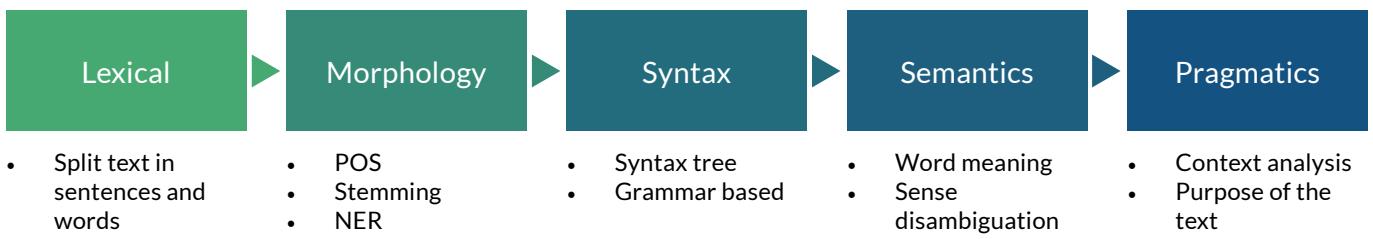
The purpose of NLP: Natural Language Processing means analyzing natural languages to generate a structured model through text data.

The purpose of NLG: Natural Language Generation means simulating natural language from the generated model.

### 6b.i. Purposed Workflows

1. NLP: In this initial stage, NIKOLA analyzes the input of the conversation text from NOIZ ads and transforms it into structured data.
  - a. The basic components of a given language can be broken down into:
    - i. Lexical: basic structure of the text
    - ii. Morphology: analysis of the structure of each word (e.g. birds = + noun + plural)
    - iii. Vocabulary: the set of words of a language
  - b. The following levels of linguistic analysis can be found:
    - i. Pragmatics: intended meaning of the sentence

- ii. Semantics: meaning of the sentence
- iii. Syntax: grammatical structure of the sentence



c. How this will be implemented for NIKOLA?

- i. We can utilize packages such as NLTK (Natural Language Toolkit) and Tensorflow to test run in python the given records of our data, through which we are able to obtain structured data ready to be studied for our needs.

d. Example

"NIKOLA, I would like to go someplace nearby for lunch."

<i>Positive</i>	<i>Negative</i>
{+ target, context}	{- target, context}
{go, like}	{go, aardvark}
{go, to}	{go, incubate}
{go, someplace}	{go, twelve}
{go, nearby}	{go, therefore}

"NIKOLA, I want to eat Italian food."

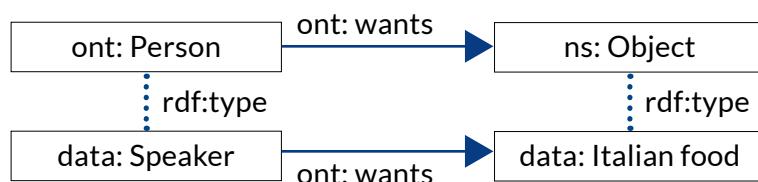
Want (I, Italian food)

Facts:

There are two arguments to this predicate: Both arguments must be NP

Pre-verbal argument: Subject Role

Post verbal argument: Object role



2. NLG: In the second stage, we aim to find the most eligible underlying "language model" from which we can sample in order to generate text to improve the output performance of NIKOLA.

a. Foundation models through which the most eligible model is built upon:

- i. Probabilistic Language Model: Assigns a probability for the next part of the sequence. (e.g. Conditional Frequency Distribution)

- ii. Recurrent Neural Networks (RNN): finds internal representation of sequence instead of exact matches. (e.g. long-short term memory RNN architecture could be a good choice to predict the very next point of a given time series)
- iii. Generative Advanced Networks (GANs): distinguish fake images from a real images

## 6c. REM and Passive Monitoring

NIKOLA comes equipped with Run-time Execution Monitoring (REM) and Passive Monitoring. These two forms of AI algorithms enable NIKOLA to analyze user actions before and after the actions are made. Should NIKOLA suspect any foul play in a user's activities—perhaps because multiple users perform the exact same actions in the exact same amount of time—that user will be put up for review by the NOIZ community's elected NOIZers (as described in section 5a.4) and possibly blocked from the NOIZ ecosystem.

REM and Passive Monitoring pair with the marketing campaign to analyze conversations. As the campaign generates more opportunities for consumers to perform actions, NIKOLA will be able to analyze the wording, sentence structure, and frequency of button clicks that a consumer performs. As more information becomes available to be analyzed through the conversational data, NIKOLA will continuously update its REM and Passive Monitoring algorithms, blacklisting fraudulent actions. In its current state, due to this new method of NIKOLA asking consumers to perform interactions, NIKOLA will be capable of identifying spambots and fraudulent accounts.

## 6d. Verified Users

NOIZ is a permission-based blockchain network that requires users to complete a KYC process. This registration process helps to prevent fraudulent actors, such as spambots and scammers, from joining the NOIZ community. Should community members deem another actor in the NOIZ ecosystem as being fraudulent, they can vote to have the fraudulent actor removed from the network. Blockchain also enables NOIZ to analyze transaction history, which sets up an additional process for verifying users, as fraudulent users would have transaction histories that are flagged.

# 7. TOKEN ECONOMICS

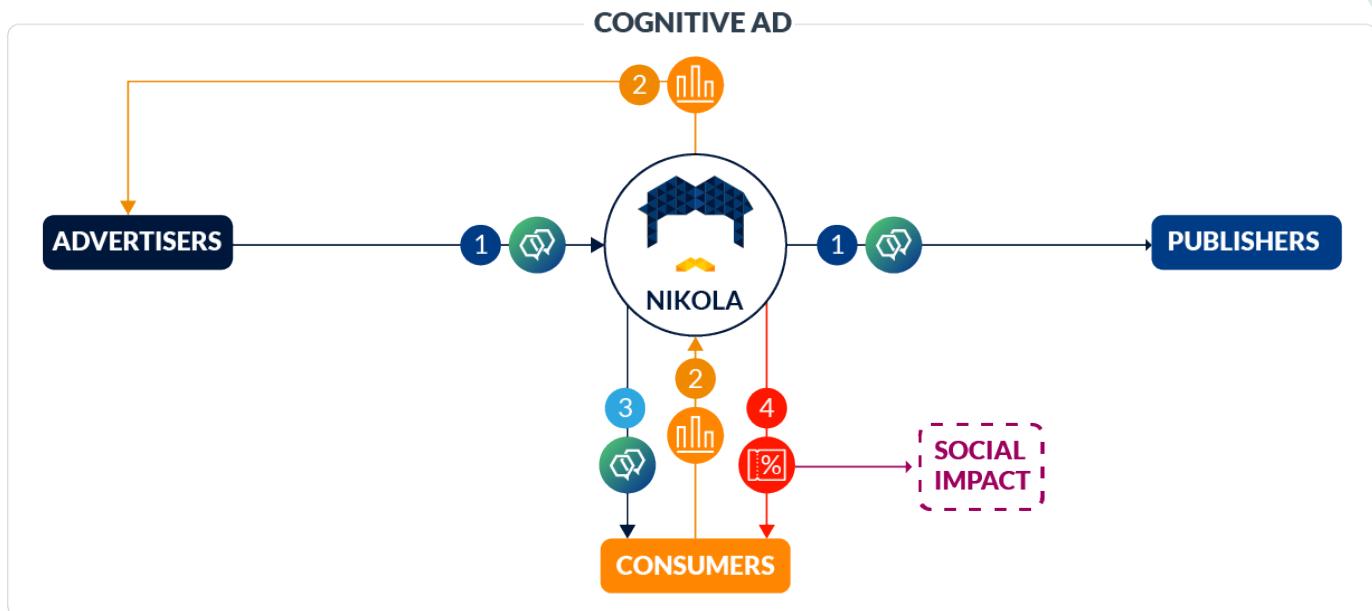
## 7a. Actors of the NOIZ Ecosystem

Actors, or parties, of the NOIZ ecosystem make up the community. They are those who have completed the KYC process and have been granted access to the NOIZ permission-based blockchain network. The devices that are granted to be nodes make up the storage space that NOIZ and its data will exist upon, and this network of nodes will be confidential.

The actors of the NOIZ platform consist of:

1. **Marketers:** These are the brands wishing to place ads across the NOIZ ecosystem.
2. **Publishers:** These are the brands that create content to attract and grow audience members. Publishers sell ad space on their sites to fund content creation.
3. **Consumers:** These are the people who view and interact with the NOIZ ads, exchanging their personal information only to those they so choose and being rewarded for doing so.
4. **NOIZers:** These are the actors who have been elected by the NOIZ community to be the key decision makers of the consensuses that are formed through the voting process.
5. **NIKOLA:** This is the virtual assistant for the NOIZ ecosystem and is the combination of several machine learning algorithms. It handles cognitive, interactive conversations with users, filtering out fraudulent traffic and securely storing data and other digital assets across the NOIZ blockchain network.
6. **Social Impact Organizations:** These organisations are beneficiaries of donated and redeemed tokens.

## 7b. Token Flow



NOIZ tokens can be purchased from and/or traded by any member of the NOIZ community. Once community members hold tokens, depending on their selected actor role, they can perform a variety of different actions.

1. **Create Marketing Campaign:** Marketers use NOIZ tokens to purchase ad space from publishers, create marketing campaigns and reward consumers.
2. **Share Data:** Consumers generate conversational data by chatting with the cognitive ads; this data is provided to the marketers that create the ads.
3. **Receive NOIZ Tokens:** Consumers are awarded with NOIZ tokens by the marketers for sharing access to conversational data and personally identifiable information.
4. **Receive In-ad Special Offers:** Consumers can receive special offers within the marketing campaigns themselves or by looking through a brand's profile on the NOIZ app. Marketers provide special offers in exchange for redeemed NOIZ tokens. Redeemed tokens are then forwarded to social impact organizations.
5. **Purchase Data:** From their dashboards, publishers and third parties can use NOIZ tokens to purchase consumers' conversational data and personally identifiable information, should the consumers approve.
6. **Monetize Data:** Consumers can sell their data to marketers, publishers and third parties in exchange for NOIZ tokens.

7. **Redeem Tokens:** Consumers can access their NOIZ wallets to view special offers located on brands' profiles. Consumers redeem their NOIZ tokens for these offers and the tokens are forwarded to social impact organizations.
8. **Receive Special Offers:** Consumers receive special offers by redeeming their tokens.

## 7c. Personal Interest Votes

Individuals can upvote or downvote content and/or actors of the NOIZ community to indicate personal preferences. This system operates in a similar way to 'following' or 'unfollowing' people on social media.

The purpose of indicating preferences through votes is to allow NOIZ community members to more easily control the flow of information that is presented to them through their online advertising experience.

As an example, perhaps Consumer A sees an ad about basketball, but Consumer A greatly dislikes basketball. The ad is appearing because Consumer A is 18-25 years old, male and has previously engaged with a golf (sports) ad. By downvoting the basketball ad, Consumer A is indicating that he simply doesn't want to see the ad, or similar ads, in the future.

For consumers, personal interest votes can occur directly within the marketing campaign or within the NOIZ wallet. Marketers, publishers and social impact organizations wishing to make personal interest votes can do so from their dashboards.

## 7d. Proof of Stake and Consensus

NOIZ is using a revolutionary Proof of Stake and consensus mechanism, that enables actors of the NOIZ platform to hold themselves accountable for one another's actions.

Proof of Stake only applies to the strengthening of the NOIZ ecosystem. It can combine with the voting system in order to form a consensus. A vote that is staked indicates that a NOIZ actor has expressed explicit interest in having another actor or another actor's content removed through a consensus vote, where all votes are backed by stakes. Parameters, effectively, a Constitution, will clearly address voting rules, such as duration and proportions of stakes and votes necessary to form a consensus.

Here's how the Proof of Stake and Consensus mechanism works:

1. **Community cleanup:** Should NOIZ actors wish to remove content or other actors from the ecosystem, they need to validate their vote by placing a stake on it. This is designed to prevent actors from voting out content solely due to a personal dislike for or grudge with a brand. Providing a stake behind a vote should only occur when the individual voting believes content and/or an actor are truly inappropriate for the NOIZ community.

2. **Correcting content matching:** NIKOLA uses an algorithm to match advertiser content with publisher content, and in doing so, places stakes on its matches. If NIKOLA makes a mistake with the matching and places a divorce attorney ad on a wedding site, the community can vote against the placement rather than the ad, the advertiser or the publisher.
3. **Supporting stakes:** Marketers in the NOIZ ecosystem are required to stake the advertisements they put on display. Doing so certifies their confidence that the ad meets the standards of the NOIZ community.

Publishers are not required to stake their content; however, their content can be voted against and removed from the NOIZ ecosystem as well. Staking their content will help to prevent this.

4. **Returned stakes:** If staked content is not voted to be removed, the stakes in support of the content will be returned to the actor(s) who placed the supporting stakes. The actor of these returned, supporting stakes will also receive a higher trust score, adding greater weight to their future stakes.
5. **Winning stakes:** NOIZers (mentioned in section 5a.4) will review consensuses to determine if verdicts are valid. Should a consensus be deemed valid, the actors who win the consensus will be rewarded the tokens from the actor(s) who lose the vote.

#### 7d.i. Trust Score

A trust score is calculated using the following factors:

1. **Token amount:** The amount of tokens an actor holds will affect their trust score. Those with large amounts of tokens held will have higher trust scores.
2. **Stakes won / returned:** Actors who place stakes and are part of a winning consensus will receive higher trust scores. Actors who place stakes that go unchallenged receive their stakes back and a higher trust score.
3. **Successful transactions:** The number of successful transactions that an actor performs will increase the actor's trust score.

To prevent new users from being taken advantage of by those with high trust scores, a grace period is assigned to new users where their trust scores will be equivalent to that of the community average.

A maximum trust score will exist to prevent actors from holding too great of a weight, keeping the Proof of Stake and voting system balanced. Trust scores may also become tiered in future versions of NOIZ.

# 8. SOCIAL IMPACT FACTOR

It is very important to the NOIZ team to make a true global impact with this project; hence, the reason social impact organizations are included in the NOIZ ecosystem. Before tokens are sent to social impact organizations, though, they are stored among 17 buckets that represent the UN's 17 Sustainable Development Goals (SDGs). Each bucket will have a set limit, once the limit is reached, the tokens within will be distributed amongst social impact organizations that are specifically dedicated to the cause associated with the bucket, and are part of the NOIZ community. In other words, if SDG Bucket #2: Zero Hunger reaches its token limit of 10,000 NOIZ tokens, the 10,000 tokens will be donated to social impact organizations devoted to feeding the hungry.

## 8a. Incentivization through Donation

Any actor of the NOIZ ecosystem can directly donate NOIZ tokens to the 17 buckets representing the UN's 17 Sustainable Development Goals (SDGs). However, the majority of tokens donated would be coming from the token redemption program.

Marketers and publishers can provide special offers, such as product discounts, limited-time deals and rewards points, in exchange for consumers' redeeming their NOIZ tokens.

All tokens that are redeemed for special offers will be donated to social impact organizations, making the incentive of the special offers simultaneously represent an incentive to make the world a better place.

As consumers redeem their NOIZ tokens for special offers, they will be supporting a good cause. Through this dual incentive, not only does engagement with ads increase, but so too does the amount of NOIZ tokens being donated to social impact organizations.

Consumers and brands will also be able to boast how many tokens they've donated to which social impact organizations, making this process competitive and adding yet another incentive to redeem / donate NOIZ tokens.

## 8b. Choosing a social impact organization to support

Brands will have the option to select which social impact organizations are on the receiving end of the redeemed tokens, allowing for brands to work with organizations they have already opted to support, such as Corporate Social Responsibility (CSR) campaigns.

If a brand chooses not to select a specific social impact organization to support, the redeemed tokens the brand receives will be donated to one or several of the social impact organizations that are on an approved list.

Consumers, marketers and publishers will also be able to view the profiles of social impact organizations in the NOIZ ecosystem via the NOIZ wallet / dashboard. Actors can then donate NOIZ tokens directly to the social impact organization(s) of their choosing.

### **8c. Why Provide Special Offers?**

It is not mandatory for brands to provide special offers; however, this is a feature for brands that want to show the world how they are making an impact; at the same time, they providing special offers is a useful marketing technique to promote products and/or services.

Each token that is donated to a social impact organization through a brand's special offer will contribute to an Impact Score that the brand can display to the world.

### **8d. Social Impact Organizations Make Use of NOIZ Tokens**

With social impact organizations on the receiving end of many NOIZ tokens, they will be able to:

1. Sell their tokens to marketers wishing to create more NIKOLA ads
2. Create and place ads on the NOIZ network, promoting events, donation pages, etc.

# 9. BLOCKCHAIN LEDGER DESIGN AND DATA MONETIZATION

## 9a. Cross-chain Ledger

NOIZ is partnered with IBM Blockchain, Harmony (One), NEM and XCHNG protocols and the NOIZ tokens have been created on the Ethereum network.

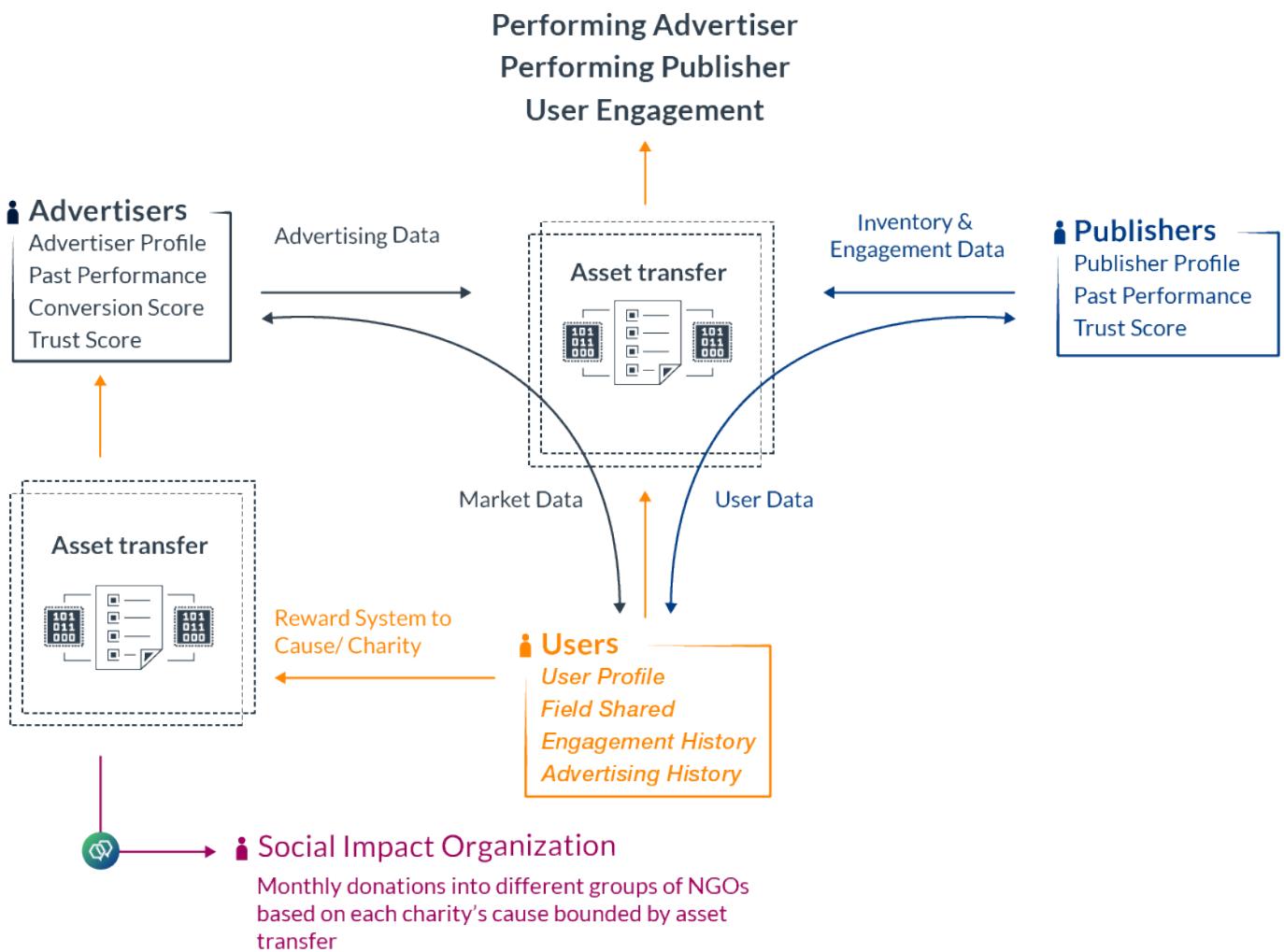
Different types of asset transfers can occur on different protocols.

In the case of asset transfers between advertisers and publishers, XCHNG is designed to make the process of buying and selling ad space easier and faster for brands.

Marketers will also be able to choose which blockchain protocol they would like to integrate with their marketing campaigns. Allowing them to choose where the campaign data is stored.

In the case of Fortune 500 companies, who tend to be skeptical of blockchain, IBM blockchain provides a peace of mind for such large companies, as it carries the weight of IBMs reputation.

## 9b. Data Monetization through NEM Blockchain Asset Transfer



### 9b.i. Types of Interactions

The NOIZ platform creates secure interactions between industry stakeholders to facilitate the following actions

1. **Marketers:** can announce their advertising campaigns and optionally put them out to tender.
2. **Publishers:** can indicate their preferences and capabilities, such as types of ads that can be paired with their content and prices for ad free experience. They can also communicate special offers and bounty programs to consumers.
3. **Consumers:** can specify which types of engagement data and personally identifiable information (PII) are allowed to be shared when other actors opt to purchase their data. They can set parameters that marketers and third parties must meet if wanting to purchase the consumer data. For example, the purchaser may be required to provide their name to the consumer.
4. **Social Impact Organisations:** can set parameters, such as types of actors allowed to make donations and minimum / maximum donation amounts. NOIZ records all donations and issues receipts for publisher and advertiser tokens sent to social impact organizations in the NOIZ network.

5. **Proof of Stake:** Actors can place stakes for or against another actor or content within the NOIZ ecosystem
6. **Trade and Purchase:** Actors in the NOIZ ecosystem can exchange value by transferring NOIZ tokens and may trade tokens or purchase new tokens.
7. **Public Network:** NOIZ will facilitate and verify peer to peer interactions between consumers and purchasers of their private data from outside the NOIZ ecosystem.
8. **Conventional Marketing:** NOIZ data can be used for conventional digital marketing, such as retargeting on Google or Facebook , Search Engine Marketing and email marketing.

### **9b.ii. Data Monetization**

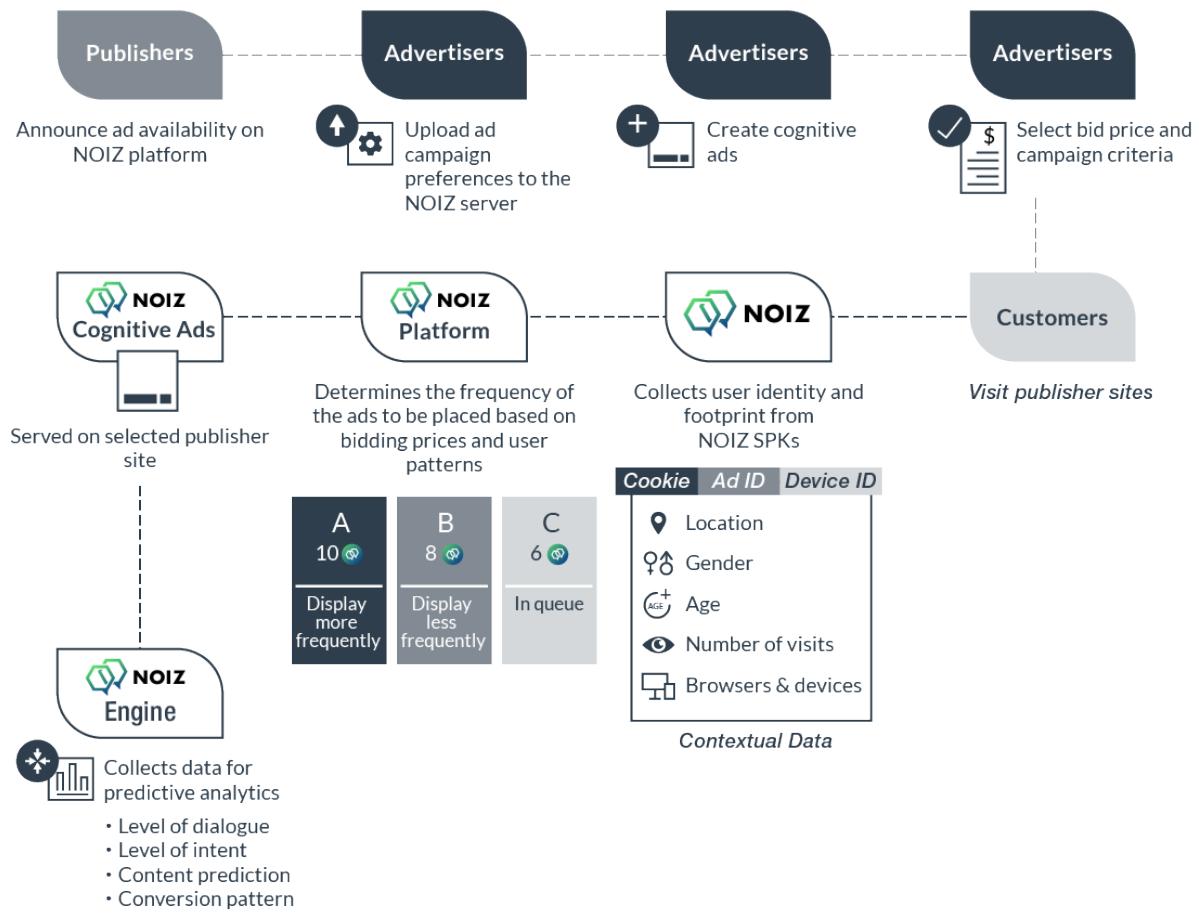
Consumer data is monetized when consumers opt to share their engagement data and personally identifiable information to marketers, publishers and third-parties.

Consumers set their own rules, of which purchasers must abide by should they wish to acquire the consumers' data. In addition to setting minimum price levels, consumers can also request personally identifiable information from the purchaser, like name and location. In this way, consumers can be always aware of who has their data.

Data that is sold through the NOIZ public network can be purchased with cryptocurrencies other than NOIZ tokens.

# 10. NOIZ BUSINESS MODEL

## 10a. NOIZ Ad Network



### 10a.i. Peer-to-Peer Advertising Marketplace

NOIZ uses asset transfers to create a peer-to-peer (P2P) campaign marketplace where marketers, publishers and designers can directly connect with one another on the NOIZ platform and make an agreement over a campaign. Marketers will be able to enlist their campaigns, which publishers can opt to pick up, or marketers can directly approach publishers and apply for the enlisted rates of display ads on the publisher's media network.

### 10a.ii. Peer-to-Peer Consumer Data Marketplace

Marketers, publishers and third-parties can all purchase consumers' shared data, should the consumers choose to sell.

Marketers who place the ads will send automatic requests for access to data each time someone engages. In these situations, consumers choose to provide their information rather than having it extracted.

Other marketers, publishers and third-parties interested in purchasing consumer data will be required to go through the conditions that the consumers have set up, as described in section 9b.i.3.

Consumers will be able to decide what data they wish to share and with whom, and they will be rewarded in NOIZ tokens and other cryptocurrencies for sharing their information.

#### **10a.iii. Programmatic Ad Buying**

In using programmatic ad buying, NOIZ will automate the process of providing marketers with the ideal times, locations, and bid prices in which marketers can best reach their target audiences and significantly improve ROI.

All programmatic ad buying algorithms require user data in order to perform such predictive analyses. Since NOIZ uses its Proof of Engagement system to authenticate user data, digital ad placement through NOIZ will be more effective than on conventional ad exchange networks.

#### **10a.iv. Campaign Targeting Options**

1. **Automatic Targeting (Category Targeting):** This is a type of targeting where a marketer can launch ads by including a set of keywords to target, and NIKOLA automatically finds the appropriate publishers / content / audiences that interact with such kinds of ads.
2. **Manual Targeting (Private Bidding):** In this type of targeting marketers can directly approach publishers and offer them an advertising contract via the NOIZ platform. If publishers accept, the ad goes on their website.
3. **Audience targeting:** Marketers can search in the NOIZ blockchain and select consumers based upon their past interactions with other marketers and data sharing preferences stored on the NOIZ platform, sending the creatives directly into such audience members' NOIZ wallets.

### **10b. NOIZ Wallet**

Each new actor in the NOIZ platform gets a NOIZ NEM account and wallet, or they can register using any NEM compatible wallet which also identifies them uniquely in the in the NOIZ ecosystem. The wallet ID is how actors (marketers , publishers, consumers, and social impact organizations) will be recognized and tracked. While all the NOIZ tokens can flow freely, only registered NOIZ participants wallets will be able to conduct transactions (i.e. creating new AI-powered marketing campaigns) on the NOIZ network. This allows NOIZ to verify actors participating in the ecosystem.

Any person can play multiple roles in the NOIZ ecosystem. marketers can use their wallet with NOIZ tokens to login to the dashboard and create new advertisements or data collection campaigns. Publishers can use the dashboard to accept advertising requests or invite marketers to their publishing platform.

Consumers can use the wallet to login and accept data requests from marketers and publishers in exchange for tokens and to vote for or against marketers, publishers and social impact organizations.

Here are some of the features each party can control through their wallets:

Marketers	Publishers	Consumers	Social Impact Groups
Amount of NOIZ Tokens in their wallet			
Post Ads on DSP	Bid on Ads on SSP	Private Data Permission Setting	Showcase Activities
Completed Transactions			
Setup Social Polling & Survey Campaigns	Setup Customer Retention & Loyalty Program	Special Offer Redemption	Follow-up Progress Reports
Setup Airdrop Rewards		Consensus Board for Casting Votes	Marketing Campaign Setup
Records of Donations to Social Impact Projects via Redemptions, etc.			
NIKOLA Engagement Report	Reports on Loyalty Programs		
Access to Consumer Provided Data			

Performance Visibility	Others
Consensus Voting Results	Airdrop Announcements
Real-Time NOIZ Ad Performance	Beneficiary Social Impact Group of the Month
Spam Score on Ads & Publisher Content	Reports on Banned Ads and Publications
	Pending Consensus

## 10c. Revenue Model

By eliminating fraud traffic, NOIZ will enable both publishers and marketers to maximize their ROI. With the marketers' budgets being spent more effectively, a greater revenue share will be available to distribute between participants in the network. NOIZ will also receive a fee from marketers for each NOIZ campaign that is created.

NOIZ Revenue Streams:

- Production of NOIZ marketing campaigns
- Creating new campaign integrations for clients
- Setting up 3rd-party accounts for clients
- Transaction fees: withdrawal, data purchase, redemption
- Monthly subscription fee (to be implemented in later stage of NOIZ platform)

# 11. PROCESS & PLAN

## 11a. Roadmap

### 2019

(Q1)

AI-powered marketing campaigns live. Interactive ads & web/landing pages with chat and anti-spam features enabled. Running trials with select clients.

(Q2)

NOIZ releases advertiser dashboard and SDK. The SDK will allow marketers to connect third party apps/platforms to the NOIZ marketing campaigns. This includes messaging apps, payment gateways and promotional services. The Release version will also have the ability to store consumers conversational data on a blockchain protocol.

(Q3)

The Beta version of NOIZ will include the token incentive and donation functions. The Beta version will also have NOIZ profiles, allowing consumers to create a profile where they tell brands their interests and what they want from the start, rather than after a brand makes inaccurate assumptions. Anti-fraud protection level 1 (analyzing time stamps of user interactions with NOIZ ads).

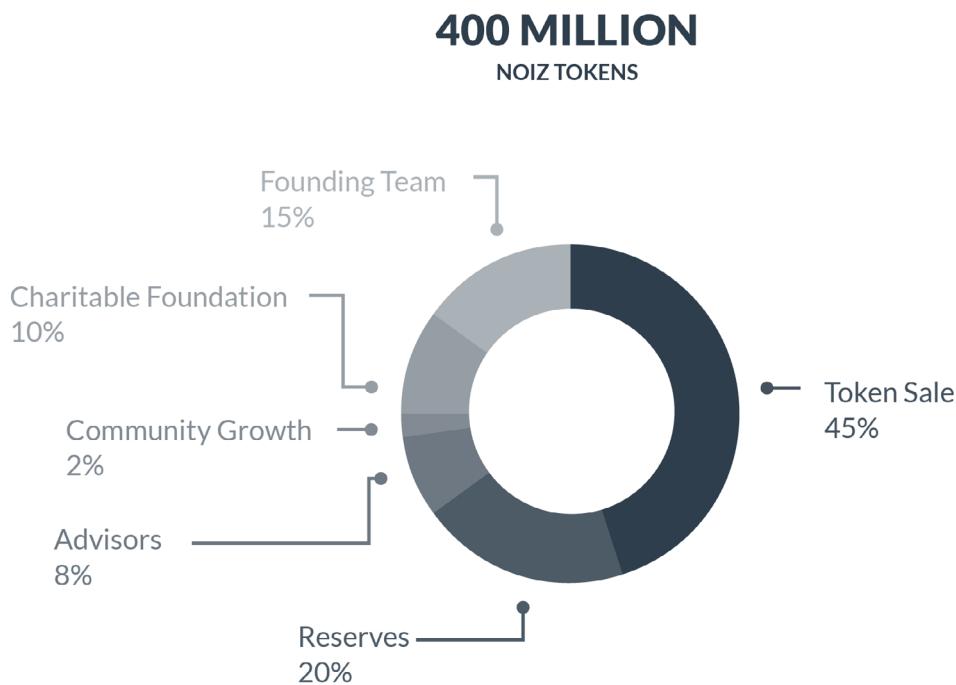
(Q4)

NOIZ users will be able to verify their data for higher rewards and a more personalized experience. Brands will be able to begin using NOIZ parameters to target and communicate with audience members.

### 2020

(Q1) Cross-chain exchange active. Users will be able to convert NOIZ tokens into other currencies within the NOIZ app/dashboard. Anti-fraud protection level 2 (analyzing mouse movements, keyboard strokes, and clicks) on cognitive ads.

## 11b. Token Allocation



There will be a total of 400 million NOIZ tokens issued. They will be distributed amongst the following six groups: Charitable Foundation, Founding Team, Community Growth, Advisors, Reserves, and Token Sale.

- 180,000,000 (45%) NOIZ tokens will be distributed during the Token Sale
- 80,000,000 (20%) NOIZ tokens will be kept as Reserves
- 8,000,000 (2%) NOIZ will be rewarded to community members through a Community Growth program
- 32,000,000 (8%) NOIZ is set aside for the Advisors
- 40,000,000 (10%) NOIZ is held for Charitable Foundations participating in the platform
- 60,000,000 (15%) NOIZ will be distributed among the Core Team members

# 12. NOIZ TEAM

## CORE TEAM



### ANDY ANN

#### Chief Executive Officer

Andy has 17+ years' experience in digital media. In addition to being a serial entrepreneur and angel investor, he is the Founder and CEO of NDN Group, a digital conglomerate heavily invested in Mobile Advertising Networks, Social Networking, Big Data, Artificial Intelligence and Advertising Technology. Andy has also been actively involved in multiple local and Silicon Valley incubators including Google EYE, 500 Startups, Founders Institution, Entrepreneurs' Organization and KPMG.



### KELVIN CHEUNG

#### Chief Research and Development Officer

Kelvin has 20+ years' experience in system design and software development. He has previously worked with AxePay, FCB Canada and the Canadian Space Agency. Kelvin was also an early adopter of Bitcoin; since then, he has founded a number of cryptocurrency related businesses, most recently launching a cryptocurrency mining box that uses solar energy. Kelvin is currently advising several blockchain based startups.



### NIGEL HUGHES

#### Chief Blockchain Architect

Nigel brings with him 33 years of software development experience. Hughes started as a Software Development Consultant at the German company EFFEM in 1984. After that, he worked for Weniger with clients ranging from Honda McLaren Racing to Aeritalia. He's held a variety of senior developer positions and has also designed various cryptocurrency-based applications.



## DAVID KANG

### Chief Strategy Officer

David has 15+ years' experience in data analytics and market forecasting. He is a Partner of NDN Group, managing the New York and South Korea operations. David is also a General Partner of hedge fund XNInsight and Founder of Laws.com. While participating in a Data Processing program at Stanford University, David fortified his quantitative analytics and market interpretation skills, which expanded his expertise in predictive analytics and provided him with actionable outlooks in both marketing and finance.



## KEITH CHOW

### Chief Operations Officer

Keith has 14+ years' experience in media. He is the Co-founder and COO of Hotmob, the largest hybrid mobile marketplace in the APAC region, and Creator of Alcanzar, a scalable DSP that processes over billions of ad requests with proprietary prediction engines. Keith is also a highly analytical and creative thinker, pioneering over 30 creative ad formats that drive high consumer engagement. Keith is currently sharpening his skills in the big data industry, helping marketers unleash the power of optimized audience targeting.



## CONNOR DOYLE

### Marketing Technologist

Connor has 5 years' experience in digital marketing. He previously worked in-house for several B2B companies and freelanced on several B2C campaigns; he is now managing digital projects for NDN Group.



## BEN FU

### Senior Project Manager

Ben has 4+ years' experience in digital growth. He previously worked for digital marketing agencies and helped multiple start-up focusing on performance & optimization growth, he is now managing NDN growth strategies.



## MICHELLE YAU

### Public Relations Manager

Michelle has 11 years' experience in marketing. She previously worked at Leo Burnett and Fairton International Group and is now managing NDN Group's marketing strategy.



## WING SIU

### Creative & UX/UI Designer

Wing has 5+ years' experience in digital design. She currently works for New Digital Noise, where she has worked on projects for Strongbow, JollyShandy, Fujifilms, Tempo and China Mobile HK.

# ADVISORS



## HERBIE FU

### Partner & Co-founder, 8 Decimal Capital

Herbie's experience is mostly in venture capitalism, specifically for cross-border new tech concepts. Before co-founding 8 Decimal Capital, he previously worked at DCM Capital, Petrel Capital, and McKinsey Co. Herbie is now a combination of advisor, investor and strategic partner for over 10 blockchain related projects, including Coinsuper, Ubanx, TrustToken, Coinplug, Bibox and Polymath. He is also the Asia Representative for Cryptic Labs, a research accelerator specializing in cryptography. Herbie leverages his tech and venture capitalism expertise to provide the necessary future sight that investors desire when looking at new tech projects.



## HELENE LI

### Top 10 Influencer on Fintech & Impact

Helene Li has 30+ years experience in marketing. She has previously been Head of Marketing for APAC at both JP Morgan Chase Private Bank and Swiss wealth management firm Lombard Odier. In both capacities, she was instrumental in setting up Family Office and Philanthropy related forums across Asia Pacific.



## STEPHEN S. Y. WONG

### Chief Executive Officer, Asia Miles

Stephen has 20+ years' experience in airline business management. He has been the CEO of Asia Miles since 2011 and before that, he was a Vice President of Sales for Cathay Pacific. He is also the Founder and Lead Curator of Design Thinking In Action (DTIA) and a Sloan Fellow of the Stanford Graduate School of Business.



## DAVID KIM

### CEO & Co-founder, Blue Block

David joins the team with 13+ years experience in M&A Advisory and management consulting covering blockchain and emerging technologies with PwC and Deloitte. He also serves today as a Venture Partner with Mindworks Ventures, a traditional VC out of Hong Kong and early seed investors of unicorns like Lalamove. While at PwC, he helped build the ICO advisory and FinTech/RegTech practice in 2017.



## KEDA CHE

### Founder, Universal Labs

Keda has years of experience in software development, cryptography and blockchain technology. He was a member of the Blockchain Research Lab, cosponsored by Harvard University, Citi and NASDAQ; he has since provided blockchain consulting services to Alibaba and Baidu.



## ALAN RUTHERFORD

### Global Chairman of Media, Ebiquity

Alan has 30+ years' experience in media. He was previously the Global CEO of DIGITAS, Global Head of Media Services for Unilever and a founder of 'the Network, Ogilvy's media arm and forerunner to WPP's Mindshare.



## JONATHAN LEE

### Chief Corporate Officer, Yello Digital Marketing Group (YDM)

Jonathan leads corporate development and M&A/investments for YDM, the number one digital marketing & ad technology group in Korea. He is a listed Advisor to multiple ICO projects, such as Six Networks, XCHNG, iCash, and Hara. Prior to joining YDM, Jonathan was the Business Development Director for WPP Korea. Jonathan started out his career in the financial industry at Salomon Smith Barney/Citigroup prior to joining WPP.



## ALVIN FOO

### Managing Director, IPG Reprise Media China

Alvin has 20+ years' experience as a senior internet and mobile media executive and entrepreneur in the Asia Pacific. He has previously worked as the Head of Mobility & Innovation at Omnicom Media Group and the Head of Mobile for Google China.



## NICK CHAN MH

### Partner, Squire Patton Boggs

Nick has 20+ years' experience in technology law and has been named in AsiaLaw Leading Lawyers since 2004. He is most frequently involved in the improvement and implementation policies for the creation, protection, commercialization and transfer of impactful knowledge.

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## Contact Information

[promotions@noizchain.com](mailto:promotions@noizchain.com)

[www.noizchain.com](http://www.noizchain.com)