



Pawtocol

Whitepaper

The World's Most Advanced Pet Community

Abstract

Blockchain technology has introduced the world to the benefits of decentralization and is providing the infrastructure to quickly build the new economies of tomorrow. More and more industries are being rebuilt with a decentralized based ecosystem model, and the pet care industry is no different. We expect a future where every pet is identifiable on a blockchain and where owners are able to access the ‘wisdom of the crowd’ from the data points available across the broader pet care industry.

Pawtocol LLC, a Delaware limited liability company (“Pawtocol”, “we”, “our”, “us”) aims to take the pet care industry into the blockchain age by developing a platform with a pet-focused economy and ecosystem. This paper outlines our vision and philosophy behind Pawtocol and why we are taking this project to market, as well as our progress to date and why we are the right team to execute.

Pawtocol was inspired by a shared vision to build a global community of pet parents, service providers, and manufacturers who are unified towards improving pet care. We have a mission to help pets around the world live longer and healthier lives by empowering pet caretakers with cutting edge technology and data.

Introduction

1.1 Mission

Pawtocol is building a multi-functional platform that can seamlessly integrate into the average pet parent's daily life, to make crucial pet care decisions easier, reduce the lifetime cost of pet ownership, and ultimately improve the lives of pets everywhere.

1.2 Vision

The Pawtocol vision is to introduce the new era of decentralization and transparency to the pet industry.

Network participants will be incentivized to collect and feed data to Pawtocol's AI - which in turn will make AI-enhanced diet and care recommendations for crowd-verified food products, toys, and service providers. Pawtocol will naturally reward quality businesses by allowing their products and services to appear in targeted in-app recommendations and open doors to a vast audience of new potential customers.

The market for electronic pet wearable devices is on the rise and in need of a unified ecosystem for a pet owner to connect their devices and stay updated on their pet's well-being through a single interface. Pet technology will be given an interconnected platform where various pet tech wearables and IoT devices can connect, share their data, and interact via the Pawtocol API.

Across many industries, the platform business model has become a crucial building block for waves of technological innovations. The most advanced digital products and services that come to market today are based on platform business models; a model that most business owners have begun to explore and intend to make core to their growth strategies. Pawtocol uses a platform business model--and is the first pet technology platform to incorporate AI learning along with a blockchain-based incentivization structure. [1]

About

2.1 Problem / Solution

POOR PET HEALTH

Pets can't tell us when something is wrong, causing a wide range of preventable diseases that often stem from poor diet and lack of exercise that could be easily preventable if pet owners had the right information. [2]

ARTIFICIAL INTELLIGENCE

Pawtocol's pet wellness-focused AI works to identify the causes of poor pet health and suggest alternative routes of care and nutrition before the problem becomes out of hand.

CORPORATE GIANTS MONOPOLIZING

Mars and Nestle Purina account for 93% of mid-priced dog and cat food sales in North America. The massive marketing budget of these corporate giants makes it difficult for trustworthy small businesses to reach their target customers as the marketing channels are flooded by the giants. [3]

CROWD VERIFICATION

Pawtocol will level the playing field for small, pet health-focused businesses by giving the community the power to prove quality through crowd-verification. Crowd-verified businesses will enjoy an elevated status in the eyes of consumers on the platform.

MISSING / UNSAFE PETS

Pets go missing all the time, and there is still no perfect solution. The current best answer to missing dogs are implanted chips or analog dog tags, but these are either expensive, ineffective or both. As a result, many pet owners struggle to find their pets if they run away or are lost. [4]

DIGITAL DOG TAG

The Digital Dog Tag helps lost puppies find their way home. Not only will it update information in real-time, but it will also post bounties and rewards for lost pets. Additionally, the use of the Digital Dog Tag will qualify pets for other futuristic aspects of the Pawtocol network that would use IDs to organize information.

DECEPTIVE MARKETING / LABELLING

Deceptive marketing and labeling in the pet food industry have led to numerous legal battles including class action lawsuits and false advertising claims.[\[5\]](#)

EMPOWERED USERS

Pawtocol will force companies to market and label their products truthfully by placing powerful analytic tools in the hands of consumers. The platform will also inform pet owners if the company they purchase from is mislabeled or misrepresented.

FRAGMENTED PET DATA

The vast amount of data and information generated throughout the pet industry is not used effectively by companies to make business decisions. There is no common data layer or platform that connects industry participants.

THE PLATFORM

Pawtocol will create a normalized pet data language, making all collected data compatible with existing data sets. This will allow pet data to be interpreted more accurately by both our AI and researchers.

2.2 Value Proposition

Pawtocol provides value to platform participants in a variety of different ways, using a wide range of tools.

THE PERFECT MATCH

Pawtocol connects responsible pet parents with trusted service and product providers through unbiased in-app product and service suggestions, which reduces the cost of goods sold for the vendor while increasing the value and trust for the consumer.

A TRUSTY COMPANION

The preventative care AI and interconnected pet tech devices work together to optimize a pet's diet and daily exercise, preventing the need for unexpected vet visits and reducing the overall cost of pet parenting.

FOR THE UNDERDOGS

Crowd verification increases the reach of smaller, high-quality businesses that cannot compete with corporate marketing budgets, disrupting the pet marketing sector. This means a smaller brand can correlate consumption with verified health outcomes and increase their revenue and brand awareness.

WORTH ITS WEIGHT

The UPI (Universal Pet Income) Token establishes a currency with tradable value to power the pet care ecosystem. UPI will be used in exchange for pet-related products, services, and discounts throughout the pet industry.

The token may be earned through participation and is usable for transactions being executed within the application. These mechanics make for a smoother onboarding process that shields the end-user from blockchain complexity.

Local vets and service providers will have a more traditional path to accruing reputation. As results (pet wellness outcomes) accumulate via crowd-sourced data collection, veterinarians will have unbiased information to back their performance record. Additionally, businesses will gain exposure from positive reviews made by users who transacted with the business through the Pawtocol platform.

This is not a checkmark that verifies membership, but a badge that represents statistically proven quality.

Data Marketplace

Pawtocol will create a first-of-its-kind data marketplace, facilitating the exchange of pet data.

Data is a valuable modern-day commodity. With the influx of pet wearable devices, pet owners are collecting more detailed data than ever before. Collected in isolation, this data has little value. However, when detailed data is aggregated and given insight with analytics, its value increases exponentially.

Pawtocol will provide researchers, marketers, manufacturers, and veterinarians with an open-source platform to request, purchase, organize, and analyze the detailed pet data captured across the platform. Pet parents/owners on the platform will decide who their data is shared with and will always retain ownership of the data. This means parents/owners will be able to monetize their own data, bringing balance to the data economy in the pet industry.

Product & Service Marketplace

Pawtocol will create a hybrid e-commerce marketplace where pet parents, vendors and service providers can freely buy and sell pet products and services through the app. All goods and services sold will be in a constant state of quality assurance conducted by users on the platform.

The underlying currency facilitating trade between all parties for both the product and data marketplaces will be UPI Tokens. UPI tokens will smooth out the onboarding process and enable participants to transact instantly, safely, easily, and securely.

2.4 Key Components & Supporting Technologies

Blockchain and Smart Contracts

Pawtocol will use blockchain technology to empower its users to own and monetize their pet's data while protecting the privacy and the best interests of all participants on the platform.

Token

Pawtocol's digital currency will incentivize users to upload their pet's data without any adverse impact to the platform's margins or liabilities.

Artificial Intelligence

Pawtocol's AI will make data-driven pet care recommendations by performing a personalized assessment drawing from personal data, existing databases, and community supplied correlations. Unlike a monolithic centralized AI where the user's data is part of a massive dataset, each user has their own personal AI that serves them while retaining their personal information.

IoT Devices

Many third-party devices will feed data into Pawtocol's AI, data owners will receive UPI tokens in compensation just like any other data source. There are hundreds of pet-specific IoT devices available already from GPS collars that measure heart rate, to weight-sensing food bowls. These devices will encourage non-technical people to join the Pawtocol platform making it simple to monetize their data.

Zero-Knowledge Proofs

ZKP will enable Pawtocol's users to keep custody of their growing repository of data points and to maintain ultimate control over the information they wish to voluntarily disclose.

Distributed Encrypted Storage

DES spreads user data across a series of nodes in the network while ensuring that only the file's owner can access and see their data.

2.5 Privacy & Security

Centralized databases have proven to be far too easily hacked, abused, or tampered with. As a result, consumers have become increasingly sensitive about their data. Pawtocol decentralizes and distributes user data, adding multiple layers of cryptography to make sure that user data can only be viewed by the users themselves.

Breaking tradition

The business model of traditional free platforms such as Facebook and Google relies almost entirely on the monetization of user data. This model erodes user privacy, often leads to advertising forced upon the users and fails to compensate users for their role in the construction of valuable datasets.

Pawtocol inverts tradition. It protects privacy, provides fine-grained control of information exchanges and facilitates monetization of data sharing.

User Custody of Data

With Pawtocol, users decide when and with whom their data is shared and most importantly, they reap the benefits of sharing it. Advertisers, researchers, and other third parties can offer tokens in exchange for limited insight into user data points.

2.6 Team

Pawtocol humbly recognizes that scaling to become a successful digital platform and achieve their vision will require additional sets of expertise and personnel. Naturally, successful companies in the digital space do not limit themselves to one strategy. They use a combination of building in-house, acquiring or partnering to make rapid progress, adapting to the situations they face.

Pawtocol has taken a balanced approach to grow a team while building alliances. Pawtocol possesses a strong, evolving, multi-disciplinary team with breadth of experience.



Karim Quazzani | CEO



Evan Berger | General Counsel



Rob Hitchens | CTO



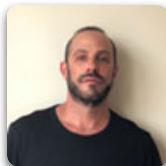
Jason Hetherington | Communications and User Experience



Dr. Barry Goldberg | Veterinary Advisor



Dr. Mileydi Perez | Veterinary Advisor



Michael Henry | Chief Marketing Officer



Jeremy Ward | Data Scientist and Machine Learning Advisor



Brandon Stewart | Outbound Marketing



Nathan Glass | Biomedical Advisor

Architecture

Pawtocol is a layered solution to a number of challenges in the pet care industry. Core components of Pawtocol's architecture are the pet identification system, the generalized document storage system and the data marketplace. Pawtocol uses a combination of blockchain smart contracts, distributed storage and peer-to-peer communications to organize and normalize collected information and facilitate personalized AI and data monetization.

3.1 The Bottom Layer

The tech world faces many challenges regarding how to handle general data protection regulation (GDPR), the "right to be forgotten", and the possession/retention of data. Pawtocol aims to attack these problems at the source. In our view, most of these challenges are resolved with a new approach to data architecture that doesn't presume that all data must first be centrally stored and then carefully managed. The Pawtocol approach rests on user custody of their own data and information sharing on a need-to-know basis. Users are given control and insight into sharing proposals, tools to anonymize shared information, and currency in exchange for cooperation.

Pawtocol's Solution:

The bottom layer of Pawtocol's architecture is about addressing these concerns with a censorship-resistant, privacy-focused solution. Users must be able to reap the benefits of the system without surrendering data to the system. Pawtocol's bottom layer is a platform-agnostic, privacy-first, general-purpose data storage layer that uses Ethereum and distributed storage. This layer provides sovereign ownership of data, suitable for a period of increasing concern about data privacy.

The next challenge is that authentication in all forms is at cross purposes with user privacy. Distinguishing between users is important for practical reasons but this does not imply that the persons behind the IDs necessarily need to be revealed. Similarly, confirming the authenticity of data reports is vital if the data is to be trusted. But, identifying an accountable individual is not the way to do so. Rather, it is one way to do it, and not the best we can do.

Pawtocol reframes data authentication by proving that data was collected by specified methods (e.g. type of device), by members with certain properties (e.g. must be a verified veterinarian), and is about pets with certain properties (e.g. must be a poodle of a certain age). The Pawtocol proving grammar expresses such requirements. Pawtocol proofs establish those facts without revealing which user, which device or which pet.

A third challenge relates to well-known edge cases. With so much data under the users' control, it's important that the users themselves are protected from data loss that could result if the files were in their physical possession. And, with everything relying on their digital identities it's important to have solutions for key recovery and probate. Pawtocol solves for data persistence using reliable distributed storage, and for key recovery in a way that greatly simplifies Ethereum user onboarding and using the system with multiple devices such as a smartphone and a laptop.

The benefit to users is custody of their own information and fine-grained control of information disclosure to others even while they enjoy the features and conveniences of applications. Pawtocol's solution addresses the rising demand for strong data privacy in applications of all kinds.

3.2 Record Keeping

The next layer up in the architecture addresses issues regarding what the (human) medical industry terms “patient data records.” Medical records and innovation have been a hotbed of innovation recently, however, this is also a very competitive space with complex ethical concerns and regulatory red tape--when it comes to humans. Lab reports and veterinary records aren't easily transported from place to place. It can be very hard to track down information when you arrive at a veterinary clinic for the first time. Even though it is your pet and history, this information isn't immediately accessible. Immediate access to pertinent information can mean life or death.

Working with pets is a lower-stakes demonstration of blockchain in healthcare, i.e. most ethical concerns and regulatory red tape are absent. We envision this not only as a revolutionary pet healthcare records solution but also as a non-controversial demonstration of the potential of decentralized medical records management. If successful, grassroots support could lead to cautious experimentation in the realm of human medical records.

With medical records, lab results and life data in Pawtocol, improved pet care will be possible at any veterinarian's office. This will create an opportunity for veterinarians and animal hospitals to gain a competitive advantage.

3.3 Data Marketplace

It is proper for each pet parent to maintain their own records of all information gathered about the life of their pet. Pawtocol is a repository for this information. It is a decentralized, organized repository of records with provenance. Pawtocol inverts the idea of monolithic centralized databases and creates a network composed of millions of smaller databases. Zero-knowledge proofs and selective disclosure enable communication (trading information) while safeguarding privacy. The economic ramifications are massive.

It is well-known that data is valuable, in the aggregate. Pawtocol proposes that individual data must, therefore, have economic value. Centralized data collection systems generally fail to recognize and account for the value of individual data points. The result is the formation of massive companies built on processes that harvest vast amounts of data, without paying for it fairly, then trading it for considerable value. The distortion of efficient market pricing leads to concerns about user privacy as aggregators effectively resell information without the informed consent of the users.

There are legitimate reasons to create large datasets with informed consent. Scientific studies and marketing studies need data. Such studies are costly and rely on information provenance. Generally, things that are worth doing have economic value. Pawtocol organizes verifiable data under user control and enables trad. Pawtocol creates a new market of facts.

Pawtocol is a price-discovery marketplace for high-quality and provable information. Users will be offered UPI to provide specific information, not the whole picture. For example, consider a study related to a certain breed of pet eating a certain type of food. The buyer would specify qualifying pets, qualifying products, the well-being data requested (and qualifying methods of collection), and the bid for qualified responses. The user would take the offer by providing proof-of-purchase of qualifying products, proof of the pet's breed, and well-being metrics that meet the criteria for the study. All of this would be anonymous, transparent, and done with the pet owner's consent.

3.4 Phased Build-Out

At this point, Pawtocol has solved the biggest problems with data protection and identification and has proven it to be a worthwhile project. The smart contracts for most basic functions are in place, and issues with storage and zero-knowledge proofs have been resolved. This means applications can be plugged in on top of the Pawtocol architecture that has been created.

The next step is developing the user experience (UX) that would enable any user to be comfortable using the platform. Once Pawtocol is launched, the development of the UX will begin, likely taking 4-6 months.

By having better onboarding than any other system in operation and knowing our customers better, the Pawtocol offering has the potential to become the leader in the pet industry.

Pawtocol eventually intends to become a decentralized app store for anything pet-related. This will encourage others to come and build on top of their layers. The existing architecture will attract other developers because it will quickly help people get to the market.

The first step in the build-out is achieving network effects and a non-trivial user base so Pawtocol can attract vendors, developers, and other participants to the network.

3.5 Technology Stack

Pawtocol's technology stack will consist of the Ethereum blockchain, IPFS, and variety of mobile front end applications.

The platform is being built out on the Ethereum blockchain because it is considered to be the most decentralized, established, and successful smart contract platform. Launched in 2015, Ethereum introduced the concept of a smart contract to the blockchain world and opened up the capability to create Decentralized Applications (DAPPs). Ethereum has gained popularity as an ICO platform due to the simplicity of ERC20 token generations.

The Pawtocol design team has devoted considerable effort to resolving transaction volume scaling and the user experience. The system is designed to minimize the load on the Ethereum network and to minimize the cognitive load on end-users. We use Ethereum to prove, minimalistically, the authenticity of claims exchanged between peers. We use UPI to abstract away implementation details such as paying for gas.

IPFS, or InterPlanetary File System, is a protocol and network that delivers a content-addressable, peer-to-peer method of storing and sharing hypermedia in a distributed file system.

Similar to a torrent, this system allows users to not only receive but also host content. IPFS is built around a decentralized system of user-operators who hold a portion of the overall data, creating a resilient system of file storage and sharing.

Pets are elevated to the level of full participants in the system, with parents (or guardians) who can act on behalf of them. Pets themselves are users, identifiable by traits such as the Blockchain Pet Tag. Each pet identity is a logical container for data about themselves, while the pet owners are signing authorities for the pets. Certain public information is disclosed publicly on the pet tag, however, most data is private. The public identifiers on the tag help others to identify the pet. This is similar to medic alerts bracelets for humans and is an improvement on the RFID implants currently used on pets.

The Blockchain Pet Tag will familiarize users with the different treatment of public and private information in the system. The process is intuitive but contrary to traditional privacy controls, largely because it is clear and serves the users first.

In the future, Pawtocol expects to use batteryless Bluetooth pet tags. These obtain enough electricity from the ambient RF spectrum and operate without requiring batteries or recharging.

Token

4.1 Token Model

The economic system that defines the use of a token forms the tokenomics of a platform. At its core, a UPI (Universal Pet Income) token is about defining a unit of measure for price signals in the marketplace.

4.2 Token Ecosystem

The Pawtocol platform will target and cater to four different types of users, as described below:

Pet Parents

Owners of pets who form the core of the user base, collect and hold the majority of the data in the system and both create and consume the utility of the network.

Vendors

Parties selling goods and services to pet parents.

Supply Chain Participants

People & businesses selling goods and services to other companies.

Data Economy Participants

People who want to access/use data and information from other users including advertisers, researchers, and pet health professionals.

4.3 Token Details

The UPI token is listed on Probit and Exmarkets it's currently paired with USDT in both exchanges.

Target Amount Offered	1 billion
Currency Accepted	BTC, ETH, UNI, USDT

4.4 Exchange Listings Strategy

Until now, Pawtocol has been funded by its founding team. In order to assure future growth and facilitate a successful launch, Pawtocol has engaged a respected international blockchain marketing and financial group to launch global campaigns and get listed in several exchanges. The intention is to raise sufficient awareness to take the platform to market.

The plan is to list on a top exchange to widely distribute tokens, obtain liquidity, drive awareness. We intend to also list on other exchanges following the initial exchange listing in order to be able to have global trading volume, which additionally catalyzes exposure to new markets.

4.5 Launch Promotion Token Budget

Pawtocol's token supply consists of 1 billion tokens. We are utilizing 10% of that amount or 100 million UPI tokens towards rapidly building a user base at launch. The tokens will be split 50/50 between Blockchain Pet Tag and other IoT embedded rewards and affiliate and influencer compensation for link shares that result in a successful registration.

Launch Promotion Budget

Pet tag and other IoT embedded rewards	50%
Affiliate and Influencer compensation	50%
Total	100%

Pet tag and other IoT embedded rewards 50 Million tokens will be embedded in Pawtocol's Blockchain Pet Tags and other IoT devices as rewards for users who register a pet.

Affiliate and Influencer compensation The other 50 million tokens from the budget will be used to compensate affiliates and influencers whose direct link shares result in the paid registration of a Pawtocol Blockchain Pet Tag. We have prepared for the very unlikely event that 100% of registrations will be attributed to affiliates and influencers. Any left over tokens from this will be sent back into the reserve for future marketing purposes. We have set up a link tracking affiliate accounting system which will monitor attribution as we move through launch marketing operations.

4.6 Reserve

42% of the tokens will be held in the Pawtocol Reserve and used to develop the project and community as follows.

Operations reserve	10%
Team/Advisors	20%
Token launch (see 4.5)	10%
Bounties/In-app rewards	3%
Marketing/Community development	4%
Network Growth	10%
Funding rounds	43%
Total	100%

Operations reserve: 10% of tokens will be kept in an operating reserve that will act as the Pawtocol treasury and will be deployed in a way that will most effectively scale the Pawtocol ecosystem and ensure wide distribution of the UPI token. We will release our treasury management plans following the public launch of the UPI token.

Team & Advisors: 20% of the tokens will be released to founders and early team members and advisers over a 3-year period to ensure that the founders and team stay aligned with the long term success of the project and that selling pressure is mitigated.

Token Launch: See section 4.5

Bounties/In-App rewards: 3% of the tokens will be given to community members who participate in bounties and who join the Pawtocol ambassador program to grow the network in their region. We will be creating a granular bounty model that considers and rewards all positive behavior in the Pawtocol ecosystem including hosting events, translating materials, sharing content, posting research, making bets, inviting friends, among others.

Marketing & Community development: 4% of the tokens will be reserved for marketing and community development efforts such as hosting tournaments, experiential marketing campaigns, and VIP experiences. This is an important marketing reserve to host campaigns that are large enough in scale with significant enough rewards to create viral events that onboard millions of users.

Network Growth 10% of the UPI tokens are allocated towards but not limited to UPI staking pools, Uniswap Liquidity pools, new exchange listings, and initial liquidity for the new exchanges. Any UPI tokens that are to be moved for network growth will require a community announcement prior to execution.

Funding rounds 53% of tokens are allocated to funding rounds and possible partnerships. Large tranches will be required to participate to the same 3-year lock-in program which restricts the sale of tokens by founders and advisors.

4.7 Use of Proceeds

The majority of the capital raised will go to developing, marketing, operating, administration and growing the Pawtocol network and ecosystem as the value of the UPI token will be directly tied to the growth of the Pawtocol ecosystem.

4.8 Token Utility

UPI (universal Pet Income) is the token used for pricing goods, services, rewards, and trades within the system. We intend to use UPI to create a more intuitive user experience than is the norm for Ethereum-based applications. In particular, UPI will be used to pay for transactions that require someone to pay for gas, Ethereum's pricing unit for computations.

The improved user experience is intended to abstract away implementation complexity so users can focus on enjoying the application. A transaction fee will be subtracted from the value of each transaction. A portion of that transaction fee will accrue to Pawtocol to support R&D and community development. A portion of the transaction fee will be burned, reducing the circulating supply of UPI over time.

The current plan is based on:

- **1.5%** transaction fee
- **25%** of the transaction fee burned
- **75%** of the transaction accrues to Pawtocol
- Burn stops when **50% of the initial supply (500 million tokens) is destroyed**

Operations

5.1 Target Market

Our ability to create an interactive platform, develop a product and services marketplace as well as a pet data marketplace depends on significant user engagement from a diverse user base.

To drive early platform adoption, Pawtocol will focus its efforts on attracting two cohorts: **(1)** Tech-savvy millennials, comfortable with integrating technology into their everyday lives **(2)** Premium pet caretakers, or those deeply passionate, who go the extra mile in caring for their pets diet and exercise (e.g. those who purchase raw food).

VALUE FOR CUSTOMER SEGMENTS

Pet Parents

- Gain access to crowd-verified pet products, information, and trustworthy services
- Ensure they are making the right decisions based on proven facts
- Lower long term cost of pet ownership
- Targeted product suggestions free from bias, focused on their pet's health

Vendors, Manufacturers, and Retailers

- Access a new global customer base
- Reduce customer acquisition cost, passing the savings to customers
- Verify product benefits, statistically relevant, and provable
- Increase brand awareness

Veterinarians

- Acquire a new channel of customer acquisition
- Add value via a normalized, high-quality, organized recordkeeping platform
- Improve customer retention
- Build crowd-verified reputation

Service Providers

- Prove pets have been properly cared for with IoT and normalized information exchange
- Affordable local advertising compared to major social platforms

Researchers

- Obtain trustworthy, unique, and unbiased facts for research studies
- Call on Pawtocol network participants for information
- Specify actions pet owners need to take to qualify

5.2 Market Assessment

The pet industry is experiencing tremendous growth, with the pet technology sector attracting the most attention from investors. Between 2012 and 2016, venture capitalists invested nearly \$500 million in pet technology alone.^[6] Well over half of the households in the US (~85M) own a pet.^[7] Americans spend approximately \$86 billion on pets every year.^[8] Grand View Research estimates the global pet care market will be worth \$202.6 billion by 2025 with a CAGR of 4.9%.^[9]

Many parties (pet parents, vets, etc.) are demanding trustworthy food and care providers are brought to the forefront.^[10] The industry is heading towards a more truthful and transparent future - one where pet owners are more aware, informed and invested in their pet's lives.

Humanization/Premiumization of Pets

More health-conscious pet owners have sparked growth in the premium food and products category often referred to as premiumization.^[11]

Pet owners are seeking out higher-quality organic and natural foods, high-end accessories, and better care, all in the best interest of their pets.^[12] As the demand for healthy pet products rises, so too will the demand for transparency around those products.^[13]

New Generation of Pet Owners on the Block

Tech-savvy millennials make up more than half of small animal ownership and drive pet industry sales. Millennials use technology to optimize their lives, including pet ownership.

The Pet Owner Paths research study, sponsored by Merck, found that millennials chose 24/7 chat or texting availability as one of their top options when asked what they most valued as a veterinary service offering.^[14]

Pet Wearables & The Internet of Pets

Nearly half of all dog owners have an electronic tracking device for their pet, up from last year's results of 36%.^[15] These devices track pet health activity, GPS location, and other health metrics.

Grandview Research estimated the global pet wearable market size was at USD 1.4 billion in 2018.^[15] The market for the medical diagnosis & treatment application devices is on the rise as well, expected to grow at a CAGR of 16.7% from 2014-2025.^[15]

Pet Food Recalls

In March 2007, the largest recall in the pet food industry occurred but not before it caused the deaths of hundreds of cats and dogs.^[16] Today is no different; globally in 2016, more than 80% of new pet food products had a health claim.^[17]

Platform Economies

Most groundbreaking digital products and services that come to the market today are based on platform business models. Pawtocol plans to bring this trend to the pet industry, having seen similar interconnected platforms emerge in various industries. All the required technologies exist today, Pawtocol will apply existing technologies and create a platform to allow all users to communicate and trade both data and product.

5.3 Competitive Analysis

COMPETITIVE ASSESSMENT

To date, there is no platform focused on building something similar to Pawtocol. There are a handful of centralized and platform-based projects targeting specific needs in the pet ecosystem, e.g. medical records, animal recovery, GPS wearables, etc.

COMPETITIVE ADVANTAGE

Pawtocol is building an ecosystem, the first truly multi-faceted protocol for pets. Rather than looking at niche-specific platforms as competitors, Pawtocol considers them to be potential partners who will provide key insights to users on the platform. The Blockchain Pet Tag will put pet owners at the forefront of Pawtocol's ecosystem but we will encourage participants to connect additional IoT devices, to supplement data collection efforts.

FIRST-MOVER ADVANTAGE

As with any new market, the first entrant generally holds the advantage. Pawtocol will leverage this favorable position by building tech, improving existing assets, and growing its already talented multi-disciplinary team to create a barrier preventing would-be competitors from entering the market with similar goals.

POTENTIAL PARTNERS

As noted Pawtocol does not seek to compete with tech and pet health platforms in the space, but rather to become the key connective tissue within the space (something that is yet to emerge) and allow these various other companies to integrate directly with the Pawtocol platform. Pawtocol will target companies, tech, and services that are a good fit for the platform such as EZ Vet Clinics, WAG Walking, and subscription services such as Bark Box, but will keep the door open for new and existing entities looking to access the Pawtocol user base, and add to the depth of data collected on the platform.

5.4 Opportunity Size & Revenue Model

A TECH TREND

Many exciting opportunities exist for Pawtocol both in pet tech and connecting the currently fragmented pet industry and its data. With proper timing and marketing Pawtocol seeks to carve out a meaningful share of the 'growing pet industry pie'.

According to Grand View Research, 69% of millennials are likely to use technology to keep track of their pets.[8] Mobile device apps such as Wag Walking, who raised \$300 million in funding,[18] DogVacay who raised \$50 million,[19] and Rover who raised \$155 million,[20] continue to flood into the market to fill the demand. What is more impressive is that these applications continue to create new markets, for example, 95% of the users of Wag Walking have never hired a dog walker before.[21] The services industry will experience continued innovation as pet ownership particularly by millennials (now the largest segment of pet owners) continues to grow. [22]

CAPTURE RATE

The initial pet owners to adopt the Pawtocol platform will likely be a combination of Millennials and pet health-focused owners - those who purchase raw food, for example. Millennials are the primary pet-owning demographic (35 percent of pets are owned by Millennials) and according to UBS,[23] they will be worth \$24 Trillion by the year 2027. This generation is a major focus of Pawtocol.[24]

Initially, Pawtocol will focus on dog and cat parents and capturing participants from the larger pet markets (USA, China, Russia, Brazil, Japan, and Canada).

ADDRESSABLE MARKET

Grand View Research projects the global pet care market will reach USD 202.6 billion by 2025 at a growth rate of 4.9% CAGR. Additionally, there are:[8]

- 90 million dogs and 94 million cats in the US
- 62 million dogs and 53 million cats in China
- 15 million dogs and 13 million cats in Russia
- 6 million dogs and 13 million cats in Brazil
- 2 million dogs and 7 million cats in Japan
- 8 million dogs and 9 million cats in Canada

Reducing the initial target market (412 M) to account for:[\[25\]](#)

- 7.9% to account for the global population of those 65 years of age and older
- 19% to account for those under the age of 10 who may not be technologically adept
- 15% of those aged 10-65 to account for those who do not own a smartphone

These adjustments bring Pawtocol's addressable market down to a conservative size of 256 million dogs and cats. Given a functional platform in year 3 Pawtocol anticipates the ability to capture 1% of this addressable market and 3.5% of the addressable market in year 5.

Revenue Streams

Pawtocol will have diverse income streams composed of traditional advertising services, hardware sales, and revolutionary platform-specific revenues.

Onboarding Fee

A fee to help service providers and manufacturing companies adapt their business to the Pawtocol network with benefits such as decreased costs and increased brand awareness.

Data Transaction Fee

Pawtocol will charge a transaction fee (Y) on the price paid by 3rd parties (X) to the data collector for a data set. For example, a research study is looking to collect information on dog or cat ownership practices such as: what breed or type of dog people have, how their dog behaves, reasons for getting a dog and what influences an owner's decision. For example, if a study is willing to pay \$ X dollars per response. In exchange, data collectors receive \$ $(X-Y)$ dollars per data set provided, while Pawtocol retains \$ Y .

Transaction Fee

A modest transaction fee charged on all value exchanged across the network.

Advertising Revenues

Pawtocol will only advertise for crowd verified companies - companies that are providing quality products to market to our customers. The method of advertising is that of a trusted advisor recommending products based on need, rather than interruptive advertising of dubious relevance.

Device Sales

Pawtocol intends to sell branded connected devices starting with the Blockchain Pet Tag. Additional data collection opportunities include diverse tools for collecting monetizable data such as wearables, consumables, and toys. Revenue from these sources will help the Pawtocol project team support an expanding project team and continuous improvement of the platform.

5.5 Opportunity Size & Revenue Model

The Pawtocol team's first priority is building out the platform itself. It would be a waste of resources to invest in attracting members to a platform that is yet to be built. The 4 proposed steps of the strategy are outlined below.

DEVELOPMENT

During development, the marketing team will focus entirely on brand awareness. Pre-app marketing efforts will be mainly guerrilla marketing and word of mouth, establishing Pawtocol's affinity to pet tech and developing a trustworthy image in multiple niche pet communities.

VENDOR ONBOARDING

Once the user base has reached a considerable size, the marketing team will pursue product and service providers. Early business adopters will benefit from being among the first to access our users and potentially claim new lifetime customers with their quality products.

USER ONBOARDING

Once the platform is built to an MVP level, the team will begin paid marketing to pet owners in order to rapidly build an active user base and will utilize the existing partnership with Global Digital Assets to attract the blockchain community. During this initial phase, Pawtocol will build the user base by offering the Blockchain Pet Tag with a free + shipping and onboarding fees plan.

TECH FULFILLMENT

With a user base and an active business community in place, the development of the technological ecosystem will begin. Continued development and improvement to the platform, AI, and API will follow ensuring that user expectations are being not only met, but exceeded.

BLOCKCHAIN PET TAG

Every company requires a core go-to-market plan and a good scalability plan. Pawtocol's go-to-market strategy leverages existing relationships and customer lists within the space.

Karim's past in the pet space, especially at AnimalBacker.com, has given him a deep understanding of the differences in marketing towards the owners of different pet breeds.

As a CPA marketer with a specialty in bringing down acquisition costs for customers, the plan for the go-to-market strategy is based on building a viral following using pre-existing "fans" from past products.

The core of Pawtocol's go-to-market strategy is around giving away a Blockchain Pet Tag to customers for free and charging for one-time onboarding. This free product strategy would be revenue and cost neutral and cost the customer under \$9. The goal of this campaign isn't to make a profit but to instead create a network effect at breakeven. Pawtocol intends to develop and execute this campaign in the short-term as an initial means of building a user base.

Roadmap

The Pawtocol team has identified 8 key steps necessary to completing an MVP of the working platform. We do not want to set any concrete timelines yet, but given the event of successful funding we're confident we can complete the steps laid out below within or around 24 months from the date of funding. The following steps will be done in tandem at many phases, a more detailed roadmap will be provided in future versions of the whitepaper.

Grow

Expand the team, complete the smart contracts, develop the off-chain servers, ship Blockchain Pet Tag

Debut

Launch the Blockchain Pet Tag digital profile app user interface and air drop claim system

Upgrade

Release upgraded NFC or/and battery-less Bluetooth Blockchain Pet Tag

Vets

Release a free/cheap vet visit interface and management system.

Suppliers

Release a supplier-side app for product tracking, bring in major suppliers

Wearables

Release Our own Pawtocol-branded wearable and interface for connecting new data collection devices

Release

Release the health and wellness recommendation engine

Launch

Open the world's first member-owned pet data marketplace

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Disclaimers

8.1 Forward-Looking Information

This Whitepaper contains “forward-looking statements” within the meaning of securities, consumer protection and other laws in various countries, states, provinces, and jurisdictions. Such forward-looking statements involve risks and uncertainties that relate to, among other things, Pawtocol’s: Market and business strategies; plans to develop and commercialize its products and services; plans to expand its customer base; ability to establish and maintain necessary strategic relationships; ability to maintain its competitive advantage; ability to comply with applicable regulations and laws; ability to establish and effectively operate the business; ability to attract and retain necessary employees and personnel; ability to protect its intellectual property; position in its markets; and, the future growth of pet and other relevant industries.

Forward-looking statements include, but are not limited to, statements containing words such as “may,” “could,” “will,” “should,” “assume,” “expect,” “anticipate,” “plan,” “intend,” “believe,” “predict,” “estimate,” “forecast,” “outlook,” “potential,” or “continue,” or the negative of these terms, and other comparable terminology. Actual results could differ materially from those anticipated in these forward-looking statements as a result of a number of risks and other factors, including those described in the “Risk Factors” section elsewhere in this Whitepaper and in the other disclosures Pawtocol may make from time to time.

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8.2 General Suitability

The acquisition of Tokens is only suitable for financially sophisticated persons who are capable of evaluating the merits and risks of such an acquisition, or other persons who have been professionally advised with regard to token acquisition and who have sufficient financial resources to be able to bear any losses that may arise therefrom (which may be equal to the whole amount spent in connection with the token acquisition). Such an acquisition should not be seen as an investment or a financial asset.

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This Whitepaper does not constitute a prospectus or offering document and is not a solicitation for investment and does not constitute an offer of financial instruments, securities to the public or a collective investment scheme.

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This Whitepaper does not constitute a prospectus or offering document and is not a solicitation for investment and does not constitute an offer of financial instruments, securities to the public or a collective investment scheme.

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It is solely up to token purchasers to ensure that no prior or subsequent approval, notification, registration or licence is needed or if such is needed, it is solely up to token purchasers to obtain such prior or subsequent approval, notification, registration or licence or require any form in the country where you are a citizen, national, resident or having a similar connecting factor, or incorporated, registered or effectively managed, and Pawtocol shall not in any way be liable for any non-conformity of the above by token purchasers.

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Any decision to purchase UPI tokens shall be based on consideration of this Whitepaper as a whole. Pawtocol reserves the right to (i) make changes to this white paper and any documents linked to the UPI token and/or holding and use of UPI token to ensure compliance with the applicable regulatory requirements, and (ii) do all that is necessary to be in compliance with any regulatory requirements, including but not limited to, interrupting, suspending or ceasing the operations or trading of the UPI token if deemed necessary at Pawtocol's sole discretion.

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8.7 Risk Factors

Pawtocol faces a number of risks and uncertainties that could cause actual results or events to differ materially from those contained in any forward-looking statement. Factors that could cause or contribute to such differences include, but are not limited to, the following risk factors:

The possibility that Pawtocol will not fully realize the anticipated benefits of its business plan, objectives, acquisitions, and other business investments

Business plans are based upon assumptions as to current and future conditions in markets and strategies to take advantage of them. Pawtocol believes the assumptions are reasonably accurate. However, those assumptions may not be sufficiently accurate or the conditions underlying them may change in ways which were not foreseen by Pawtocol.

Pawtocol's ability to execute its business strategy Pawtocol believes its management and management plan are suited to execute its business strategy. However, actual management performance may vary from expectations and management may not be optimally suited for any changes that may be made to Pawtocol's business strategy.

Pawtocol's reliance on one or more suppliers Pawtocol relies on certain technology and technology hosting providers. Pawtocol cannot guarantee the continued operations of those providers or the absence of service interruptions from those providers due to their operations or a transition from those providers if necessary.

The growth of pet markets Pawtocol's business plan assumes continuing growth of pet markets. If the pet markets cease growth or if their growth slows, that could adversely impact Pawtocol's performance and its ability to execute its business plan.

Changes in general economic and business conditions Changes in general economic or business conditions could adversely impact demand for Pawtocol's Products and as a result it could adversely impact Pawtocol's performance and its ability to execute its business plan.

Pawtocol's financial condition and liquidity, as well as its future cash flows and earnings Should Pawtocol's financial condition, liquidity, cash flows and earnings not meet expectations, it could adversely impact Pawtocol's ability to fund its operations and as a result it could adversely impact Pawtocol's performance and its ability to execute its business plan.

Pawtocol's level of operating expenses Pawtocol's business plan assumes certain levels of operating and expenses and costs. Should the actual level of those expenses or costs significantly increase, it could adversely impact Pawtocol's performance and its ability to execute its business plan.

The effect, interpretation or application of new or existing laws, regulations, and court decisions Changes to, or the addition of new, laws or regulations, or court decisions have similar effect, could increase Pawtocol's operating costs or make its operations unsustainable in various jurisdictions.

The availability of funding Pawtocol's business plan requires outside funding at various intervals and funding from operations. Should such funding not materialize in significant part, it could adversely impact Pawtocol's performance and its ability to execute its business plan.

Catastrophic events and natural disasters

Acts of war or terrorist activities

Other economic and political risks and uncertainties

An expanded complete UPI token risk disclosure statement is available at the link provided below. The expanded risk disclosure statement MUST BE READ TOGETHER with this risk factor overview.

Token Risk

IT IS NOT POSSIBLE TO LIST OR FORESEE ALL THE RISKS THAT MAY AFFECT THE COMPANY. MOREOVER, THE COMPANY CANNOT PREDICT WHETHER IT WILL SUCCESSFULLY EFFECTUATE ITS CURRENT BUSINESS PLAN. EVERYONE IS ENCOURAGED TO CAREFULLY ANALYZE THE RISKS AND MERITS OF PURCHASING OR EXCHANGING TOKENS.