

**ENGINEERING
LEADERSHIP**
PROFESSIONAL PROGRAMS



Title:

Creatures Smart Leash Executive Summary

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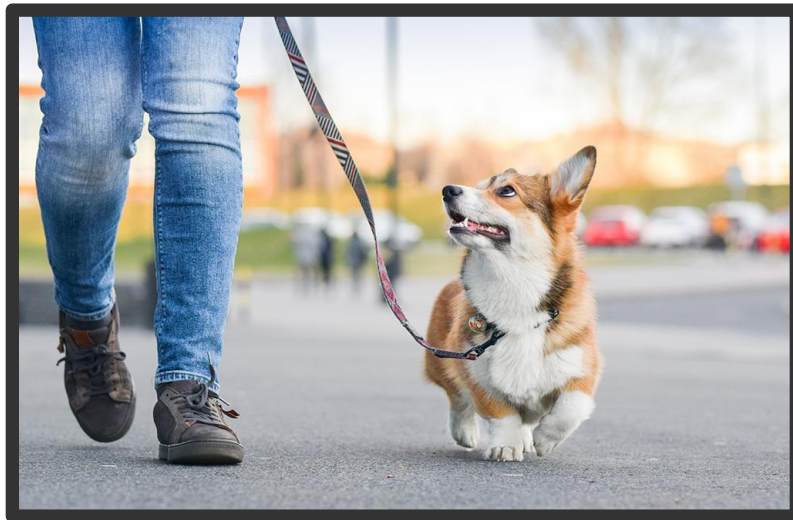
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Overview

Humans depend on a multitude of smart devices and wearables to monitor their health and activity. For example, my smart watch is telling me to stand up because I'm sitting down writing this paper. However, even though we've grown to rely on these devices to keep ourselves healthy, we have not extended this valuable technology to our beloved pets. In fact, in the United States, 53% (48.3M) dogs are overweight or obese, contributing to a decrease in life expectancy and increased costs for pet owners who need to pay for expensive treatments for conditions like diabetes and heart disease.

Creatures was founded on a passion for providing humans the information that they need to keep their pets healthy and happy by building smart pet products to deepen the bond between owner and companion with data visualization software. Creatures flagship product focuses on reducing obesity in dogs with the development of Smart Leash™. Smart Leash™ gives dog owners the ability to have a high Quality Walk™ with their trusty companions.

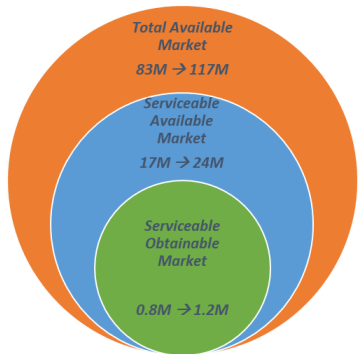
The Creatures Smart Leash™ is a smartphone connected device which helps the human train their dog to not pull during walks, providing visual cues to the human and audible cues to the dog. With the Creatures Mobile App™, dog owners will view how often their dog pulls during a walk, where on the walk the dog pulls the most, and their average walking pace. This information is used to calculate the Creatures Quality Walk™ score, which both the dog and the dog owner can brag to their friends about using the Creatures Mobile App™.



Market

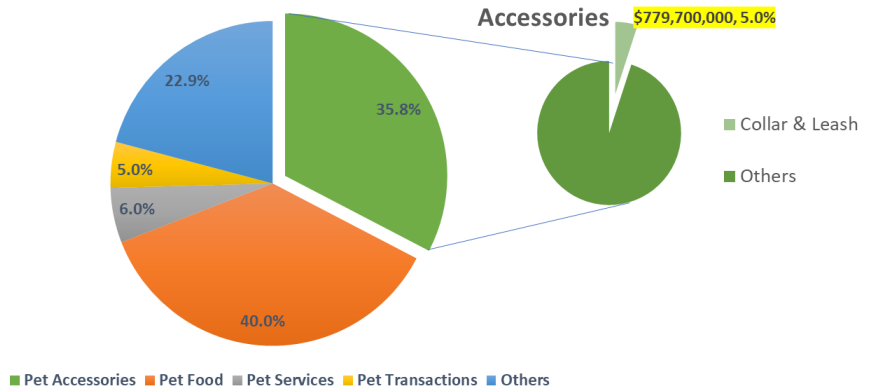
According to current and forecasted projections of the number of dogs in US households, there is a consistent and expanding market where the need for pet products continues to grow. The number one revenue driver in the pet industry is pet foods, however as you see from the second chart on the right, pet accessories make up to ~35% of the overall market. Collars and leashes make up more than half a billion dollars in revenue.

US Dog Household Population



2020 - 2030 Dog Population in the USA

US Pet Market

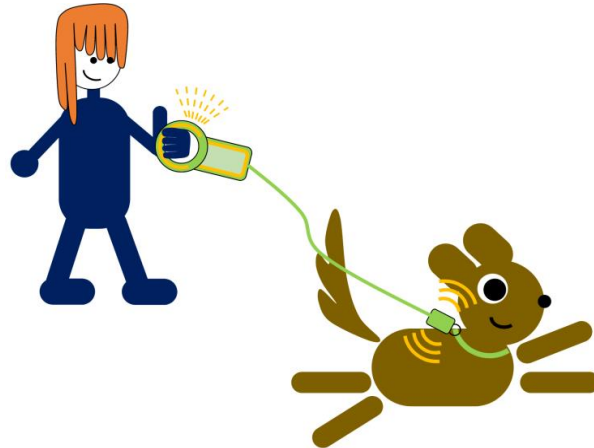


There is no existing product like Creatures Smart Leash™ in the market today. However, the Smart Leash™ competes in the market with other dog training accessories with an initial serviceable market between 0.8M and 1.2M.



Technology

All Creatures technology is built to deepen the bond that pet owners have with their companions, and Creatures Smart Leash™ is no different. Creatures Smart Leash™ operates on the simple principles that 1) dog training is most successful when the training is conducted with consistency and 2) humans, by nature, are not consistent. The Smart Leash™ technology starts with a piezoelectric sensor embedded into the handle of a retractable leash. This sensor detects when the dog pulls on the leash with more pressure than desirable. The handle lights up to give a signal to the pet owner to stop walking. At the same time, a high frequency dog audible sound is played from the leash to a collar attachment point near the dog's ears or neck. This sound gives the dog an easily recognizable sound to associate pulling with and the negative consequence of a pause in their excited walk. After the dog has stopped pulling, the owner provides positive reinforcement to the dog to reward the behavior.



Smart Leash™ collects information about how often the dog pulled, the location of the pull, and the average walk pace of the human and sends this information to the user's smartphone. Creatures Mobile App™ uses this information to calculate a Quality Walk™ score. Quality Walk™ score is how Creatures incentivizes pet owners to improve their walks with their dog, giving them an overview and tips for their walk. For example, the pet owner may not realize that the dog pulls more near a local pond. Armed with this knowledge, the pet owner practices their dog training closer to the pond to reinforce the positive behavior even with distractions.

In addition to using the Quality Walk™ score as an incentive to improve the overall walk experience with their dog, it is used to gamify having high quality walks. Creatures Mobile App™ provides the user with the ability to share with other users of the application their walk score. In addition, Creatures Mobile App™ provides Quality Walk™ score history and notifications to remind the user to walk their dog with a focus on high quality walks. Creatures plans to enrich the gamification aspects of the High Quality™ walk score with future integrations with mobile applications like Pokemon Go™ and Apple Activity™.

Creatures product technology requires protection as intellectual property and will go through patent review with intellectual property lawyers to ensure that the technology is protected from replication and theft.



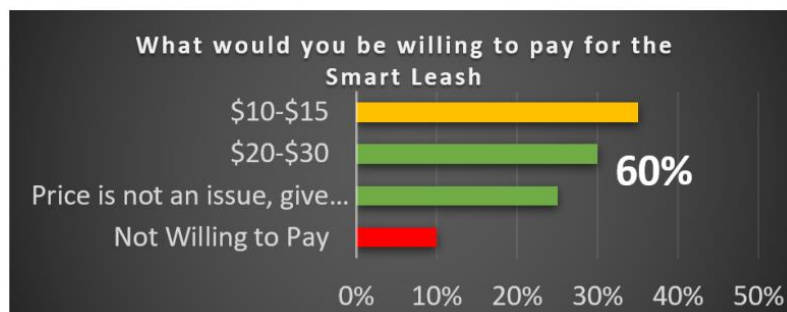
Competition & Alternatives

Plenty of leash and collar products already exist in the market, however, **none of them are “smart” devices**. The shock collar uses electricity to punish dogs by a button on a mobile controller when pet owners think their pets misbehave. Since it is controlled by humans, and humans are not consistent, the training result varies. More importantly, it is considered inhumane by most people. How can we do this to our beloved ones? This concern is also true for choke and pinch collars.



There are so called “smart leash” products in the market which rely on the pet owner’s attention and response when dogs pull. It is not surprising to see from users’ feedback that these devices are not as effective especially for medium sized and large dogs. Even the high-end market players, like Zeedog and Flexi, have products that still rely on inconsistent humans to train dogs. Effectiveness of training is not at the core of product design for these alternatives.

According to research done by the Creatures team, 60% of dog owners are willing to spend \$30 or more for a smart device that improves their dog walk. Within this price point, the team found that our main competitors are non-smart pet leashes which range from \$15 to \$44.

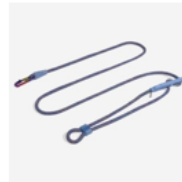


There are at least three different categories of market in the leash product landscape: high-end market (>\$30), middle-end market (\$15~30) and low-end market (<\$15). Combining the market landscape with our survey, **we recognize there is a high-end market where**

satisfaction is not met considering the price point. This is where Creatures generates more value for the customer by providing smart pet devices that create better training and walk experiences. This leads to health benefits for both pet owners and their sweet companions, ultimately creating better bonding and a full life.

A study of the competitor’s financial results shows high gross margin at 40% to 80%. Our own estimation, by consulting manufacturing experts, reveals that a similar high gross margin is achievable for Creatures Smart Leash™. Below is the rough projection and comparison of our products and competitors in the smart leash market.

Leash Market	Creatures Smart Leash™	Competitor 1: Zeedog	Competitor 2: FIDA
Price (\$)	40	44	15
~Gross Margin (%)	66%	60%	40%
~Mfg Cost (\$)	12.4	17.6	9
Remark	High-end + Smart	High-end	Middle-end



Go to Market Strategy

The first two years (2023 to 2024) are the Product Development and Validation phase of Creatures Smart Leash™. During the second year, a trial is scheduled with users acquired by word of mouth and through a Kickstarter campaign.

In the third year (2025), Creatures will launch an Amazon store to sell Creatures Smart Leash™ with a Google Ads campaign to market the leash. In addition, the team will sponsor prominent YouTube influencers and Amazon reviewers for their reviews of the leash.

In the following year (2026), Creatures Smart Leash™ and other Creatures smart pet products will sell directly in big box stores such as Walmart and Petco. The team will also work with pet hotels and pet training schools to use and sell the smart products.

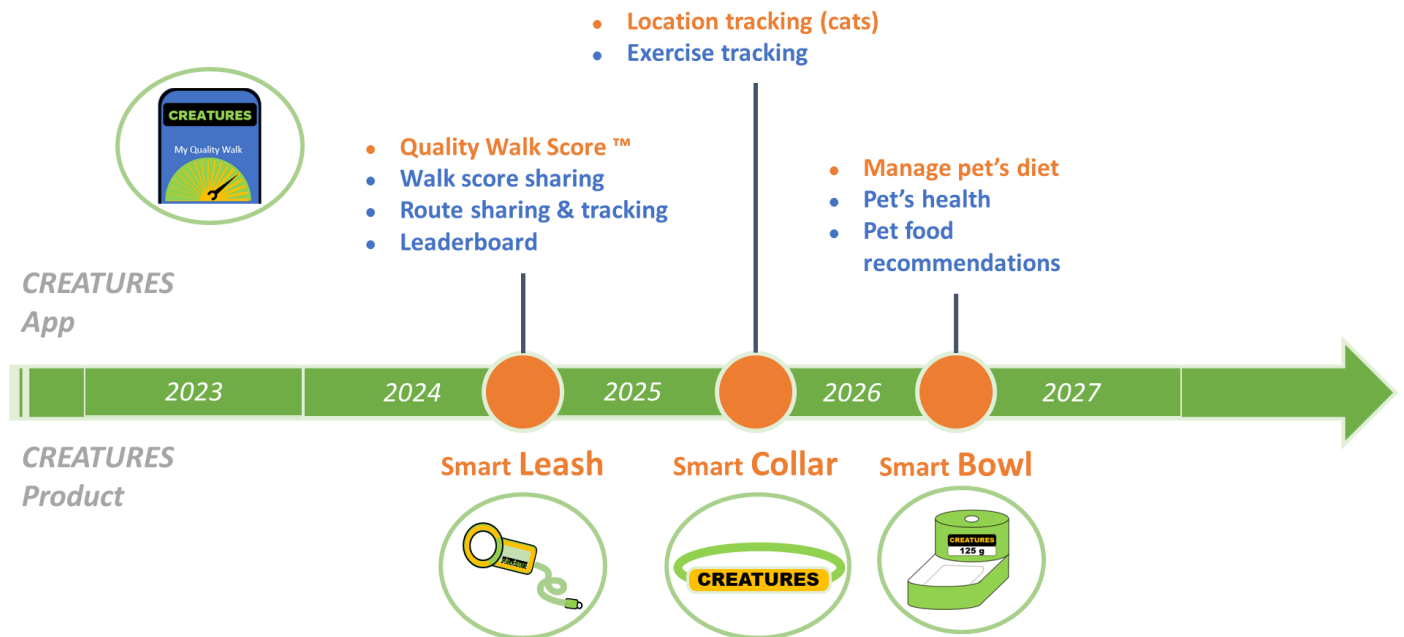


Product Roadmap

In the third year (2025), with the launch of Creatures Smart Leash™, Creatures Mobile App™ is launched. Creatures Mobile App™ is the companion app for the Creatures smart pet products. The app will feature the Quality Walk™ score, a proprietary score calculated using the data collected from the leash. The app will include social features, such as sharing Quality Walk™ scores and walk routes, and a leaderboard to motivate users to improve their walk scores. In addition, a route tracking feature enables parents to track their kids while they walk their pets. These features build a strong community of pet owners.

In the fourth year (2026), Creatures Smart Collar™ is launched. With the app, owners can track the location of their pets that do not use leashes. The new Exercise tracking feature tracks exercise activities of both the pet and its owner. Besides displaying the exercise data for the pet and the owner in the Creatures Mobile App™, the feature also integrates with various health apps such as Apple's Health App, as a source of data for exercise and activities.

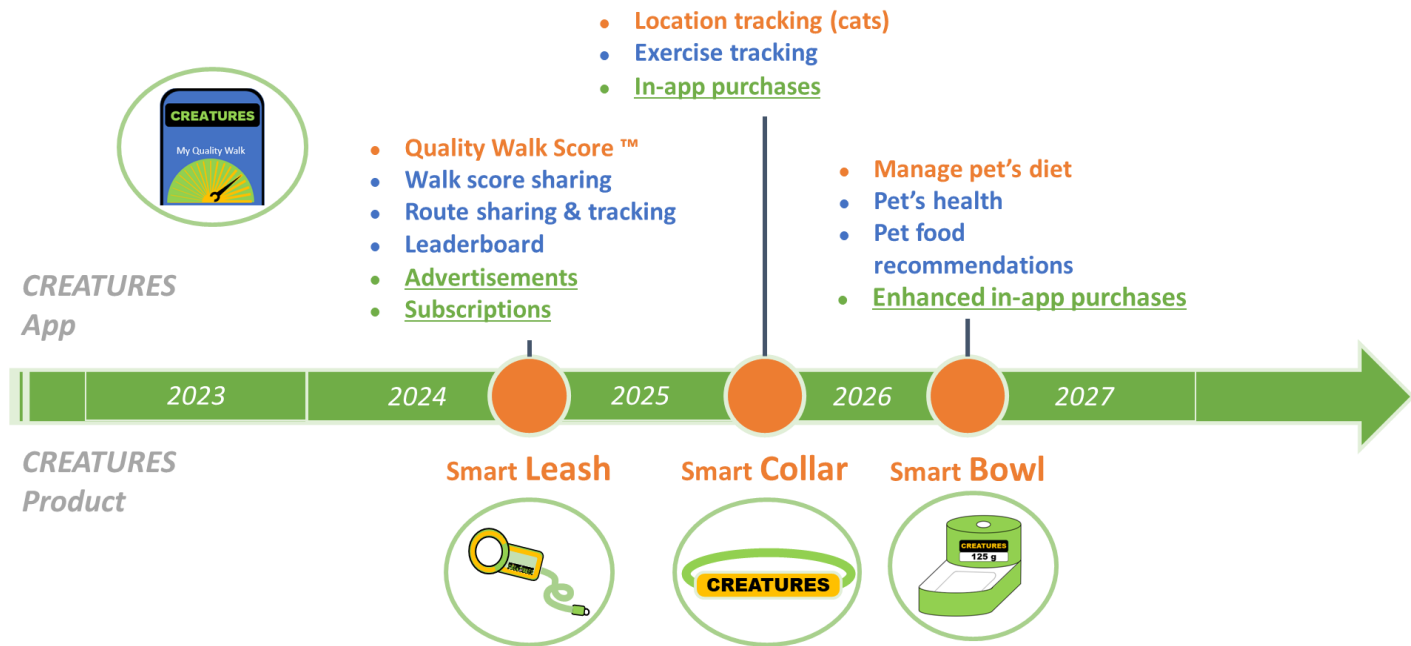
In the fifth year (2027), Creatures Smart Bowl™ is launched. The smart bowl has a built-in scale which, with Creatures Mobile App™, enables the owner to track the amount of food the pet consumes. This and the new Pet's Health app feature allow the owner to manage their pet's diet and health. The pet owner's community will review and recommend pet food and supplements in the app. The Creatures team will continue to develop new app features, providing more value to the pet owners and increasing the stickiness of the app.



Business Model

In addition to selling Creatures smart pet products, other revenue streams for the company include mobile advertisements in Creatures Mobile App™ and from app subscriptions. In the fourth year (2026), in-app purchases are added to the app, allowing users to buy pet toys, pet accessories and Creatures smart pet products from within the app.

In the following year (2027), along with the launch of Creatures Smart Bowl™ and the pet food recommendation feature, in-app purchases is extended for users to purchase the pet food and supplements recommended by other app users.



Financial Analysis

Since part of our business model is to sell the Smart Leash™, we need to have an assessment on the manufacturing cost. To reduce risk as a starting company, we learned from Engineering Leadership Professional Program (ELPP) class to reduce capital expenditure by minimizing fixed cost from directly owning manufacturing equipment. This means outsourcing most of our manufacturing except our core technology.

Therefore, we investigated an Original Equipment Manufacturer (OEM) company, that produces leashes for Walmart, Petco, PetSmart and FIDA, and found its average selling price as below table.

Leash OEM company selling price	2018	2019	2020	2021
Average (US\$)	1.56	1.88	1.99	2.34

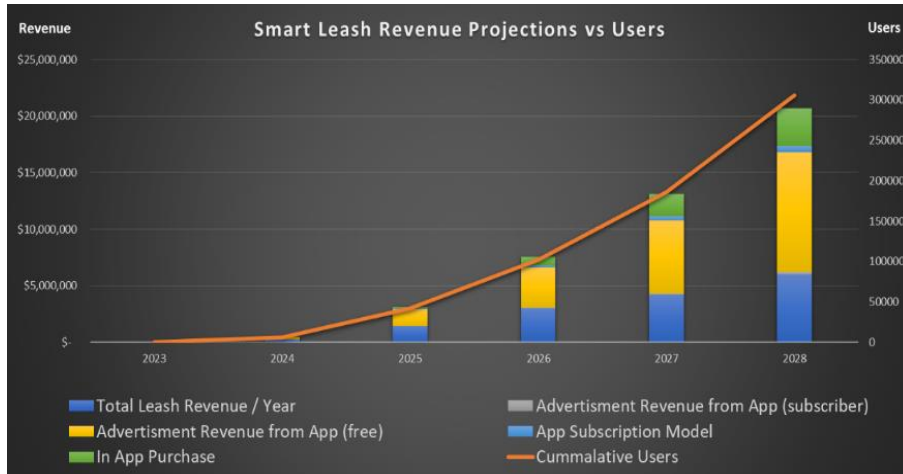
We estimate our basic leash cost at US\$3.0. Afterwards, by consulting manufacturing experts from our network, the cost to produce our core technology parts is also approximately US\$3.0.

After dealing with cost, we investigate pricing strategy. Obtaining mindshare is very important for a starting company to open the market and get momentum. Since we are targeting high-end market, we benchmarked with Zeedog and Flexi. After reviewing their products and prices, Creatures staff team decided to position Smart Leash™ at a competitive \$40 to gain mindshare for early adopters and supporters of the device with subsequent price for the mass market at \$50. We are targeting a gradual growth across 2024 with a ramp in 2025.

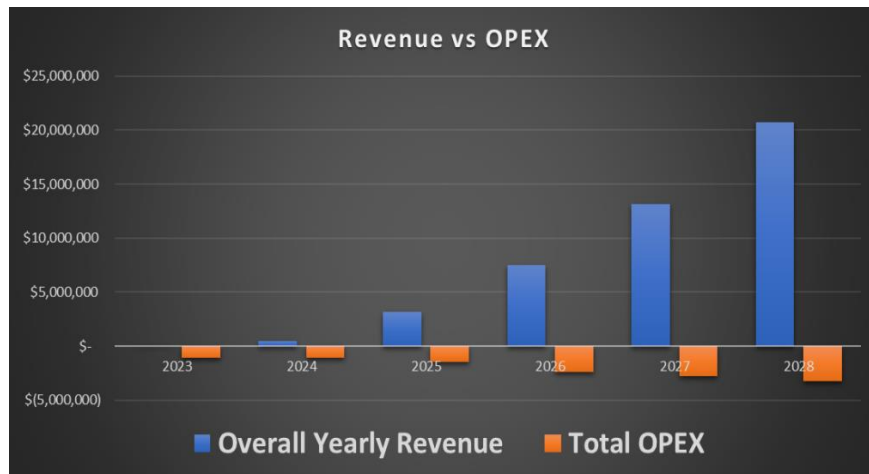
By putting cost and selling price together, we conclude we can deliver a healthy gross margin around 60 to 70% that allows us to weather any needs for a penetrative strategy that may arise. We are targeting a revenue of \$20M by 2028 from Smart Leash™ alone via various channels including:

- Product sales
- Ad Revenue (free/subscription models)
- App subscriptions
- In-App purchases

We expect a strong ramp in user adoption from 2025 to 2028 that complements the revenue plan. *Current projections do not include revenue from our next generation products.*



Our fixed costs, shown below, budget for hardware and software development teams, and include marketing and general/administrative requirements. It also includes development cost for our next generation product rollout including the smart collar and smart bowl. **Our payback period is less than 2 ½ years.**



Summary and Next Steps

Creatures flagship product, Smart Leash™ will make a dent in the crippling dog obesity problem by providing a solution to pet owners allowing them to easily train their pets to go for walks safely. Walking will become healthy and enjoyable for both pet owner and their trusty companion. A strong gross margin makes Smart Leash™ a great first product to break into the market while quickly deploying the Creatures Mobile App™ to build momentum.

The strong and growing pet market makes Creatures a safe bet for investment as this talented leadership team executes an aggressive business model from Smart Leash™, to Mobile App™, to Smart Collar™, and Smart Bowl™. The deployment of the Mobile App™ and its continual development to gather useful data, engage in social media, and make the lives of pet owners easier brings the whole Creatures product line together.

We are ready to kickoff this exciting journey and are looking for investors. The Creatures team requires \$1M today to support completing development of the Smart Leash™ and beta development of the Mobile App™ in 2023. An estimated \$0.5M to \$1M is required in 2024 for pre-release depending on the success of the Kickstarter campaign.

During our ELPP pitch, we were thrilled to learn that a member of the Chewy executive team would like to hear about our product. We will reach out and make that connection with the goal to test the waters with Creatures...smart products that improve the quality of your pet's life.

