

Smart Pet Monitoring Collar



Real-time pet safety,
location, and well-being
monitoring through a
mobile app.



Group 4

Entrepreneurship Project - IST

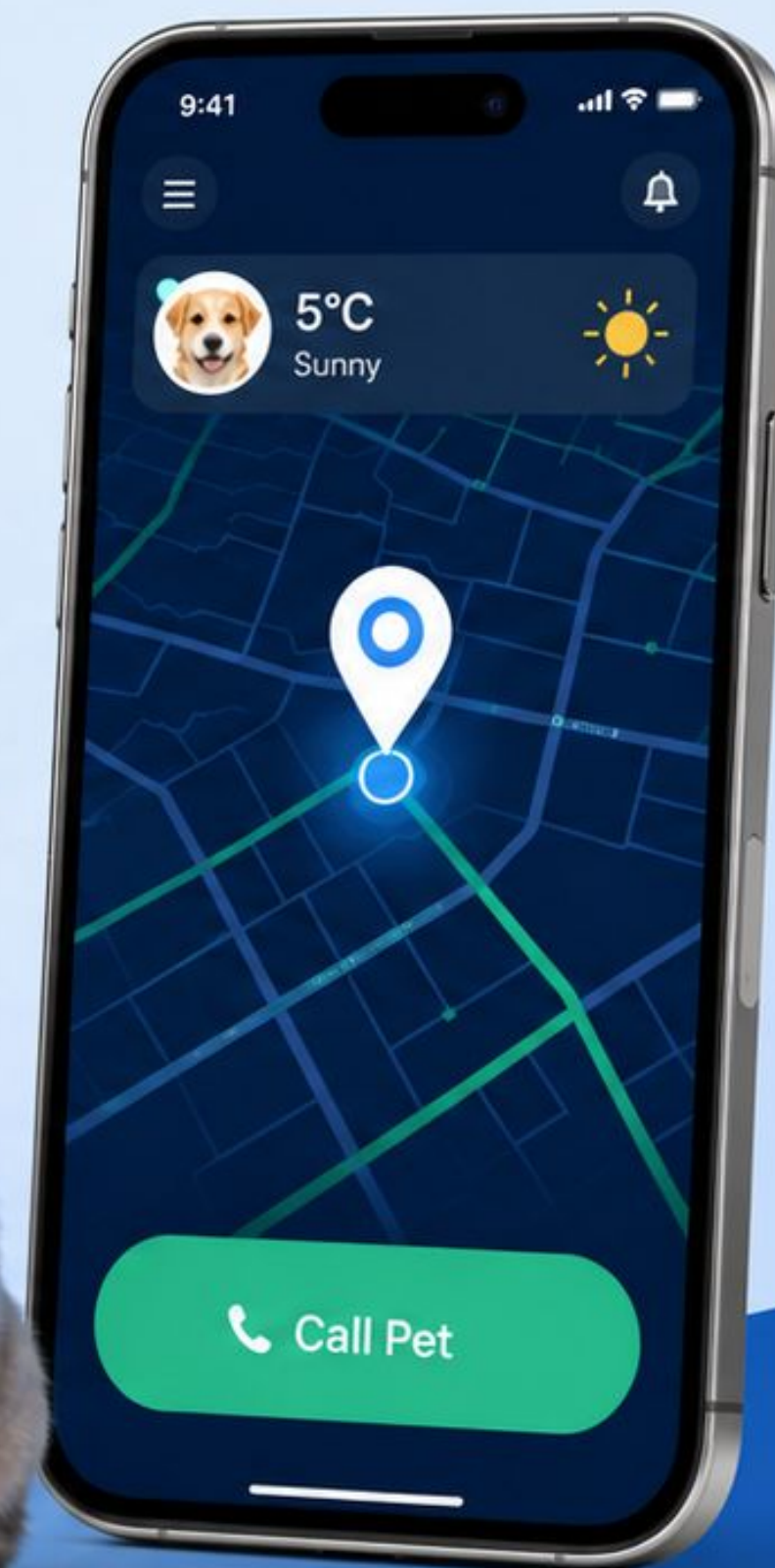















Table of Contents

01		Meet The Team
02		Our Company
03		The Problem
04		Market Opportunity
05		Our Solution
06		Hardware
07		Product & App Experience
08		BMC
09		Customer Validation
10		Business Model
11		Competition & Advantages
12		Marketing, Sales & Milestones
13		Next Steps & Strategic Needs



Meet the Team



Francisco Azevedo
Designer



Francisco Morgado
Manager



Diogo Rocha
Engineer



Érica Mendes
Marketing



Diogo Pisco
Business



Our Company: Pet Sense Technologies



What do we do?

IoT pet monitoring with GPS, temperature, motion detection, sound interaction, microphone, and an ID tag for the pet.



Why do we do it?

Promote pet safety and owner peace of mind.



How do we do it?

Low-cost MKR NB 1500 + sensors + Firebase + Android app.



The Problem

- Pet owners cannot always monitor their pets when they are away.

- Key problems:



– Pets can escape or get lost



– Owners lack real-time location information



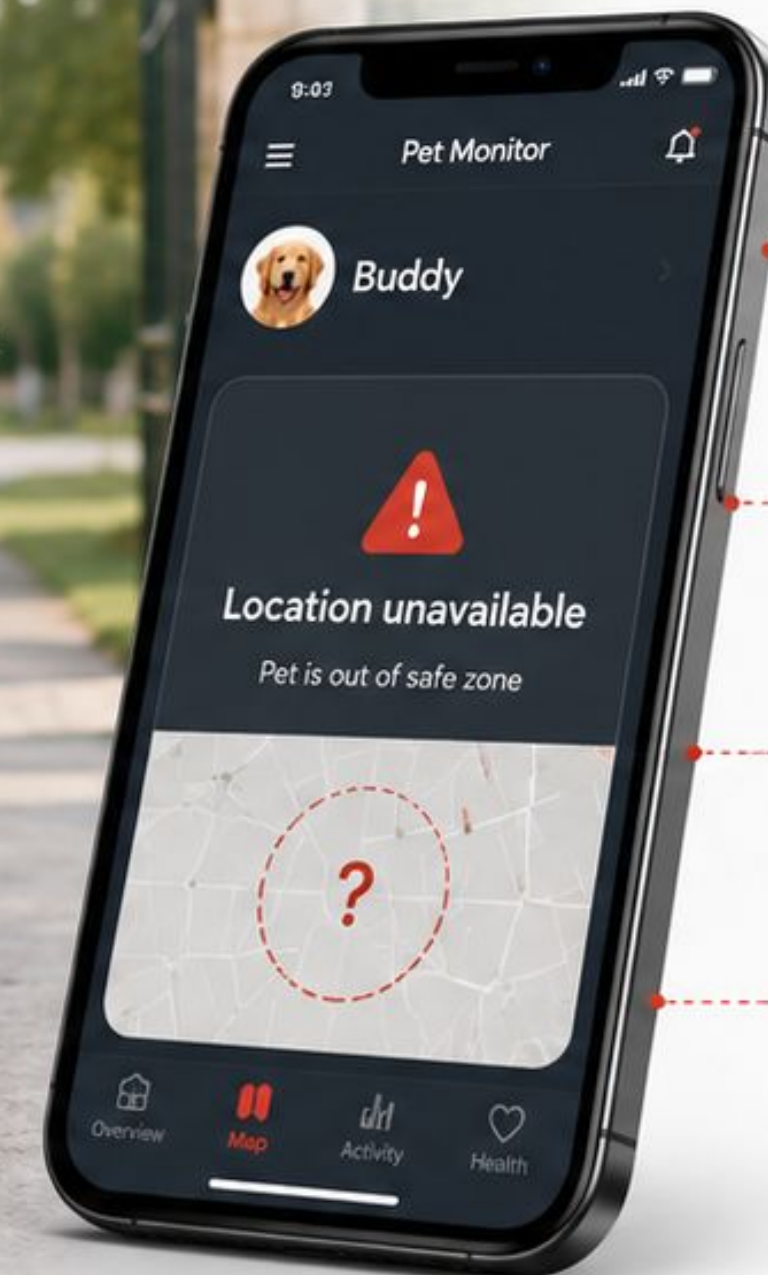
– It is difficult to monitor activity and wellbeing remotely



– Elderly, sick, or outdoor pets need extra attention



– Existing solutions usually solve only one part of the problem



Lost or out of range



No real-time location



Activity unknown



Needs extra care

Market Opportunity



Target Market:

Pet owners and pet care service providers



Primary segment:

Urban dog owners with full-time jobs




Secondary segments:

- Cat owners with outdoor pets
- Kennels and pet hotels
- Veterinary clinics
- Pet sitters and animal shelters


Why this market?

- ✓ Clear safety need
- ✓ Emotional connection with pets
- ✓ Willingness to pay for peace of mind



 Urban dog owner



 Dog training












 Veterinary clinic



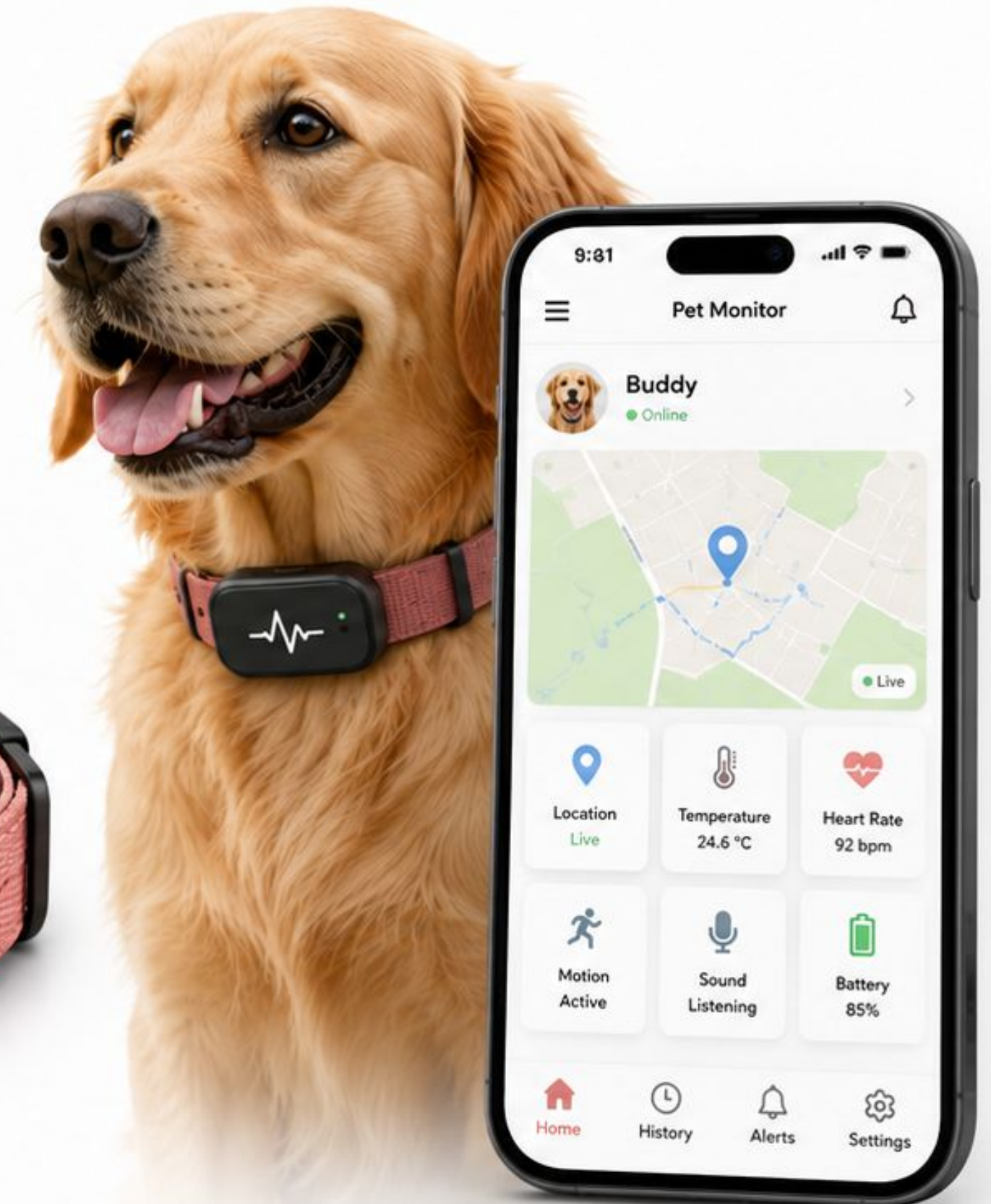
 Animal shelter / kennel























Our Solution

-  GPS Tracking
-  Ambient Temperature
-  Motion Detection
-  Microphone & Speaker
-  Buzzer
-  QR Code Identification
-  Heart Rate
-  Night Light
-  Mobile app

One product. One app.
More safety and control.



Hardware

Component	Function
 Arduino MKR MB1500 (26.25€)	 Processing and 5G Communication
 DHT11 Sensor (1.40€)	 Ambient Temperature Measurement
 Vibration Sensor Keystudio KS0037 (1.29€)	 Pet Motion Detection
 GPS Module (4.30€)	 Real-Time Pet Location
 Active Buzzer (0.86€)	 Remote Sound Interaction
 Micro Wire JDY-33 (1.34€)	 Microphone and Speaker
 MAX30100 Heart Rate Sensor (0.87€)	 Measuring the Pet Heart Rate
 QR Code (0.10€)	 ID off The Pet
 LED 22mm (1.30€)	 Night Light for Pet
 Wires x60 (3.40€) - (0.05€ / Wire)	 Prototyping and Connections



Total Cost to Produce One Unit: 37.76€



Location



Activity



Heart Rate



Temperature



Alert









ID

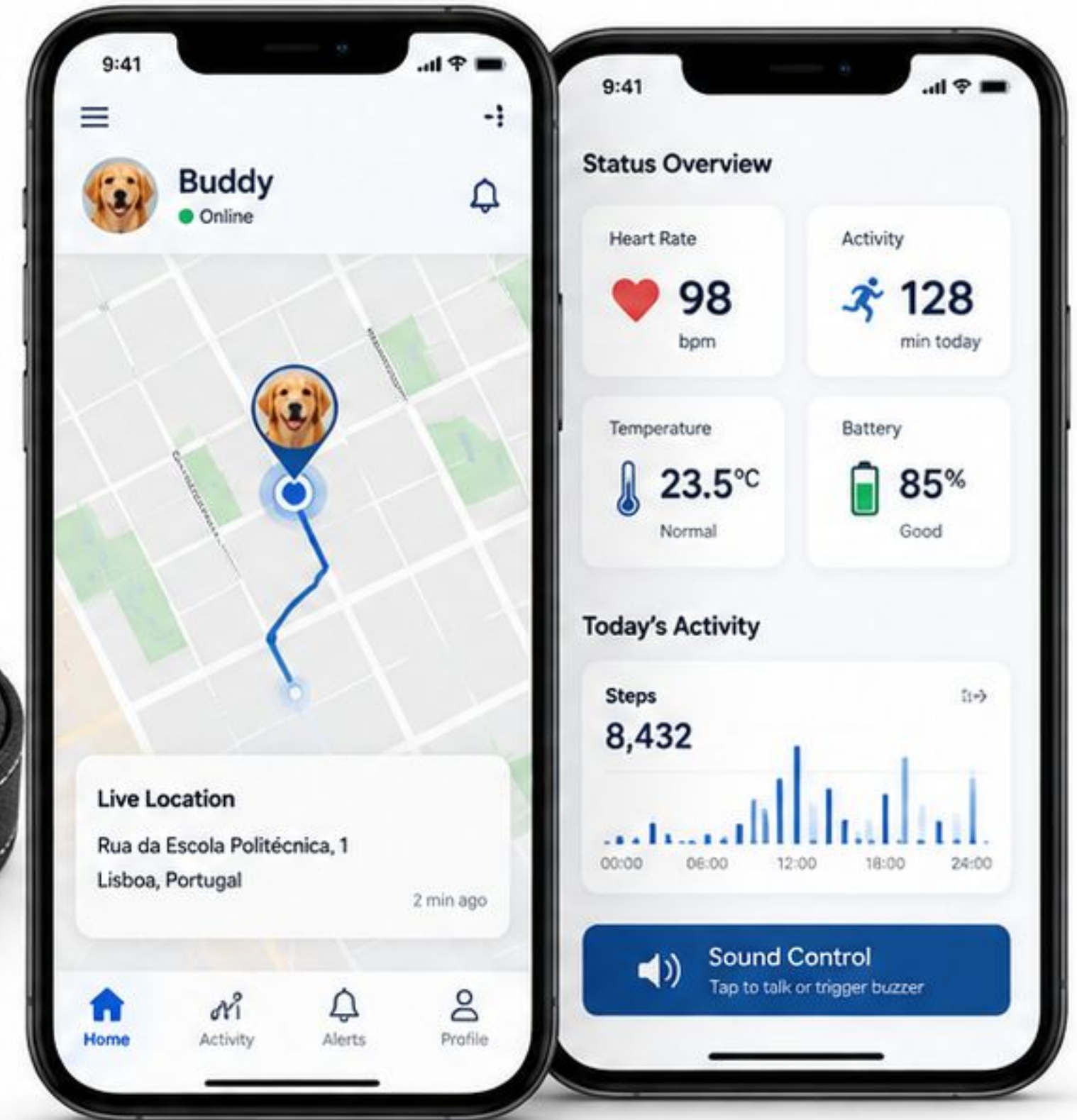
Product & App Experience

- **How it works:** Collar → Firebase → Mobile App → Pet Owner



- **App features:**

-  **Live location tracking**
See your pet's real-time location on the map.
-  **Pet status overview**
Check activity, heart rate, battery and more.
-  **Activity monitoring**
Track daily activity, steps and playtime.
-  **Temperature alerts**
Get notified if the temperature is too high or low.
-  **QR code profile**
Scan to view pet profile and contact information.
-  **Sound interaction controls**
Talk to your pet or trigger the buzzer remotely.



BUSINESS MODEL CANVAS (BMC)



Key Partnerships

-  Electronic component suppliers
-  Vet Clinics
-  Pet Shops
-  Software development partners
-  Firebase/cloud service provider



Customer Segments

- Pet owners
- Shelters
- Small Farms
- Animal Training
- Vet Clinics



Key Resources

-  • Mobile app platform
-  • Sensors and GPS module
-  • Microphone, speaker and buzzer
-  • QR code system
-  • Firebase/backend connection
-  • Development team



Value Propositions

-  • Real-time GPS tracking
-  • Temperature monitoring
-  • Motion/activity detection
-  • Training support with buzzer
-  • Pet identification through QR code
-  • All-in-one mobile app
-  • Real-time alerts and notifications



Customer Relationships

-  • Real-time notifications via app
-  • Online support
-  • Software updates



Channels

-  • Vet Clinics and Hospitals
-  • Pet Shops
-  • Mobile application
-  • Social Media
-  • Official Website



Key Activities

-  • Sensor integration
-  • Collar prototype assembly
-  • App-Firebase connection
-  • Battery and connectivity testing
-  • Field testing with pets
-  • Marketing and promotion



Cost Structure

-  • Collar production
-  • App development
-  • Server maintenance
-  • Connectivity costs
-  Logistics and distribution
-  Marketing and advertising
-  Customer support
-  Warranty/replacement costs



Revenue Streams





-  • Collar sales
-  • Direct sales to pet owners
-  • Sales through pet shops
-  • Sales through vet clinics
-  • Partnerships with shelters
- € Accessories and Upgrades
- € Production cost per collar: 37.76 €
- € Selling price per collar: 75 €
- € Gross profit per collar: 37.24 €

Business Model




Product Sale Model:

Smart collar sold directly to customers

	Selling price:	€75
	Production cost:	€37.76
	Gross margin per unit:	€37.24
	Gross margin percentage:	49.65%



Additional revenue opportunities:

-  Accessories and replacement parts
-  Different collar model
-  Professional packages for kennels and shelters
-  Partnerships with pet shops and veterinary clinics



Customer Relationships



How We Keep Customers Engaged:



Real-time notifications



Mobile app support



Software updates



Fast customer support



Loyalty discounts



Future product upgrades



Objective:



Long-term relationship, customer trust and future upgrades.



Customer Validation



We interviewed 19 stakeholders

- 13 pet owners
- 3 kennels / shelters
- 3 veterinary professionals



Most valued features



GPS tracking



Mobile app



QR code identification



Motion detection



Temperature monitoring



Main concerns



Battery life



Comfort



Resistance

Competition & Advantages

Existing Solution	Main Limitation
 AirTag/Bluetooth Trackers	 Limited range and no wellbeing data
 GPS Trackers	 Mainly focused on Location
 QR Code Tags	 Passive Identification Only
 Basic Smart Collars	 Fewer Integrated Features



Our advantage:

all-in-one collar with safety, wellbeing, identification and interaction.



Safety



Wellbeing



Identification



Interaction



Marketing, Sales & Milestones



Launch:



Online direct sales



Social media campaigns



Pet owner communities



Demonstration video



Growth:



Pet shop partnerships



Veterinary clinic recommendations



Kennel and pet hotel partnerships

Period	Milestone
 0–6 months	Final prototype and app testing
 6–12 months	Pilot tests
 12–18 months	First online sales
 18–36 months	Partnerships and scale-up

Next Steps & Strategic Needs

What we are looking for:



Support to improve the prototype



Pilot partners for real-world testing



Investment for production and app development



Partnerships with pet shops, veterinary clinics and kennels



Together, we can
make pets safer
and owners happier.



Safer pets



Happier owners



Stronger partnerships



Greater impact





**Technology should not only
connect people – it should also
help us care for those who cannot
speak.**

– Pet Sense Technologies Team