Group 06 - Rent a Dog - Project Overview – Report 01

Introduction

The company is a project Group for the CSIS3275 – Software Engineering class. Founded in 2022, in the city of New Westminster by Andre, Alexandre, Armando and Mateus.

1. Problem Statement

Following a survey from GfK Global Study (2016)[1], 33% of the Canadian population have dogs. If we consider the same amount for British Columbia, that is almost 2 million people or over 700 thousand households with dogs in their lives (BC Stats, 2021).

These people are mothers, fathers, grandparents, and children with their own responsibilities and tasks during the day and, therefore, may not always have time to give the proper attention to their dogs. It is common knowledge that dogs require attention during the day, especially the one's livings in condominiums or big breeds such as Border Collie, Australian Shepherd, Labrador Retriever, and Siberian Husky that are very highly energetic and frequently need to go for a walk or even a run (Ultimate Pet Nutrition Team, 2022).

Thinking about these people and their pets, our company produced a revolutionary idea, in which it is possible to rent your dogs for a few hours a day. So, when you are on a super busy day, feeling tired after a long work journey, or have a pre-scheduled appointment, you can submit in our system your dog availability. Another reason people would want to rent their dog is to get some extra cash at the end of the month, especially considering owning a dog in Canada costs, on average, $3,724 a year (PHI Direct, 2022), which can be a bit overpriced, to low-income families. Renting your pet can be a terrific way to help to pay those expenses and let your dog have a new experience!

On the other hand, there are millions of people in the province without pets due to several reasons, their tenancy agreement does not allow it, or they travel too frequently to have such a responsibility of taking care of another life in their hands. This way, we can remedy this lack of a companion in their life by renting a dog for a few hours to walk or play with.

So, our system can tackle both problems, allowing people to rent their own dogs for a fee of their choice and making extra money for their income, and allowing other people to have loyal friends for a few hours.

[1] GfK Global Study, 2016 | BC Stats, 2021 | Ultimate Pet Nutrition Team, 2022 | PHI Direct, 2022

2. Functional Requirements

- User will need to register himself
- User can sign in to rent(offer) a dog or rent(get) a dog
- User can search for a dog
- Application will start and finish rent
- User can input data about the dog
- Dog owner can select available days to rent a dog
- User (renter) will be able to choose the amount of time to rent a chosen dog
- The same dog cannot be rented to a different people in a single day
- The application will track the dog location (version 2)
- The application will call emergency if the dog is out of the specified range (version 2)

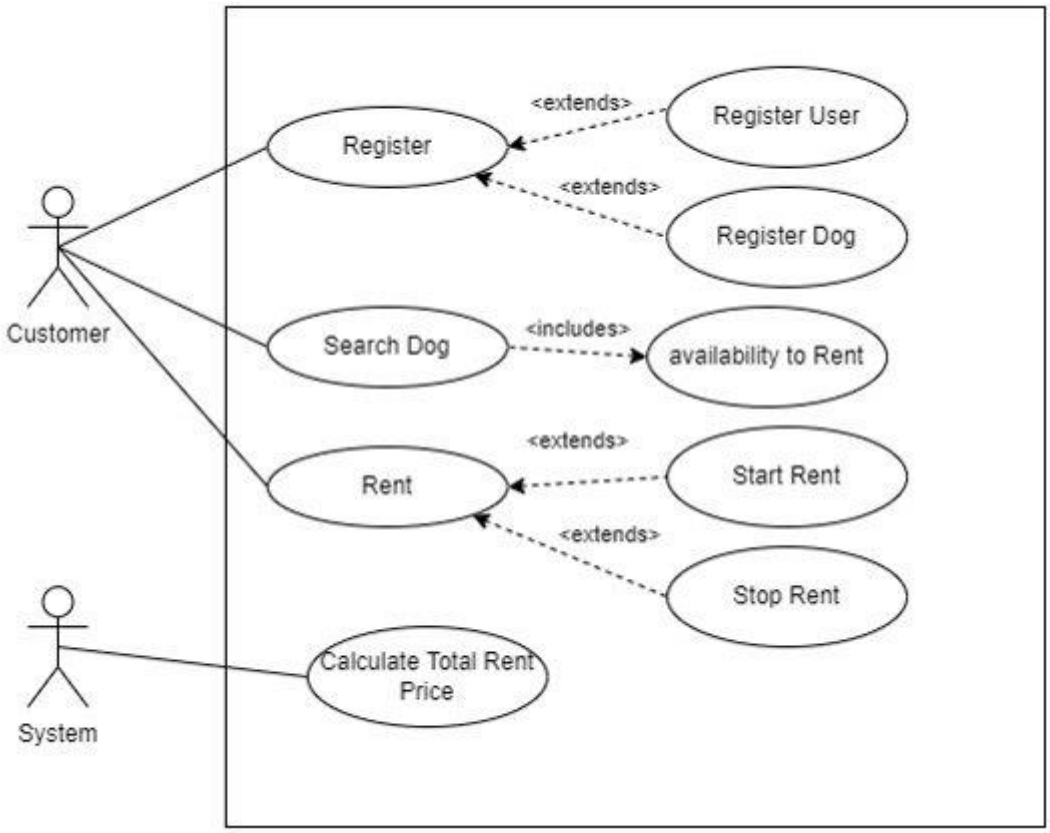
3. Non-Functional Requirements

- Integrability: New features that will be added should not affect the current developed features
- Scalability: Backend will be scalable vertically and horizontally to support more users
- Stability: Service will not be out of service more than 5 minutes (Unless notified 48 hours in advance)
- Response time: System will not take more than 5 seconds to respond users' request
- Accessibility: User interface will be intuitive and friendly for users

4. Rules

- We will charge 20% for each hour booked through our system and issue a monthly invoice
- We are not responsible for the dog in an emergency
- The user will accept the signing of the contract on the platform
- The first version will not track the dog
- Owner will be responsible for scheduling drop off and pick up, location will be renter's registration address saved in our system on sign in

5. Use Cases Diagram



6. Revenue Models

Transaction Revenue Model: Considering the rental model, the most appropriate system revenue is revenue on each transaction. After brief research on the solutions that exist today, such as Uber, DoorDash, etc., the project team chose to set 20% of the total rental value as a service and support fee. This income will be enough to cover operational, sales and marketing expenses, as well as ensure the perpetuity of the business. The entire revenue projection is detailed in the Revenue Projection step.

7. Business Case

Introduction

Recently, a publication brought up an important topic: Dog Rental[2]. Emphasizing what has already been mentioned above, there are two needs that can be met with a software/service solution: On the one hand, dog owners without the time to take their canines for a walk or have fun, and on the other hand 67% of Canadians who do not have dogs, but who could have.

2 https://dailyhive.com/vancouver/vancouver-public-library-canine-poetry-in-parks-dogs-revealed

Initial Investment

Considering the development, the team estimated the costs below:

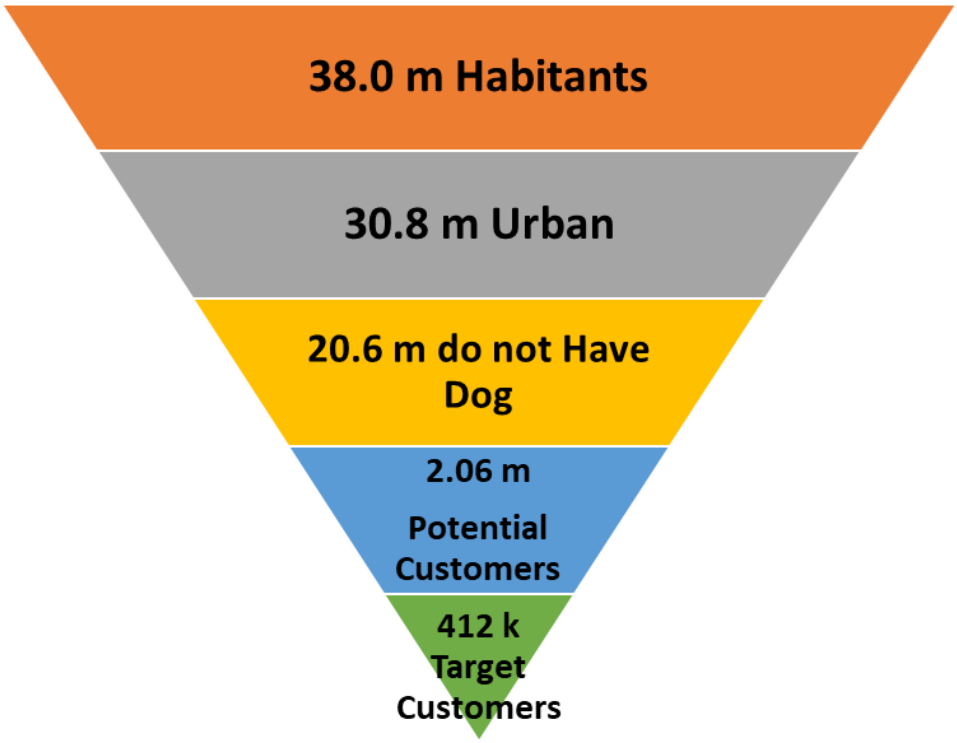
Investment	Hours	Hour Cost	Total CAD
Developer	1800	80.00	$ 144,000.00
Quality Check	180	80.00	$ 14,400.00
Project Manager	180	120.00	$ 21,600.00
Total	**2160**		**$ 180,000.00**

With a group of 6 developers (1 SR, 2 Full and 3 JR), the project will have 2 months of duration. Furthermore, the complete team will have 2 testers and 1 PMO.

Revenue Forecast

The total population of Canada is estimated at 38 million, those 81% are living in urban areas. As mentioned before, 33% have dogs and 67% do not. The total number of urban people that do not have dogs is around 20.6 million, which is our population target. According to an internal estimative, about 10% of the population target could be our customer target (2 million).

To sum up, the team understands that it is possible to have 20% of the Market Share in the Customer Target. These customers will experience a gradual increase through the first 5 years of operation.



Year	1	2	3	4	5
Avg. Customer	10,000	25,000	40,000	55,000	80,000
Ticket/Price	$ 25.00	$ 25.00	$ 25.00	$ 25.00	$ 25.00
Uses by year	24	24	24	24	24
Company Fee	20%	20%	20%	20%	20%
Total Revenue	$ 1,200,000	$ 3,000,000	$ 4,800,000	$ 6,600,000	$ 9,600,000

Based on the 412 thousand customer target, in year 5 the company will have 20% of this market.

Costs and Expenses

Each line of the Forecast has its rational and will be described below.

Maintenance: Was estimated around 40 hours a month for system maintenance.

Cloud Services: For having the system running, the clous services include the operation of the system and was estimated in CAD 6.00 a year by each Customer.

Operational/Support Team: For support, each member of this operational group will manage 10 rentals a day, and the increase in headcount is related to the number of customers.

Administrative Team: Will be responsible for managing the operational team, sales, Marketing and Finances.

Marketing: Usually one of the main expenses, in this case, the company estimate the Cost of acquiring a new customer at CAD 25 each of them.

Year	1	2	3	4	5
Maintenance	38,400.00	38,400.00	38,400.00	38,400.00	38,400.00
Cloud Services	60,000	150,000	240,000	330,000	480,000
Operational / Support Team	320,000	800,000	1,280,000	1,760,000	2,560,000
Total Costs	418,400	988,400	1,558,400	2,128,400	3,078,400
Administrative Team	240,000	600,000	960,000	1,200,000	1,200,000
Marketing	250,000	625,000	1,000,000	1,375,000	2,000,000
Taxes	150,000	375,000	600,000	825,000	1,200,000
Total Expenses	640,000	1,600,000	2,560,000	3,400,000	4,400,000
Total Cost + Expenses	1,058,400	2,588,400	4,118,400	5,528,400	7,478,400

Executive Summary - Financial Statements

Year	1	2	3	4	5
Total Revenue	$ 1,200,000	$ 3,000,000	$ 4,800,000	$ 6,600,000	$ 9,600,000
Total Cost + Expenses	$ 1,058,400	$ 2,588,400	$ 4,118,400	$ 5,528,400	$ 7,478,400
PROFIT	$ 141,600	$ 411,600	$ 681,600	$ 1,071,600	$ 2,121,600

The company will be profitable from year 1. Based on all assumptions described before, the team project calculates the NPV (Net Profit Value) for the first 5 years of operation.

To be more conservator, the Risk tax of 10%-year was added to a normal 5%-year tax to calculate the present value of the cashflow.

To sum up, the **NPV is CAD $2,060,890.**