ParkEZ

Business Requirements Document

Project: ParkEZ Web Application

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# **Project Overview**

This document describes the business/user requirements for the ParkEZ that will provide the basis for the following project activities:

* Introducing business/user requirements
* Creating test plans and test specifications
* Identifying stakeholders
* Devising solutions to project tasks
* Produce an application that will monitor parking lots for both parking lot managers and people who are parking.
* Determining when the project is complete.
* Assessing the degree to which the project succeeded

# **Document Information**

## 2.1 Audience

|  |  |  |
| --- | --- | --- |
| Name | Business Group | Role |
| Parking Lot Operators | Parking Lot Management / Customer Support | Web Application Users |
| Parking Lot Patrons | Parking Lot Management / Customer Support | Web Application Users |
| Advertisers | Advertising / Sales Management | Web Application Users |
| Credit Card Venders / Bank | Finance Management | Partners / Suppliers |
| Police / Security | Parking Lot Management | Partners / Suppliers |

# **Business Opportunity**

## 3.1 Project Overview and Background

Parking customers benefit from ParkEZ because it shows customers how full parking lots are before they leave and may even recommend optimal parking spots. Business owners benefit from ParkEZ because they have a limited amount of parking in their parking lot, and they need as many parking lot spaces free as possible so customers can get to their business. ParkEZ helps business owners monitor their parking lot by calculating how full the parking lot is throughout the week and notifying the business owner if noncustomers are parked for extended periods of time. ParkEZ also saves recordings for a period, so if a recording is needed from a camera for a specific time for the business owner or the authorities it can easily be retrieved. This application ensures parking safety, but its major contribution to traffic congestion are the factors of making the parking experience faster, more convenient, and hassle-free..

## 3.2 Current State Analysis

## 3.3 Future State Objectives

## 3.4 Business Domain Model and Stakeholders

|  |
| --- |
| Stakeholders |
| Parking lot operators |
| Investors |
| Customers who bought advertisements |
| Police |
| Security |

Diagram

Description automatically generated

# **Business Requirements**

The primary users of the ParkEZ application are parking lot operators who will be able to create the account and subscribe to a monthly service that will offer parking lot monitoring. The portal will provide parking lot managers with the ability to access parking lot managing features and businesses who are advertising on ParkEZ access to manage their ads. Specifically, parking lot managers can see what the current occupancy of their parking lot is, they can see if cars are overparking and they can access past footage. Businesses who are advertising on ParkEZ can see statistics about their ads, add or change their ads, and select who is primarily targeted by their ads. Finally, people who wish to park their car can browse lots in the system to see occupancy and optimal spaces. Lot managers and advertising customers can manage their accounts (e.g. discontinue subscription, change password) on the account management page.

## 4.1 Details of Business Requirements

* + 1. **Parking Lot Management**
       1. Ability to log in
       2. Ability to access all parking lot feeds
       3. Ability to access all parking lots
       4. Ability to investigate technical issues
       5. Ability to connect camera feeds with accounts
       6. Ability to access archived footage for all feeds
    2. **Customer Support**
       1. Ability to log in
       2. Ability to access all parking lot feeds
       3. Ability to add, modify and remove ads
       4. Ability to access archived footage for all feeds
       5. Ability to create new accounts for lot managers and advertisers
    3. **Finance Management**
       1. Ability to see all current and expected subscription revenues
       2. Ability edit subscription billing, adding refunds or special charges
    4. **Advertising / Sales Management**
       1. Ability to log in
       2. Ability to add, modify and remove ads
       3. Ability to do monitor success of ads

* + 1. **Subscribed Parking Lot Operators**
       1. Ability to log in
       2. Ability to create account
       3. Ability to update password
       4. Ability to end subscription
       5. Ability to track occupancy of parking lot
       6. Ability to be notified of overparking instances
       7. Ability to access archived camera footage
       8. Ability to track large parking lots with multiple feeds
       9. Ability to read license plates if appropriate camera available
    2. **Car Parking Users**
       1. Ability to see parking availability of chosen lot
       2. Ability to see best parking space available
       3. Ability to access information from business webpage, ParkEZ’s index or both
       4. Ability to see layout of the parking lot
    3. **Subscribed Advertisers**
       1. Ability to log in
       2. Ability to create account
       3. Ability to update password
       4. Ability to end subscription
       5. Ability to add and modify ads.
       6. Ability to take down old ads.
       7. Ability to see impression statistics of posted ads
       8. Ability to see click count of posted ads
       9. Ability to set primary target of ads

# **Non-Functional Requirements**

|  |  |
| --- | --- |
| **Category** | **Requirements** |
| **Usability** | The application GUI will provide a user-friendly intuitive design with all the features clearly displayed for the user |
| **Usability** | The application navigation will be self-explanatory by clear and concise descriptions and names of each section, as well as features will be clearly evident by proper location and naming |
| **Usability** | Accessibility will be supported for the disabled users as well |
| **Performance** | The application will be supported on different operating systems and browsers, and should not impact the user’s system capabilities |
| **Performance** | The application will be available for 24/7 without any interruptions, and regular maintenances will be scheduled to support the application |
| **Performance** | The application will support the concurrency where the users will be able to simultaneously browse the app, login & subscribe, make payments, shop the products |
| **Performance** | The application will have short response time to all requests and all the features should be available and not impacted by latency |
| **Security** | The application will be using the automated daily & weekly audits to detect the vulnerabilities. |
| **Security** | The application will use HTTPS protocols for any data exchanges, enforced TLS for all the email communications, and other encryptions that will be maintained on the server |
| **Database** | The application will be using the MySQL database |
| **External System** | The application will be able to interface with the external data feeds from and to payment merchants, ad agencies, social media websites, etc… |

# **External Data Feeds**

* **Payment System**
  + Enables users to pay for both advertisement subscriptions and parking lot monitoring.
* **Ads Management System**

Enables local businesses to advertise to individuals who are using ParkEZ to check parking lot availability.

* **Client Website Access System**

A system that allows ParkEZ to provide parking lot data directly to businesses, so they can include information about the current state of their parking lot on their website live from ParkEZ.

# **Business Risks**

Our application is targeting a market of individuals who want to monitor their parking lot more effectively, individuals who want to park with ease and individuals who want to advertise to local populations. Other businesses with similar products exist. Competition risks will be mitigated by differentiating our services by covering the best quality service for the most reasonable price. We will also provide very easy set-up, where parking lot operators are assisted by our customer service team to get the service working with minimal setup. We will also constantly analyze the market and service performances and work to come up with new services to keep pace with the evolving market.

From the technical perspective the company can face the risk of the software malfunctioning and cyber-attacks. Machine learning is often unreliable in unusual conditions (e.g. if it snows and is windy in a certain way it may make the product malfunction). Common vulnerabilities to software like ours include SQL Injection (SQLI), Cross-Site Scripting (XSS), Traversal Directory (TRV), Local File Inclusion (LFI) and Remote File Inclusion (RFI), Shell Code Injection, Directory Indexing (DI), Open Redirect (ORED), File Discover (FD), Common Vulnerabilities & Exposures (CVE) and others. The application will be subjected to automated daily & weekly audits to detect the vulnerabilities. It will also use HTTPS protocols for any data exchanges, enforced TLS for all the email communications, and other encryptions that will be maintained on the server. There is also a risk of application not being able to adapt to the new technologies fast enough to support the applications and stay competitive on the market. Maintaining and reusing the requirements and following the AORA will help our business to adapt faster to changes and develop new and upgraded features with ease and without waste of time on starting the projects from scratch.