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**COMSATS University Islamabad (CUI)**

**Assignment-02**

**(CLO-2)**

Software Requirement Specification  
(SRS DOCUMENT)

for

**AI-Driven Customer Experience Management (CEM) Platform**

Version 2.0

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# Introduction

AI-Driven Customer Experience Management (CEM) Platform will provides services for the businesses to improve their customer experience. It has a specialty that uses AI tools and virtual reality to train customer service teams. It will track the interaction of customers through different platforms (through emails, social media, chatbots and surveys)and helps to improve better service quality and customer loyalty.

Using AI tools for better response time, providing insights and metrices to analyze sentiments of customers and give recommendations. It encourages business to build connections with customers to succeed in the long term and have an advantage over other competitors.

## **Purpose**

Developers, project managers, marketers, users, testers, and documentation writers are the target audience for this document. The document gives developers comprehensive details regarding AI-Driven Customer Experience Management (CEM) Platform design and development of modules. The project managers to coordinate with team members regarding timelines and resources. Marketing personnel to create effective strategies for promoting platform by highlighting its unique feature.

An overview of the platform is provided to users. Testers are provided with details regarding the test cases to ensure the platform meets quality standards. A template is provided to documentation writers so they can write the user manuals.

## **Scope**

The scope of this project document is to enhance customer interaction across multiple platforms. The primary focus of this platform is to leverage artificial intelligence and virtual reality to better analyze data and interactions. It has boundaries of digital interaction only. The core of platform is AI driven analytics, natural language processing and virtual reality. The key functionalities include customer interaction analytics from digital platforms and sentimental analysis that utilizes Natural language processing (NLP) to evaluate customer sentiments and behavior.

The project prioritizes security of customer data to protect sensitive information and ensure smooth operations on data. This platform will be flexible and focus on solutions that can be accessed through web applications and mobile phones.

**1. Data Gathering and Customer Interaction Analysis:**

* Objective: Gather data of customer interaction from different platforms.
* Description: Gather data from platforms like (through emails, social media, chatbots and surveys to analyze customer interactions and patterns to understand customer.

**2. AI Driven Tools:**

* Objective: For immersive experience of customers.
* Description: Stimulate AI responses to customers to improve response time and improving service quality.

**3. Sentimental Analysis:**

* + Objective: Uses Natural language Processor (NLP) for analyzing feedback.
  + Description: Sentiments can be analyzed from different platforms (through emails, social media, chatbots and surveys) as positive, negative or neutral.

**4. Personalized Recommendations:**

* Objective: Analyzing the customer data from the platforms to identify their interests.
* Description: By analyzing the interest of the customer, interested products or services will be offered and tailored deals.

**5. Customer Journey Map:**

* Objective: The platform will help to design map related customer journey through touch points.
* Description: This customer journey map would really help by analyzing the customer touch points regarding improvements in customer service.

**6. Larger Database for Decision Making:**

* Objective: Store a large amount of data that is coming from different platforms for decision making.
* Description: The data that is coming from different platforms will help analyze customer behavior and interests and will help businesses to make decisions regarding their customers to make them becoming a loyal customer.

**7. VR tools:**

* Objective: VR tools help customer teams to improve their service.
* Description: VR tools help give VR environment to customers team to better understand customer behaviors and how to response to that.

**8. Performance Metrices:**

• Objective: Display KPIs for accessing whether customer is satisfied or not.

• Description: Use different graph diagrams to track the progress of customers.

These functionalities will ensure the platform to provide solutions to businesses regarding their customer services and increasing customers by improving decisions and customers satisfaction.

## **Modules**

AI-Driven Customer Experience Management (CEM) Platformwill have the following modules:

## **Module 1: Profile Management:**

In this module, the organization will be able to register and manage the profile. It contains the following use cases:

***UC-1****:* User Registration

***UC-2:*** User Sign In

***UC-3****:* Update Profile

***UC-4:*** View Customers Profile

***UC-5:*** Manage Privacy Settings

***UC-6:*** Share Profile

***UC-7:*** Notification Management

***UC-8:*** Customers Profile

***UC-9:*** Delete Account

***UC-10:*** Log out

## **Module 2: Sentiment Engine Analysis**

In this module, the sentiments of customer would be analyzed either they are satisfied and what area of improvements are needed.

***UC-1****:* Feedback Collection from different Channels

***UC-2****:* Keyword Extractions

*UC-****3****:* Sentiment classification

***UC-4:*** Real Time Sentiments Monitoring

***UC-5****:* Alert Generations on negative sentiments

***UC-6:*** Perception Trend Analysis

***UC-7:*** Insights Generation

***UC-8:*** Reporting Sentiments

## **Module 3: Personalization**

In this module, to improve engagement, individualized experiences are developed using client data.

**UC-1:** Personalized Product Recommendations

**UC-2:** Real-Time Personalization Offers

**UC-3:** Customizable User Preferences

**UC-4:** Personalized Email Campaigns

**UC-5:** Guided Item Navigation

**UC-6:** Predictive Personalization

**UC-7:** Dynamic Web Content Display

**UC-8:** Cross-Selling Recommendations

**Module 4: Performance Metrics Dashboard**

In this module, performance is monitored by the tracking and presentation of customer satisfaction data.

**UC-1:** KPIs Monitoring

**UC-2:** Customer Retention Tracking

**UC-3:** Real-Time Performance Monitoring

**UC-4:** Churn Rate Analysis

**UC-5:** Metrics Comparison Over Time

**UC-6:** Areas for Improvement Identification

**UC-7:** Performance Reports Generation

**UC-8:** Dashboard Visualization of Metrics

## **Module 5: Customer Interaction Analysis**

This module is to analyze customer interactions that are coming from different platforms. The following use cases are present in this module:

***UC-1****:* Data Gathering from different channels

***UC-2****:* Data Analysis Insights

***UC-3****:* Customer Segmentation

***UC-4:*** Data Storage for Decision making

***UC-5****:* Behavior Tracking

***UC-6:*** Recommendations

***UC-7:*** Opportunity Identification

***UC-7:*** Reporting Customer interactions

## 

## **Module 6: Customer Journey Map**

The module will help design customer journey map based on its interaction through different channels. Contains the following use cases:

***UC-1:*** Create Journey Map

***UC-2****:* Update Customer Journey Map

***UC-****3:* Identify Pain Points

***UC-4:*** Analyze Customer Journey Map

***UC-5:*** Share Customer Journey Map

**Module 7: Loyalty and Reward Program**

In this module, customer loyalty is tracked and rewarded to enhance customer retention.

**UC-1:** Loyalty Program Creation

**UC-2:** Customer Loyalty Tracking

**UC-3:** Reward Points Allocation

**UC-4:** Notify Customers of Loyalty Status

**UC-5:** Personalized Offers for Loyal Customers

**UC-6:** Loyalty Program Effectiveness Analysis

**UC-7:** Loyalty Reports Generation

**UC-8:** Loyalty Program Integration with Sales Data

**Module 8: Pricing and Subscription**

In this module, subscription services are managed and tailored for customer engagement.

**UC-1:** VR-Based Subscription Offering

**UC-2:** Subscription Tier Management

**UC-3:** Notify Customers of Special Discounts

**UC-4:** Subscription Benefits Display

**UC-5:** Subscription Metrics Analysis

**UC-6:** Automated Renewal Notifications

**UC-7:** Seamless Payment System Integration

**UC-8:** 24/7 Subscriber Support

## **Overview**

Mostly this document contains requirement of system. The "AI-Driven Customer Experience Management (CEM) Platform " system is a comprehensive application designed to address the customer interactions. The system aims to analyze customer interactions to improve decision making and customer service. The key tools are AI and VR that really advantage the customer interactions and a competitive advantage over others. AI recommendations, and a user-friendly dashboard. The system targets better customer service to increase business growth and reputation.

# Overall Description

This section presents a high-level overview of the product and the environment in which it will be used, the anticipated users, and known constraints, assumptions, and dependencies.

## **Product Perspective**

The AI-Driven Customer Experience Management (CEM) Platform is an entirely new and exceptional product and is designed in such a way that it leverages from new technologies like VR , AI and NLP(Natural Language Processing) to provide Business with a light that will revolutionize their customer interactions system and providing them with sentiment analysis and personalized performance Dashboard that will gather data of their customers from different platforms and provide the with metrics and reports of how can they improve their customer experience. It provides scalable , intelligent and multi-channel customer engagement platform where they can even use VR to train their agents with real-life scenarios and address their weaknesses in understanding their customers and increase their satisfaction and loyalty.

**Below is the context diagram:**

A diagram of a company

Description automatically generated

**Figure 1.1: Context Diagram of AI-Driven CEM Platform**

## **User classes and characteristics**

Table 1: Shows user classes and characteristic for AI-Driven CEM Platform

|  |  |
| --- | --- |
| **User class** | **Description** |
| **Customer** | The main CEM platform users who communicate with the system via a variety of platforms (web, mobile, social media). Consumers want real-time deals, tailored experiences, and product suggestions. An estimated 10,000 prospective clients exist, of whom 5,000 are anticipated to use the site regularly each month. Although customers' demographics, levels of tech proficiency, and frequency of involvement can vary, over 70% of them communicate via cellphones. |
| **Admin** | Business analysts, customer experience managers, and marketing teams in charge of platform management are examples of admin users. They assess client engagement data, track performance indicators, and set up customized settings. It is predicted that there will be roughly fifty admin users who need training in order to use the analytics and reporting aspects of the system efficiently. |
| **Data Analyst** | Analyzing consumer contact data, producing insights, and formulating suggestions based on metrics are the main responsibilities of data analysts. The analytics dashboard will be used to monitor sentiment analysis, customer behavior, and the CEM platform's overall performance. It is anticipated that roughly ten data analysts will frequently use the system. |
| **Marketing Specialist** | The CEM platform is used by marketing professionals to manage promotions, create unique campaigns, and communicate with customers. They will use the platform to monitor the effectiveness of their efforts. An estimated 20 marketing professionals are expected to interact with the system each week. |
| **Support Staff** | Customers who are having problems with their accounts or the platform can get help from the support staff. |

## **Operating Environment**

**OE-1**: The system shall operate correctly with the following web browsers:

* **Google Chrome** (latest 3 versions).
* **Firefox** (latest 3 versions).
* **Microsoft Edge** (latest 3 versions).
* **Apple Safari** (latest 2 versions).
* This ensures compatibility with modern browsers across different devices and environments.

**OE-2**: The system shall be compatible with the following operating systems:

* **Windows 10** and above.
* **macOS 11** and above.
* **iOS 13** and above.
* **Android 10** and above.
* This ensures the platform is accessible to both desktop and mobile users.

**OE-3**: The system shall support mobile and tablet devices using responsive web design, ensuring optimal display and usability across devices with different screen sizes. This provides a seamless user experience regardless of device.

**OE-4**: The platform shall be hosted on cloud infrastructure such as **Amazon Web Services (AWS)** or **Microsoft Azure**, providing scalable server and database capacity to handle varying traffic loads. Cloud hosting ensures that the platform is scalable and secure.

**OE-5**: The system’s main database shall be hosted on a secure cloud service, such as **AWS RDS** or **Azure SQL Database**, with high availability, daily backups, and geographical redundancy. This ensures that data is secure, recoverable, and accessible from different regions.

**OE-6**: The system shall integrate with third-party APIs (such as **CRM systems**, **payment gateways**, and **social media platforms**) via secure **HTTPS** connections. These integrations allow the platform to extend its functionality by connecting with external systems globally.

## **Design and Implementation Constraints**

Below are the design and development constraints of system:

**CON-1**: The system shall use the current corporate standard **Amazon Web Services (AWS)** cloud platform.  
**CON-2**: The application must be developed using **Python** for back-end services and **JavaScript** (React.js or Vue.js) for the front-end.  
**CON-3**: The machine learning components shall use **TensorFlow** and **scikit-learn** libraries.  
**CON-4**: The system must comply with **GDPR** requirements for data protection and user privacy.

**CON-5**: Internet should be available to use services.

**CON-6**: Integratoin with cloud services.

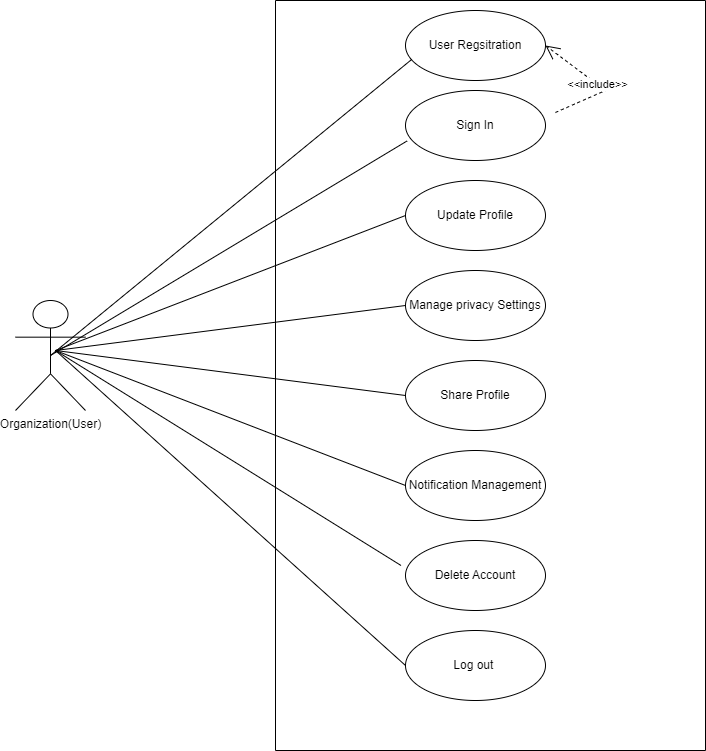
# Requirement Identifying Technique

As **Use case (use case diagram + detail use case)** is an effective technique for interactive end-user applications. So, the requirement identifying technique used for this project is use case. The use case diagrams and their tabular forms are given below.

## **Use Case(s) Diagram:**

Following are the use case diagrams of all the modules:

1. **Module 1: Profile Management:**

****

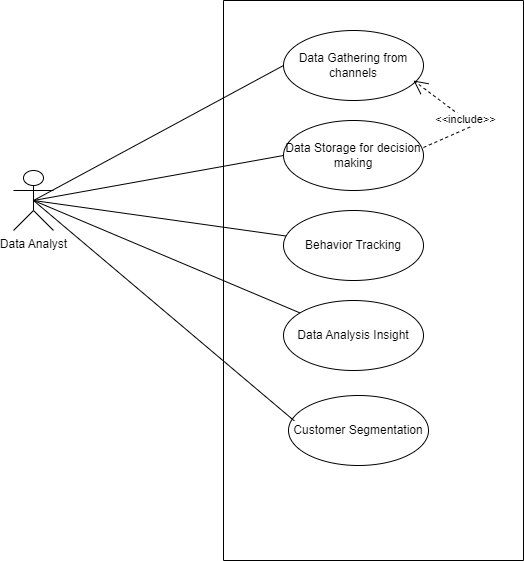
**Figure 3.1.1: UC Diagram Profile Management Module (Organization)**

**A screenshot of a computer screen

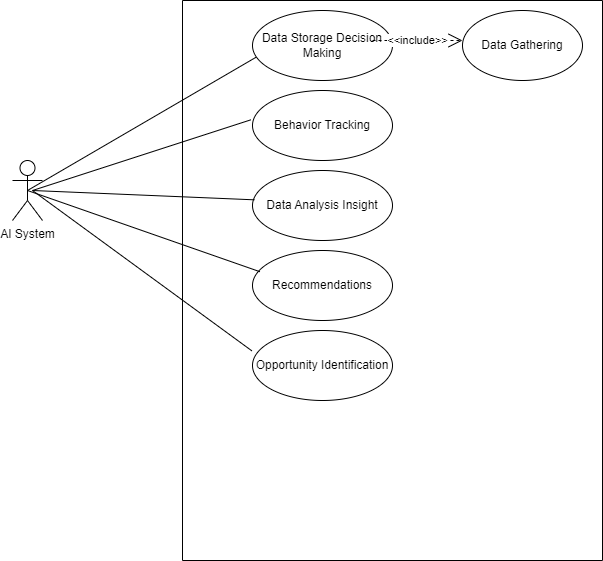
Description automatically generated**

**Figure 3.1.2: UC Diagram for Profile Management Module (Admin)**

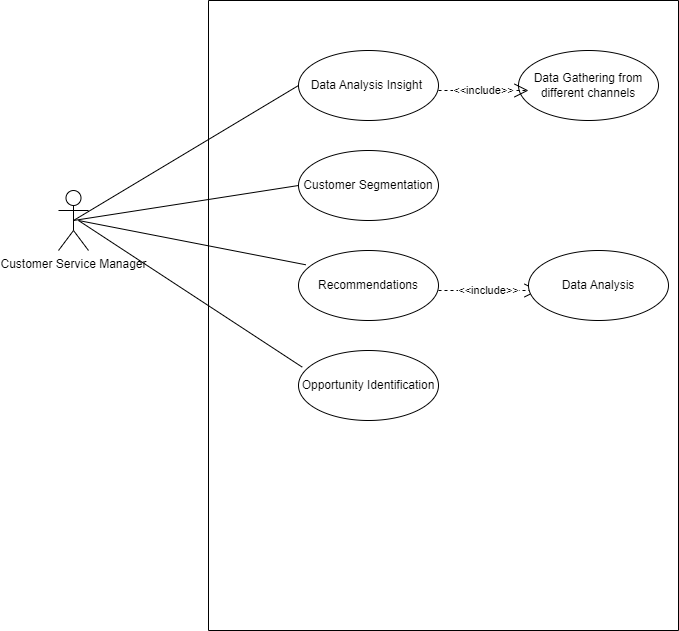
**Module 2: Pre-Processing**

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**Figure 3.2.1: UC Diagram for Module Customer Interaction Analysis ( Data Analyst Admin)**

****

**Figure 3.2.2: UC Diagram for Customer Interaction Analysis Module (AI system)**

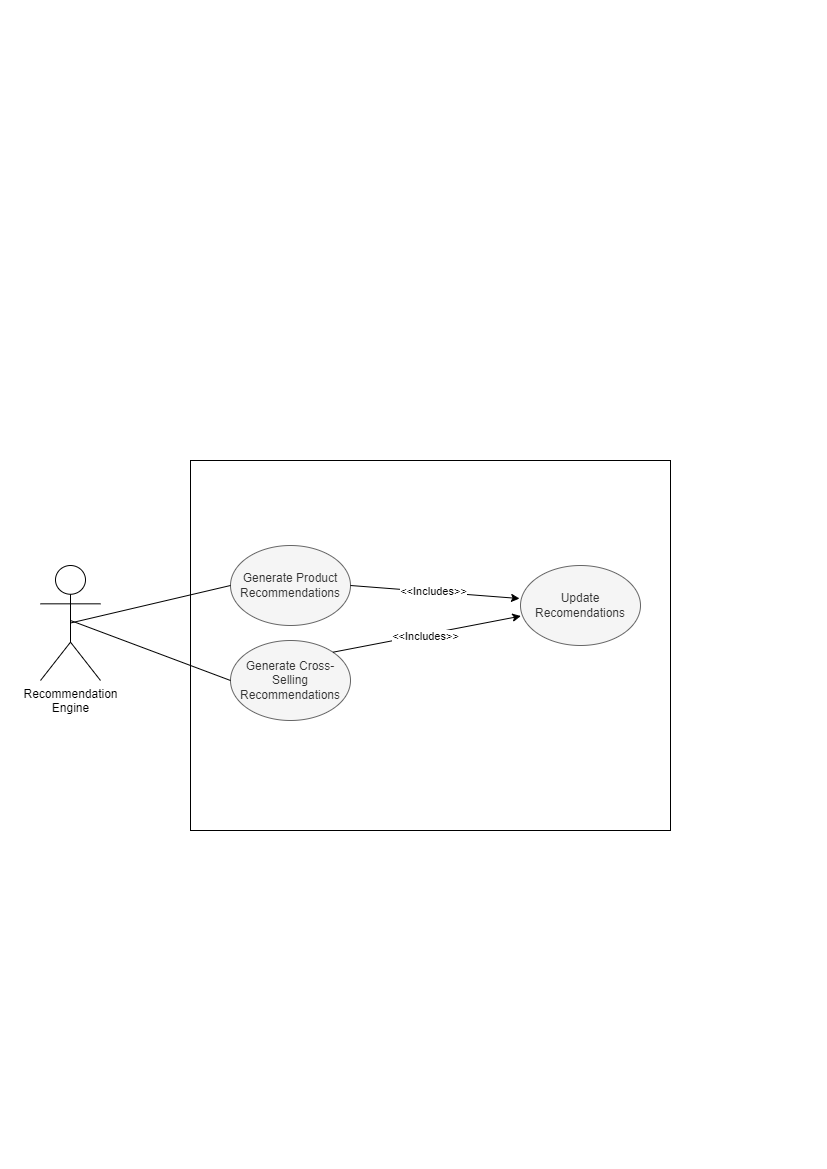
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**Figure 3.2.3: UC Diagram for Customer Interaction Analysis Module (Customer Service Manager)**

**Module 3: Personalization**

****

**Figure 3.3.1: UC Diagram for Customer (primary Actor)**

****

**Figure 3.3.2: UC Diagram for Recommendation Engine (Secondary)**

**A diagram of a diagram

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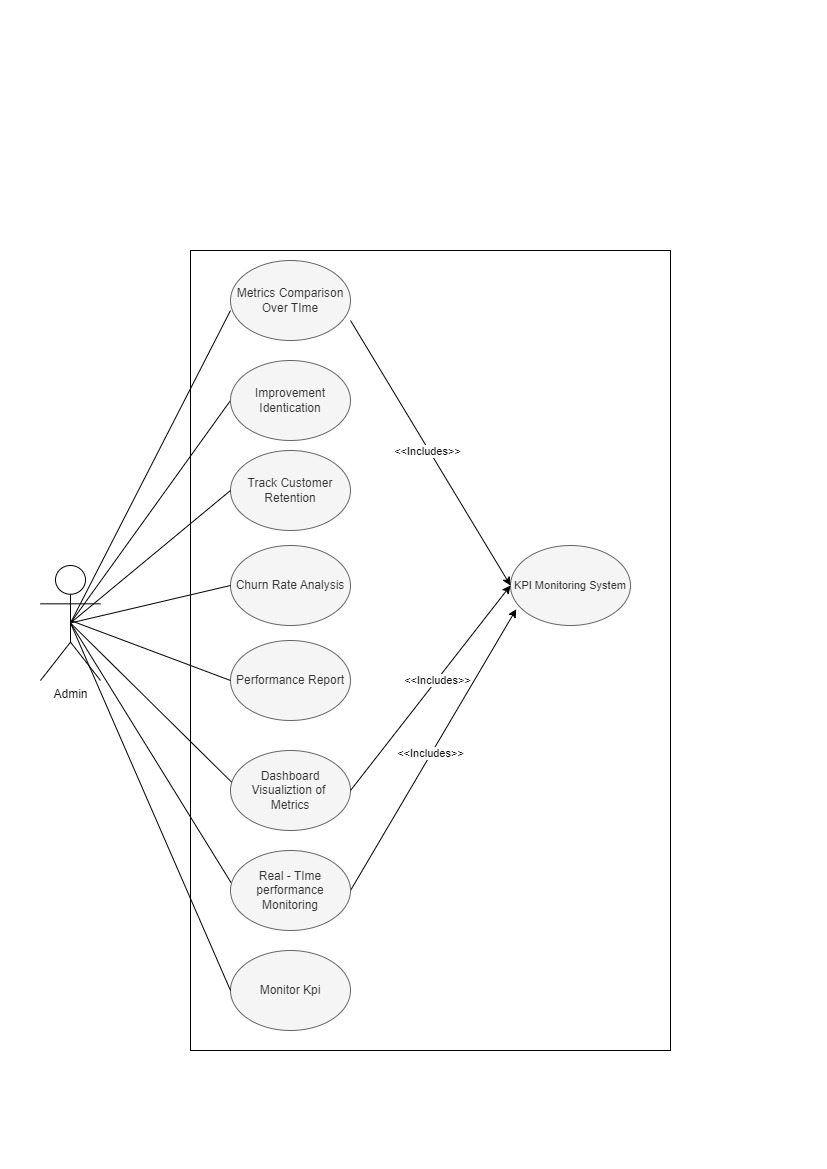
**Figure 3.3.3: UC Diagram for Marketing Team (Secondary)**

**A diagram of a diagram

Description automatically generated**

**Figure 3.3.4: UC Diagram for Personalization Engine (Secondary)**

**Module 4: Performance Metrics Dashboard:**

****

**Figure 3.4.1: UC Diagram for Admin(Primary)**

**A diagram of a person with a diagram

Description automatically generated**

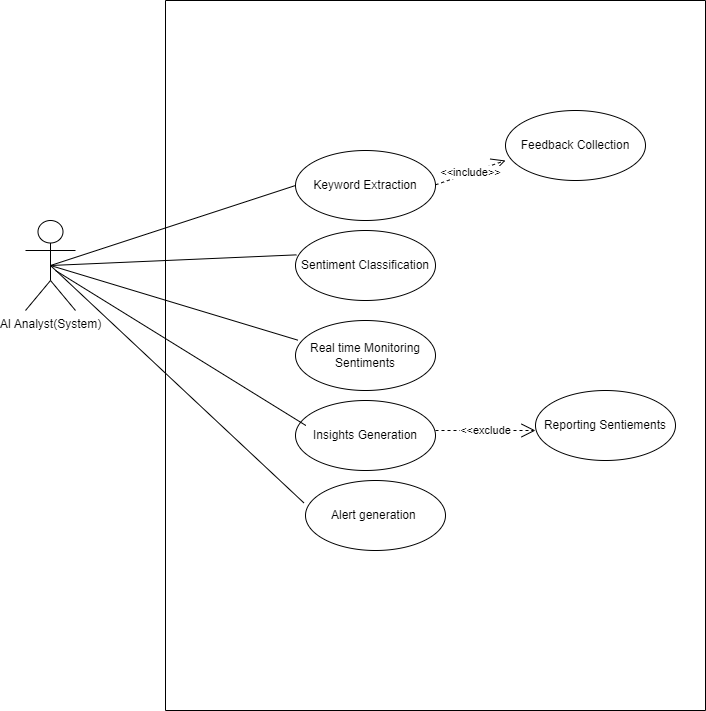
**Figure 3.4.2: UC Diagram for Dashboard System (Secondary)**

**A diagram of a diagram

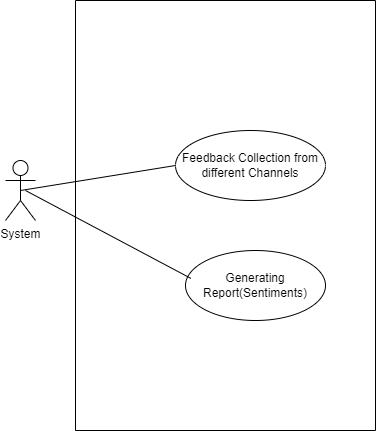
Description automatically generated**

**Figure 3.4.3: UC Diagram for Analytics System (Secondary)**

**Module 5: Sentimental Analysis:**

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**Figure 3.5.1: UC Diagram Sentimental Analysis Module (AI Analyst)**

****

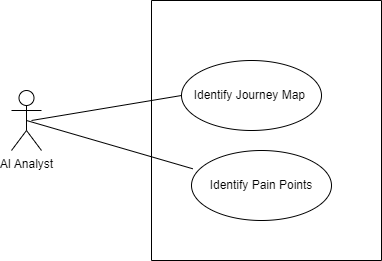
**Figure 3.5.2: UC Diagram Sentimental Analysis Module (system)**

**Module 6: Customer Journey map**

**A screenshot of a cell phone

Description automatically generated**

**Figure 3.6.1: UC Diagram for Customer Journey map Module (system(Organization)**

****

**Figure 3.6.2: UC Diagram for Customer Journey map Module (AI analyst)**

**Module 7: Loyalty And Reward Programs**

**A diagram of a diagram

Description automatically generated**

**Figure 3.7.1: UC Diagram for Admin (Primary)**

**A diagram of a diagram

Description automatically generated**

**Figure 3.7.2: UC Diagram for Customer (secondary)**

**Module 8: Pricing and Subscriptions**

**A close-up of a diagram

Description automatically generated**

**Figure 3.8: UC Diagram for Admin (Primary)**

**A diagram of a person's diagram

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**Figure 3.8.2: UC Diagram for Customer (Secondary)**

# Functional Requirements

## **Use Case(s) (List):**

Following is the list of the use cases of all the modules in this project:

1. **Module 1: Profile Management:**

|  |  |
| --- | --- |
| **M5-UC1** | User Registration |
| **M5-UC2** | User Sign In |
| **M5-UC3** | Update Profile |
| **M5-UC4** | View Customers Profile |
| **M5-UC5** | Manage Privacy Settings |
| **M5-UC6** | Share Profile |
| **M5-UC7** | Notification Management |
| **M5-UC8** | Customers Profile |
| **M5-UC9** | Delete Account |
| **M5-UC10** | Log out |

1. **Module 2: Customer Interaction Analysis:**

|  |  |
| --- | --- |
| **M1-UC1** | Data Gathering from different channels |
| **M1-UC2** | Data Analysis Insights |
| **M1-UC3** | Customer Segmentation |
| **M1-UC4** | Data Storage for Decision making |
| **M1-UC5** | Behavior Tracking |
| **M1-UC6** | Recommendations |
| **M1-UC7** | Opportunity Identification |

1. **Module 3: Personalization**

|  |  |
| --- | --- |
| **M3-UC1** | Personalized Product Recommendations |
| **M3-UC2** | Real-Time Personalization Offers |
| **M3-UC3** | Customizable User Preferences |
| **M3-UC4** | Personalized Email Campaigns |
| **M3-UC5** | Guided Item Navigation |
| **M3-UC6** | Predictive Personalization |
| **M3-UC7** | Dynamic Web Content Display |
| **M3-UC8** | Cross-Selling Recommendations |

1. **Module 4: Performance Metrics Dashboard**

|  |  |
| --- | --- |
| **M4-UC1** | KPIs Monitoring |
| **M4-UC2** | Customer Retention Tracking |
| **M4-UC3** | Real-Time Performance Monitoring |
| **M4-UC4** | Churn Rate Analysis |
| **M4-UC5** | Metrics Comparison Over Time |
| **M4-UC6** | Areas for Improvement Identification |
| **M4-UC7** | Performance Reports Generation |
| **M4-UC8** | Dashboard Visualization of Metrics |

**Module 5: Sentimental Analysis:**

|  |  |
| --- | --- |
| **M2-UC1** | Feedback Collection from different Channels |
| **M2-UC2** | Keyword Extractions |
| **M2-UC3** | Sentiment classification |
| **M2-UC4** | Real Time Sentiments Monitoring |
| **M2-UC5** | Alert Generations on negative sentiments |
| **M2-UC6** | Perception Trend Analysis |
| **M2-UC7** | Insights Generation |
| **M2-UC8** | Reporting Sentiments |

1. **Module 6: Customer Journey map:**

|  |  |
| --- | --- |
| **M6-UC1** | Create Journey Map |
| **M6-UC2** | Identify Journey Map |
| **M6-UC3** | Identify Pain Points |
| **M6-UC4** | Share Journey map |
| **M6-UC5** | Update Journey map |
| **M6-UC6** | Delete Journey map |

1. **Module 7: Loyalty and Reward Program**

|  |  |
| --- | --- |
| **M7-UC1** | Loyalty Program Creation |
| **M7-UC2** | Customer Loyalty Tracking |
| **M7-UC3** | Reward Points Allocation |
| **M7-UC4** | Notify Customers of Loyalty Status |
| **M7-UC5** | Personalized Offers for Loyal Customers |
| **M7-UC6** | Loyalty Program Effectiveness Analysis |
| **M7-UC7** | Loyalty Reports Generation |
| **M7-UC8** | Loyalty Program Integration with Sales Data |

1. **Module 8: Pricing and Subscription**

|  |  |
| --- | --- |
| **M8-UC1** | VR-Based Subscription Offering |
| **M8-UC2** | Subscription Tier Management |
| **M8-UC3** | Notify Customers of Special Discounts |
| **M8-UC4** | Subscription Benefits Display |
| **M8-UC5** | Subscription Metrics Analysis |
| **M8-UC6** | Automated Renewal Notifications |
| **M8-UC7** | Seamless Payment System Integration |
| **M8-UC8** | 24/7 Subscriber Support |



## **Use Case(s) (Tabular):**

Following are the tabular use cases of this application:

**Module 1: Profile Management**



Table 1.1: User Registration

## **User Registration**

|  |  |
| --- | --- |
| **Use Case ID:** | M1-UC1.1 |
| **Use Case Name:** | User Registration |
| **Actors:** | User (Organization) |
| **Description:** | Allow user to register providing necessary details. |
| **Trigger:** | Clicking the Sign-Up button after on landing page. |
| **Preconditions:** | User is not registered. |
| **Postconditions:** | Account is created. |
| **Normal Flow:** | 1. Display Sign Up form 2. Fill details(email , password etc.) 3. Validate details 4. Create new account. 5. Confirmation email |
| **Alternative Flows:** | User tries to register with existing email.   * An error indicating email is already in use. * User can log in instead. |
| **Exceptions:** | If the user will enter wrong information, it will return a error to enter correctly. |

## **User Sign In**

Table 1.3: User Sign In

|  |  |
| --- | --- |
| **Use Case ID:** | M1-UC1.2 |
| **Use Case Name** | User Sign In |
| **Actors** | User (Organization) |
| **Description** | Allow user to sign in using credentials |
| **Trigger** | User will click Sign In button on landing page. |
| **Preconditions** | PR-1: User must be online and connected to the internet.  PR-2: User needs to registered into the system. |
| **Postconditions** | User is logged in. |
| **Normal Flow** | 1. Display log in form 2. Enter credentials 3. System validates the information 4. Credentials correct, system access available   . |
| **Alternative Flows** | If user forgot password click on forgot password to reset |
| **Exceptions** | Credentials are incorrect, system shows an error message. |

## **Update Profile:**

## Table 1.3: **Update Profile:**

|  |  |
| --- | --- |
| **Use Case ID:** | M1-UC1.3 |
| **Use Case Name** | Update Profile |
| **Actors** | User (Organization) |
| **Description** | Allow user to modify personal information. |
| **Trigger** | User will click “Edit Profile” while viewing profile. |
| **Preconditions** | PR-1: User must be online and connected to the internet.  PR-2: User needs to logged in into the system. |
| **Postconditions** | User profile updated. |
| **Normal Flow** | 1. Go to profile page 2. Edit necessary information 3. Save changes 4. Updated Profile. |
| **Alternative Flows** | None |
| **Exceptions** | Server error:  Error message indicating temporary issue. |

## **View Customer Profile**

Table 1.4: View Customer Profile

|  |  |
| --- | --- |
| **Use Case ID:** | M1-UC1.4 |
| **Use Case Name** | View Customer Profile |
| **Actors** | User (Organization)/ Admin |
| **Description** | Allow user to view detail of customer. |
| **Trigger** | User will click “Customer name in customer list |
| **Preconditions** | PR-1: User must be online and connected to the internet.  PR-2: User needs to logged in into the system. |
| **Postconditions** | Customer profile displayed. |
| **Normal Flow** | 1. Go to customer profile section 2. Select profile 3. Display details |
| **Alternative Flows** | Profile is unavailable. |
| **Exceptions** | Server error:  Error message indicating temporary issue. |

## **Manage Privacy Settings**

Table 1.5: Manage Privacy Settings

|  |  |
| --- | --- |
| **Use Case ID:** | M1-UC1.5 |
| **Use Case Name** | Manage Privacy Settings |
| **Actors** | User (Organization) |
| **Description** | Allow user to adjust privacy. |
| **Trigger** | User will click “Privacy Settings” option in menu |
| **Preconditions** | PR-1: User must be online and connected to the internet.  PR-2: User needs to log in into the system. |
| **Postconditions** | Privacy Settings updated. |
| **Normal Flow** | 1. Go to customer profile section 2. Select privacy settings 3. Save changes 4. Update privacy settings |
| **Alternative Flows** | None |
| **Exceptions** | Server error:  Error message indicating temporary issue. |

## **Share Profile**

Table 1.6: Share Profile (s)

|  |  |
| --- | --- |
| **Use Case ID:** | M1-UC1.6 |
| **Use Case Name** | Share Profile |
| **Actors** | User (Organization) |
| **Description** | Allow user to shares profiles on social platforms. |
| **Trigger** | User will click “Share Profile” option in profile page |
| **Preconditions** | PR-1: User must be online and connected to the internet.  PR-2: User needs to log in into the system. |
| **Postconditions** | Profile is shared. |
| **Normal Flow** | 1. Go to customer profile section 2. Select share options 3. User confirm social platform 4. System share profile link |
| **Alternative Flows** | None. |
| **Exceptions** | Server error:  Error message indicating temporary issue. |

## **Notification Management**

Table 1.7: Notification Management

|  |  |
| --- | --- |
| **Use Case ID:** | M1-UC1.7 |
| **Use Case Name** | Notification Management |
| **Actors** | User (Organization) |
| **Description** | Allow user to manage notification preferences. |
| **Trigger** | User will click “Notification Settings ” option in profile menu. |
| **Preconditions** | PR-1: User must be online and connected to the internet.  PR-2: User needs to log in into the system. |
| **Postconditions** | Notifications are updated |
| **Normal Flow** | 1. Go to customer profile section 2. Select notifications settings 3. Save changes 4. System Update notifications settings |
| **Alternative Flows** | Disable all notifications   * User uncheck all notifications * System update. |
| **Exceptions** | Server error:  Error message indicating temporary issue. |

## **Customers Profile**

Table 1.8: Customers Profile

|  |  |
| --- | --- |
| **Use Case ID:** | M1-UC1.8 |
| **Use Case Name** | Customers Profile |
| **Actors** | Admin |
| **Description** | Admin will view and manage profiles data. |
| **Trigger** | Admin will click on “Customers” option in admin dashboard. |
| **Preconditions** | PR-1: User must be online and connected to the internet.  PR-2: User needs to log in into the system. |
| **Postconditions** | Customer profile displayed. |
| **Normal Flow** | 1. Admin navigates to customer section 2. Select customer profile 3. Display details |
| **Alternative Flows** | If no customers found display no customer profile available. |
| **Exceptions** | Server error:  Error message indicating temporary issue. |

## **Delete Account**

Table 1.9: Delete Account

|  |  |
| --- | --- |
| **Use Case ID:** | M1-UC1.9 |
| **Use Case Name** | Delete Account |
| **Actors** | User |
| **Description** | User will delete account temporarily or permanently. |
| **Trigger** | User click on Delete profile in account settings. |
| **Preconditions** | PR-1: User must be online and connected to the internet.  PR-2: User needs to log in into the system. |
| **Postconditions** | Customer account deleted |
| **Normal Flow** | 1. User go to account settings 2. Select the delete option 3. Confirm deletion 4. Account deleted |
| **Alternative Flows** | If customer cancel deletion process return back |
| **Exceptions** | Server error:  Error message indicating temporary issue. |

## **Log Out**

Table 1.10: Log Out

|  |  |
| --- | --- |
| **Use Case ID:** | M1-UC1.10 |
| **Use Case Name** | Log Out |
| **Actors** | User |
| **Description** | User will log out of the system. |
| **Trigger** | User click on “Log out ” button in account settings. |
| **Preconditions** | PR-1: User must be online and connected to the internet.  PR-2: User needs to log in into the system. |
| **Postconditions** | User is logged out |
| **Normal Flow** | 1. User go to account settings 2. Select the log out option 3. Confirm 4. Logged out |
| **Alternative Flows** | If logged out system display error. |
| **Exceptions** | Server error:  Error message indicating temporary issue. |

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1. **Module 2: Customer Interaction Analysis:**

## **Data Gathering**

Table 2.1: Data Gathering

|  |  |
| --- | --- |
| **Use Case ID:** | M2-UC2.1 |
| **Use Case Name** | Data Gathering |
| **Actors** | System |
| **Description** | Collect data from different channels. |
| **Trigger** | System “Connect with Channels”. |
| **Preconditions** | Customer interaction channels are integrated with the system |
| **Postconditions** | Data stored for further processing |
| **Normal Flow** | 1. System connect with all the customer interactions channels 2. Data extracted from channels 3. Data is organized 4. Data is used for further analyze. |
| **Alternative Flows** | If the channels is unavailable, display error and get from other channels. |
| **Exceptions** | Data extraction fail. |

## **Data Analysis Insights**

Table 2.2: Data Analysis Insights

|  |  |
| --- | --- |
| **Use Case ID:** | M2-UC2.2 |
| **Use Case Name** | Data Analysis Insights |
| **Actors** | Data Analyst |
| **Description** | Collect data from different channels to generate insights |
| **Trigger** | “Generate Insight” |
| **Preconditions** | Customer data is gathered and accessible. |
| **Postconditions** | Data will process for analyses. |
| **Normal Flow** | 1. System retrieves the data. 2. AI algorithms to analyze data 3. Reports of analyzed data |
| **Alternative Flows** | If data is incomplete, still generate insights. |
| **Exceptions** | Data analysis fail due to incomplete data. |

## **Customer Segmentation**

Table 2.3: Customer Segmentation

|  |  |
| --- | --- |
| **Use Case ID:** | M2-UC2.3 |
| **Use Case Name** | Customer Segmentation |
| **Actors** | Admin (System) |
| **Description** | Segment customer on the base of behaviors |
| **Trigger** | System will “Generate Segmentation” of customer data. |
| **Preconditions** | Customer data is gathered and insights are generated |
| **Postconditions** | Customer grouped based on behavior |
| **Normal Flow** | 1. System get the insights 2. Customer segmented based on behavior 3. Segment data stored for use in future |
| **Alternative Flows** | If segment rule not followed, not on basis of demographics. |
| **Exceptions** | System Fails to segment data |

## **Data Storage for decision making**

Table 2.4: Data Storage for decision making

|  |  |
| --- | --- |
| **Use Case ID** | M2-UC2.4 |
| **Use Case Name** | Data Storage for decision making |
| **Actors** | System |
| **Description** | Store data is analyzed for decision making |
| **Trigger** | System triggers stored data for decision making |
| **Preconditions** | Data is analyzed. |
| **Postconditions** | Data is used for decision making. |
| **Normal Flow** | 1. Data is stored 2. Data is analyzed 3. Data is use for decision making   . |
| **Alternative Flows** | Storage space is insufficient for making insights that help in decision making. |
| **Exceptions** | Data Storage fail due to less space |

## **Behavior Tracking**

Table 2.5: Behavior Tracking

|  |  |
| --- | --- |
| **Use Case ID** | M2-UC2.5 |
| **Use Case Name** | Behavior tracking |
| **Actors** | System (AI tool) |
| **Description** | Store data is analyzed for behavior of customers |
| **Preconditions** | Data is analyzed. |
| **Postconditions** | Customer behaviors tracked either they are satisfied with product or not |
| **Normal Flow** | 1. Data is stored 2. Data is analyzed 3. Data is use identify customer behavior. |
| **Alternative Flows** | Connection fail for tracking, connection is restored |
| **Exceptions** | System may crash so could not track customer behavior |

## **Recommendations**

Table 2.6 : Recommendations

|  |  |
| --- | --- |
| **Use Case ID** | M2-UC2.6 |
| **Use Case Name** | Recommendations |
| **Actors** | System (AI tool) |
| **Description** | Personalized recommendation on the behavior of customer. |
| **Preconditions** | Data is analyzed. |
| **Postconditions** | Data is used for giving recommendation to customers |
| **Normal Flow** | 1. Data is stored 2. Data is analyzed 3. Data is use for decision making 4. Tool will give recommendations to customers   . |
| **Alternative Flows** | Storage space is insufficient for making insights that help in giving recommendations |
| **Exceptions** | Recommendation fail due to algorithm not functioning |

## **Opportunity Identification**

Table 2.7: Opportunity Identification

|  |  |
| --- | --- |
| **Use Case ID** | M2-UC2.7 |
| **Use Case Name** | Opportunity Identification |
| **Actors** | System (AI tool) |
| **Description** | Store data is analyzed to identify the opportunity. |
| **Preconditions** | Data is analyzed. |
| **Postconditions** | Opportunities are identified. |
| **Normal Flow** | 1. Data is stored 2. Data is analyzed 3. Data is use identify customer behavior. 4. Opportunity is identified |
| **Alternative Flows** | Connection fail for tracking, connection is restored |
| **Exceptions** | System may crash so could not track data for opportunity identification |

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**Module 3: Personalization**

Below are the cases for Module-3.

## **Personalized Product Recommendations**

Table 3.1: Personalized Product Recommendations

|  |  |
| --- | --- |
| **Use Case ID:** | M3-UC3.1 |
| **Use Case Name** | Personalized Product Recommendations |
| **Actors** | **Primary Actor:** Customer  **Secondary Actors:** Recommendation Engine |
| **Description** | The system suggests products based on the customer’s purchase history and preferences. |
| Trigger | A customer views product recommendations on the platform. |
| Level | High |
| **Preconditions** | PRE-1: The customer has an active profile with stored purchase history.  - PRE-2: The recommendation engine is operational. |
| **Postconditions** | - POST-1: Relevant product suggestions are displayed to the customer.  - POST-2: The recommendation data is updated for future use. |
| **Normal Flow** | 1. The customer logs into their profile.  2. The system retrieves purchase history and preferences.  3. The recommendation engine processes the data.  4. Personalized product recommendations are displayed. |
| **Alternative Flows** | 1. The system recommends popular items based on general customer preferences. |
| **Exceptions** | 1. If the recommendation engine fails, the system defaults to showing popular products. |
| Business Rules | - BR-1: Only products available in stock are recommended. |
| Assumptions | - Assume that 70% of customers will receive relevant recommendations. |

## **Real-Time Personalization Offers**

Table 3.2: Real-Time Personalization Offers

|  |  |
| --- | --- |
| **Use Case ID:** | M3-UC3.2 |
| **Use Case Name** | Real-Time Personalization Offers |
| **Actors** | **Primary Actor:** Customer  **Secondary Actors:** Personalization Engine |
| Description | The system generates real-time personalized offers based on the customer’s browsing behavior. |
| Trigger | A customer browses products on the platform. |
| Level | High |
| **Preconditions** | - PRE-1: The personalization engine is operational.  - PRE-2: The customer is logged into their account. |
| **Postconditions** | - POST-1: Real-time offers are displayed to the customer. |
| **Normal Flow** | 1. The customer browses products on the platform.  2. The system monitors the customer’s behavior.  3. The personalization engine generates real-time offers.  4. Offers are displayed based on the customer’s browsing history. |
| **Alternative Flows** | 1. The system generates offers based on general behavior patterns. |
| **Exceptions** | 1. The system shows default promotional offers. |
| **Business Rules** | - BR-1: Offers are only valid during the current browsing session. |
| **Assumptions** | - Assume that 50% of customers will interact with real-time offers. |

## **Customizable User Preferences**

Table 3.3: Customizable User Preferences

|  |  |
| --- | --- |
| **Use Case ID:** | M3-UC3.3 |
| **Use Case Name** | Customizable User Preferences |
| **Actors** | **Primary Actor:** Customer  **Secondary Actors:** Preference Management System |
| **Description** | The system allows customers to customize their preferences for product recommendations. |
| **Trigger** | A customer accesses the preferences section of their account. |
| **Level** | Medium. |
| **Preconditions** | - PRE-1: The customer is logged into their account.  - PRE-2: The preference management system is operational. |
| **Postconditions** | - POST-1: The customer’s preferences are updated in the system. |
| **Normal Flow** | 1. The customer navigates to the preferences section.  2. The system displays current preferences.  3. The customer modifies their preferences.  4. The system saves the updated preferences. |
| **Alternative Flows** | 1. The system prompts the customer to set their preferences for the first time. |
| **Exceptions** | 1. If the update fails, the system notifies the customer and suggests retrying. |
| **Business Rules** | - BR-1: Only valid preference options can be selected. |
| **Assumptions** | Assume that customers will frequently update their preferences. |

## **Personalized Email Campaigns**

Table 3.4: Personalized Email Campaigns

|  |  |
| --- | --- |
| **Use Case ID:** | M3-UC3.4 |
| **Use Case Name** | Personalized Email Campaigns |
| **Actors** | **Primary Actor:** Marketing Team  **Secondary Actors:** Email Marketing System |
| **Description** | The system sends personalized email campaigns based on customer behavior and preferences. |
| **Trigger** | The marketing team initiates an email campaign. |
| **Level** | High. |
| **Preconditions** | -PRE-1: The email marketing system is operational.  - PRE-2: Customer preferences and behavior data are available. |
| **Postconditions** | - POST-1: Emails are sent to targeted customers. |
| **Normal Flow** | 1. The marketing team selects a campaign type.  2. The system retrieves customer data for targeting.  3. Personalized emails are generated based on customer data.  4. The system sends the emails to the targeted list. |
| **Alternative Flows** | None. |
| **Exceptions** | 1. If the sending fails, the system logs an error and retries later. |
| **Business Rules** | - BR-1: Emails must comply with anti-spam regulations. |
| **Assumptions** | - Assume that 80% of customers will open personalized emails. |

## **Guided Item Navigation**

Table 3.5 Guided Item Navigation

|  |  |
| --- | --- |
| **Use Case ID:** | M3-UC3.5 |
| **Use Case Name** | Guided Item Navigation |
| **Actors** | **Primary Actor**: Customer  **Secondary Actors:** Navigation System |
| **Description** | The system assists customers in navigating through product categories to find items of interest. |
| **Trigger** | A customer searches for a product on the platform. |
| **Level** | Medium |
| **Preconditions** | - PRE-1: The navigation system is operational.  - PRE-2: The customer is logged into their account. |
| **Postconditions** | - POST-1: The customer is guided to relevant product categories. |
| **Normal Flow** | 1. The customer initiates a search for a product.  2. The system analyzes search terms and preferences.  3. The system displays guided navigation options.  4. The customer selects a category and views available products. |
| **Alternative Flows** | 1. The system informs the customer that no recommendations are available. |
| **Exceptions** | 1. The system displays an error message if navigation fails. |
| **Business Rules** | - BR-1: Categories must be relevant to the customer’s preferences. |
| **Assumptions** | - Assume that customers appreciate guided navigation. |

## **Predictive Personalization**

Table 3.6: Predictive Personalization

|  |  |
| --- | --- |
| **Use Case ID:** | M3-UC3.6 |
| **Use Case Name** | Predictive Personalization |
| **Actors** | **Primary Actor:** Marketing Team  **Secondary Actors:** Predictive Analytics Engine |
| **Description** | The system uses predictive analytics to forecast customer needs and personalize experiences. |
| **Trigger** | A customer logs into their account or interacts with the platform. |
| **Level** | High. |
| **Preconditions** | - PRE-1: The predictive analytics engine is functional.  - PRE-2: Customer interaction data is available for analysis. |
| **Postconditions** | - POST-1: Personalized suggestions based on predictions are displayed. |
| **Normal Flow** | 1. The customer logs into their account.  2. The system analyzes interaction data and identifies patterns.  3. Predictive analytics generates recommendations.  4. The system displays personalized suggestions to the customer. |
| **Alternative Flows** | 1. The system defaults to displaying popular products. |
| **Exceptions** | 1. If the analytics engine fails, the system shows a notification. |
| **Business Rules** | - BR-1: Predictions must be based on at least 3 prior interactions. |
| **Assumptions** | - Assume that 65% of predictions will match customer interests. |

## **Dynamic Web Content Display**

Table 3.7: Dynamic Web Content Display

|  |  |
| --- | --- |
| **Use Case ID** | M3-UC3.7 |
| **Use Case Name** | Dynamic Web Content Display |
| **Actors** | Primary Actor: Customer  Secondary Actors: Web Content Management System |
| **Description** | The system dynamically updates web content based on customer preferences and interactions. |
| **Trigger** | A customer navigates through the website. |
| **Level** | Medium |
| **Preconditions** | - PRE-1: The web content management system is integrated with customer data. |
| **Postconditions** | - POST-1: Relevant content is displayed based on the customer's profile. |
| **Normal Flow** | 1. The customer visits the website.  2. The system retrieves customer profile data.  3. Dynamic content is generated based on preferences.  4. The customer views personalized content on the page. |
| **Alternative Flows** | 1. The system displays general content if no specific preferences are found. |
| **Exceptions** | 1. If the CMS fails, the system displays default content. |
| **Business Rules** | - BR-1: Content must be updated in real-time based on interactions. |
| **Assumptions** | - Assume that customers engage more with personalized content. |

## **Cross-Selling Recommendations**

Table 3.8: Cross-Selling Recommendations

|  |  |
| --- | --- |
| **Use Case ID** | M2-UC3.8 |
| **Use Case Name** | Cross-Selling Recommendations |
| **Actors** | Primary Actor: Customer  Secondary Actors: Recommendation Engine |
| **Description** | The system suggests complementary products based on the customer’s current selections. |
| **Trigger** | A customer adds a product to their cart. |
| **Level** | Medium |
| **Preconditions** | - PRE-1: The recommendation engine is operational.  - PRE-2: The customer has products in their cart. |
| **Postconditions** | - POST-1: Complementary product suggestions are displayed. |
| **Normal Flow** | 1. The customer adds a product to their cart.  2. The system retrieves related products from the database.  3. The recommendation engine generates cross-selling suggestions.  4. Suggested products are displayed on the cart page. |
| **Alternative Flows** | 1. The system informs the customer that no recommendations are available. |
| **Exceptions** | 1. If the engine fails, the system defaults to showing popular products. |
| **Business Rules** | - BR-1: Recommendations must be based on current market trends. |
| **Assumptions** | - Assume that 30% of customers will add suggested items to their cart. |

**Module 4: Performance Metrics Dashboard**

Below are the uses cases for Module-4

## **KPIs Monitoring**

Table 4.1: KPIs Monitoring

|  |  |
| --- | --- |
| **Use Case ID:** | M4-UC4.1 |
| **Use Case Name** | KPIs Monitoring |
| **Actors** | Primary Actor: Admin  Secondary Actors: Dashboard System |
| **Description** | The system monitors key performance indicators (KPIs) related to customer satisfaction, such as NPS and CSAT, and displays them on a dashboard for tracking performance in real time. |
| **Trigger** | The admin accesses the performance metrics dashboard. |
| **Level** | High |
| **Preconditions** | -PRE-1: The dashboard system is connected to various data sources.  - PRE-2: The admin has the necessary access privileges. |
| **Postconditions** | -POST-1: KPIs are displayed on the dashboard in real-time.  -POST-2: The KPI data is available for reporting purposes. |
| **Normal Flow** | 1. The admin logs into the dashboard system.  2. The system retrieves KPIs from multiple data sources.  3. The system processes and displays KPIs like NPS, customer retention, and satisfaction scores. |
| **Alternative Flows** | 1. The system indicates that some KPI data sources are unavailable.  2. The system continues to display available data, and the admin is notified. |
| **Exceptions** | 1. If the system fails to retrieve KPI data, it retries after 10 minutes. |
| **Business Rules** | - BR-1: KPI data should be updated in real-time to ensure accuracy. |
| **Assumptions** | - Assume that all necessary KPIs are tracked and integrated in the system. |

## **Customer Retention Tracking**

Table 4.2: Customer Retention Tracking

|  |  |
| --- | --- |
| **Use Case ID:** | M4-UC4.2 |
| **Use Case Name** | Customer Retention Tracking |
| **Actors** | Primary Actor: Admin  Secondary Actors: Customer Database |
| **Description** | The system tracks customer retention metrics and displays insights into customer loyalty and churn rates. |
| **Trigger** | The admin accesses the customer retention section of the dashboard. |
| **Level** | Medium |
| **Preconditions** | - PRE-1: The customer database is connected to the dashboard.  - PRE-2: The admin has sufficient access rights. |
| **Postconditions** | - POST-1: Customer retention metrics are displayed.  - POST-2: Retention insights are available for reporting. |
| **Normal Flow** | 1. The admin logs into the dashboard.  2. The system retrieves customer retention data from the database.  3. The retention metrics are displayed on the dashboard. |
| **Alternative Flows** | 1. The system notifies the admin of incomplete retention data.  2. The system continues displaying available retention metrics. |
| **Exceptions** | 1. The system logs an error and retries every 15 minutes. |
| **Business Rules** | - BR-1: Retention metrics should be updated daily. |
| **Assumptions** | - Assume that customer retention data is accurate and up-to-date. |

## **Real-Time Performance Monitoring**

Table 4.3: Real-Time Performance Monitoring

|  |  |
| --- | --- |
| **Use Case ID:** | M4-UC4.3 |
| **Use Case Name** | Real-Time Performance Monitoring |
| **Actors** | Primary Actor: Admin  Secondary Actors: Dashboard System |
| **Description** | The system provides real-time performance monitoring of customer satisfaction and operational efficiency. |
| **Trigger** | The admin opens the real-time monitoring section on the dashboard. |
| **Level** | High |
| **Preconditions** | - PRE-1: The dashboard system is operational and connected to live data sources. |
| **Postconditions** | - POST-1: Real-time performance data is displayed on the dashboard. |
| **Normal Flow** | 1. The admin logs into the system.  2. The system retrieves live data from various sources.  3. The system processes the data and displays real-time performance metrics. |
| **Alternative Flows** | 1. If there is a delay in data retrieval, the system informs the admin and continues to update as data becomes available. |
| **Exceptions** | 1. The system retries retrieving live data after 5 minutes. |
| **Business Rules** | - BR-1: Real-time data must be updated every minute. |
| **Assumptions** | - Assume that real-time data sources are reliable and continuous. |

## **Churn Rate Analysis**

Table 4.4: Churn Rate Analysis

|  |  |
| --- | --- |
| **Use Case ID:** | M4-UC4.4 |
| **Use Case Name** | Churn Rate Analysis |
| **Actors** | Primary Actor: Admin  Secondary Actors: Analytics Engine |
| **Description** | The system analyzes customer churn rates and displays trends in customer loss, providing insights into potential causes and solutions. |
| **Trigger** | The admin opens the churn analysis section on the dashboard. |
| **Level** | Medium |
| **Preconditions** | - PRE-1: The analytics engine is operational and connected to customer data. |
| **Postconditions** | - POST-1: Churn rate data is displayed with trends and insights. |
| **Normal Flow** | 1. The admin logs into the system.  2. The system retrieves and analyzes churn rate data.  3. The system displays trends and potential causes of churn. |
| **Alternative Flows** | 1. The system notifies the admin of missing data and continues with available data. |
| **Exceptions** | N/A |
| **Business Rules** | - BR-1: Churn data should be refreshed every 24 hours. |
| **Assumptions** | - Assume that customer churn patterns remain consistent over time. |

## **Metrics Comparison Over Time**

Table 4.5: Metrics Comparison Over Time

|  |  |
| --- | --- |
| **Use Case ID:** | M4-UC4.5 |
| **Use Case Name** | Metrics Comparison Over Time |
| **Actors** | Primary Actor: Admin  Secondary Actors: Historical Data System |
| **Description** | The system allows admins to compare performance metrics over different time periods to identify trends and progress. |
| **Trigger** | The admin selects different time periods for comparison. |
| **Level** | Medium |
| **Preconditions** | - PRE-1: Historical performance data is available in the system. |
| **Postconditions** | - POST-1: Comparison of metrics over the selected time periods is displayed. |
| **Normal Flow** | 1. The admin selects a time period for comparison.  2. The system retrieves historical performance data.  3. The system displays the comparison of metrics over time. |
| **Alternative Flows** | 1. The system notifies the admin of missing historical data and continues with available data. |
| **Exceptions** | 1. The system retries retrieval every 10 minutes. |
| **Business Rules** | - BR-1: Historical data must be maintained for at least 1 year. |
| **Assumptions** | - Assume that historical data is complete and accurate. |

## **Areas for Improvement Identification**

Table 4.6: Areas for Improvement Identification

|  |  |
| --- | --- |
| **Use Case ID:** | M4-UC4.6 |
| **Use Case Name** | Areas for Improvement Identification |
| **Actors** | Primary Actor: Admin  Secondary Actors: Analytics Engine |
| **Description** | The system identifies areas for improvement in customer service and operational performance based on performance data. |
| **Trigger** | The admin opens the improvement suggestions section on the dashboard. |
| **Level** | Medium |
| **Preconditions** | - PRE-1: The analytics engine is operational and has access to performance data. |
| **Postconditions** | - POST-1: Areas for improvement are identified and displayed to the admin. |
| **Normal Flow** | 1. The admin logs into the system.  2. The system analyzes performance data.  3. The system generates a list of areas that need improvement. |
| **Alternative Flows** | 1. The system informs the admin that no significant areas for improvement were detected. |
| **Exceptions** | 1. The system logs an error and retries analysis after 10 minutes. |
| **Business Rules** | - BR-1: Improvement suggestions must be generated based on key performance metrics. |
| **Assumptions** | - Assume that performance data is sufficient to detect areas for improvement. |

## **Performance Reports Generation**

Table 4.7: Performance Reports Generation

|  |  |
| --- | --- |
| **Use Case ID** | M4-UC4.7 |
| **Use Case Name** | Performance Reports Generation |
| **Actors** | **Primary Actor:** Admin  **Secondary Actors:** Reporting System |
| **Description** | The system generates detailed performance reports based on KPIs, customer satisfaction metrics, and retention data. |
| **Trigger** | The admin requests a performance report from the dashboard. |
| **Level** | High |
| **Preconditions** | - PRE-1: The reporting system is operational and connected to the data sources. |
| **Postconditions** | - POST-1: A detailed performance report is generated and available for download or viewing. |
| **Normal Flow** | 1. The admin selects the report type and time period.  2. The system retrieves relevant data for the report.  3. The system generates a performance report and displays it for review or download. |
| **Alternative Flows** | 1. The system flags the inconsistent data and informs the admin. |
| **Exceptions** | 1. The system logs an error and retries after 5 minutes. |
| **Business Rules** | - BR-1: Reports must include at least one performance metric. |
| **Assumptions** | - Assume that performance data is complete and up-to-date. |

## **Dashboard Visualization of Metrics**

Table 4.8: Dashboard Visualization of Metrics

|  |  |
| --- | --- |
| **Use Case ID** | M4-UC4.8 |
| **Use Case Name** | Dashboard Visualization of Metrics |
| **Actors** | Primary Actor: Admin  Secondary Actors: Visualization Engine |
| **Description** | The system visualizes performance metrics on a dashboard using graphs, charts, and tables for easy comprehension by admins. |
| **Trigger** | The admin accesses the metrics dashboard. |
| **Level** | High |
| **Preconditions** | - PRE-1: The visualization engine is integrated with performance data. |
| **Postconditions** | - POST-1: Metrics are visualized using graphs and charts on the dashboard. |
| **Normal Flow** | 1.The admin logs into the system.  2. The system retrieves performance data.  3. The system generates visual representations of the metrics.  4. The admin views and interacts with the visualized metrics. |
| **Alternative Flows** | - If data is delayed, the system informs the admin and continues to update as data is received. |
| **Exceptions** | 1. The system logs an error and retries after 5 minutes. |
| **Business Rules** | - BR-1: Visualizations must be updated in real-time for live data. |
| **Assumptions** | - Assume that visualizations are helpful for decision-making. |

**Module 5: Sentimental Analysis:**

**Use Cases:**

## **Feedback Collection**

Table 3.1: Feedback Collection

|  |  |
| --- | --- |
| **Use Case ID** | M3-UC3.1 |
| **Use Case Name** | Feedback Collection from Different Channels |
| **Actors** | User /System |
| **Description** | Collect data from different channels |
| **Trigger** | User click on “Submit” to submit feedback |
| **Preconditions** | System must be connected with all channels |
| **Postconditions** | Feedback is stored in database. |
| **Normal Flow** | 1. Feedback is given by user 2. Feedback data is stored in data base 3. This data is further analyzed.. |
| **Alternative Flows** | If feedback section is incomplete, notify user to complete. |
| **Exceptions** | Data storage failed if connection with channel disturbed. |

## **Keyword Extraction**

Table 3.2: Keyword Extraction

|  |  |
| --- | --- |
| **Use Case ID:** | M3-UC3.2 |
| **Use Case Name** | Keyword Extraction |
| **Actors** | AI System |
| **Description** | Enable the AI tool to extract the keywords that help in analyzing the information |
| **Trigger** | Feedback data to be analyze. |
| **Preconditions** | Feedback data is stored |
| **Postconditions** | Data stored from feedback will be analyzed for sentimental analysis. |
| **Normal Flow** | 1. User Enter the feedback 2. Data is stored 3. Keyword extracted for further analyzing |
| **Alternative Flows** | If keyword not extracted, try again. |
| **Exceptions** | .Extraction fail due to malfunction of AI tool |

## **Sentimental Classification**

Table 3.3: Sentimental Classification

|  |  |
| --- | --- |
| **Use Case ID:** | M3-UC3.3 |
| **Use Case Name** | Sentimental Classification |
| **Actors** | AI System |
| **Description** | AI tool will help analyze the sentiments of the customer |
| **Trigger** | Keyword extraction is completed. |
| **Preconditions** | Keyword extraction is completed successfully. |
| **Postconditions** | Sentiments are classified. |
| **Normal Flow** | 1. User Enter the feedback 2. Data is stored 3. Keyword extracted for further analyzing 4. Ai tool will classify the sentiments |
| **Alternative Flows** | If sentiments not classified, try again. |
| **Exceptions** | .Classification fails if malfunction with AI tool. |

## **Real time Monitoring**

Table 3.4: Real Time Monitoring

|  |  |
| --- | --- |
| **Use Case ID:** | M3-UC3.3 |
| **Use Case Name** | Real Time Monitoring |
| **Actors** | AI System/Admin |
| **Description** | AI tool will help giving response to the customer |
| **Trigger** | New feedback received. |
| **Preconditions** | Feedback received from different channels successfully. |
| **Postconditions** | Monitored feedback on real time and give responses. |
| **Normal Flow** | 1. User Enter the feedback 2. Data is stored 3. Feedback monitored on real time. |
| **Alternative Flows** | If no real time monitoring then queued for later. |
| **Exceptions** | .No monitor of feedback if malfunction with AI tool. |

## **Alerts Generation**

Table 3.5: Alert Generations

|  |  |
| --- | --- |
| **Use Case ID:** | M3-UC3.3 |
| **Use Case Name** | Alert Generation on Negative Sentiments |
| **Actors** | System/Admin |
| **Description** | Give alerts when negative feedback is given. |
| **Trigger** | Negative sentiments is classified |
| **Preconditions** | Feedback data is stored. |
| **Postconditions** | .Alert notifications sent to customer service team |
| **Normal Flow** | 1. User Enter the feedback 2. Data is stored 3. Feedback monitored on real time. 4. Alert on negative feedback |
| **Alternative Flows** | If alerts fails , then negative comments will be highlighted for later review |
| **Exceptions** | Notification not send if system is down. |

## **Trend Analysis**

Table 3.6: Trend Analysis

|  |  |
| --- | --- |
| **Use Case ID:** | M3-UC3.6 |
| **Use Case Name** | Trend Analysis |
| **Actors** | System/Admin |
| **Description** | Analyze sentimental trends over a time |
| **Trigger** | Larger data is collected |
| **Preconditions** | Feedback data is stored. |
| **Postconditions** | Trends would be analyzed. |
| **Normal Flow** | 1. User Enter the feedback 2. Data is stored 3. Feedback monitored on real time. 4. Data would be analyzed to see trends |
| **Alternative Flows** | If data is less, then wait over time |
| **Exceptions** | Analysis fails if data is not stored |

## **Insights Generation**

Table 3.7 : Insights Generation

|  |  |
| --- | --- |
| **Use Case ID:** | M3-UC3.7 |
| **Use Case Name** | Insights Generation |
| **Actors** | System |
| **Description** | Analyze data for getting insights. |
| **Trigger** | Analysis complete. |
| **Preconditions** | Analysis of customer interaction and feedback been evaluated. |
| **Postconditions** | Insights ready for decision making |
| **Normal Flow** | 1. Data is stored of all customer interactions 2. Data is analyzed 3. Sentiments of customer are evaluated 4. Hidden insights generation |
| **Alternative Flows** | If data is less, then wait over time |
| **Exceptions** | Analysis fails if data is not stored |

## **Sentiment Report**

Table 3.8: Sentiment Report

|  |  |
| --- | --- |
| **Use Case ID:** | M3-UC3.7 |
| **Use Case Name** | Sentiment Report |
| **Actors** | System/ User |
| **Description** | Analyze data for getting insights. |
| **Trigger** | Users click on “Generate Report “to generate report. |
| **Preconditions** | Analysis of customer interaction and feedback been evaluated, and insights have been generated |
| **Postconditions** | Sight has been generated. |
| **Normal Flow** | 1. Data is stored of all customer interactions 2. Sentiments are evaluated. 3. Sentiment report is generated. |
| **Alternative Flows** | If report not generated , it notify users to try again |
| **Exceptions** | Report fail if data is still being stored |

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**Module 6: Customer Journey Map**

Below are the uses cases for Module-

## **Create Journey Map**

Table 4.1: Create Journey Map

|  |  |
| --- | --- |
| **Use Case ID:** | M4-UC4.1 |
| **Use Case Name** | Create Journey Map |
| **Actors** | User |
| **Description** | Create customer journey map based on input and data analysis. |
| **Trigger** | Users click on “Create Journey Map “to create map. |
| **Preconditions** | User is logged in and have access to journey map |
| **Postconditions** | Journey Map has been generated. |
| **Normal Flow** | 1. Users select the profile of customer to generate customer journey map 2. Data is stored of all customer interactions 3. Journey map created |
| **Alternative Flows** | If customer data is missing, then system will extract the data. |
| **Exceptions** | Journey map creation fails if there is a database connectivity issue. |

## **Identify Journey map:**

Table 4.2: Identify Journey Map

|  |  |
| --- | --- |
| **Use Case ID:** | M4-UC4.2 |
| **Use Case Name** | Identify Journey Map |
| **Actors** | User |
| **Description** | Retrieve specific journey map on user Selection. |
| **Trigger** | Users selects a journey map from the list. |
| **Preconditions** | User is logged in and have access to journey maps |
| **Postconditions** | The selected journey map displayed that display a specific characteristic related thing. |
| **Normal Flow** | 1. Users open customer journey map 2. User select journey map from list 3. System retrieves the data and display on journey map. 4. Journey map created |
| **Alternative Flows** | If no data available for journey map, system display choose another map |
| **Exceptions** | System display an error if fails in processing journey map. |

## **Share Journey Map**

Table 4.:4 Share Journey Map

|  |  |
| --- | --- |
| **Use Case ID:** | M4-UC4.4 |
| **Use Case Name** | Share Journey Map |
| **Actors** | System/User |
| **Description** | Share the journey map with friends with friends and over different social platform. |
| **Trigger** | Users click on “Share Journey Map” button to share. |
| **Preconditions** | A journey map has been created |
| **Postconditions** | Journey map is shared among different platforms. |
| **Normal Flow** | 1. Users open customer journey map 2. User select to share among team members 3. System sends the journey map |
| **Alternative Flows** | None |
| **Exceptions** | System fails to share journey map due to connectivity issue. |

## **Update Journey Map**

Table 4.5: Update Journey Map

|  |  |
| --- | --- |
| **Use Case ID:** | M4-UC4.5 |
| **Use Case Name** | Update Journey Map |
| **Actors** | User |
| **Description** | Update the journey map by adding the new information. |
| **Trigger** | User click on “Update Journey map” for updating map |
| **Preconditions** | A journey map is selected for updating. |
| **Postconditions** | A journey map is updated and saved |
| **Normal Flow** | 1. Use select a journey map  2. User modifies the journey map.  System save the changes |
| **Alternative Flows** | N/A |
| **Exceptions** | Update fail if there is a internet connectivity issue |

## **Delete Journey Map**

Table 4.6: Delete Journey Map

|  |  |
| --- | --- |
| **Use Case ID:** | M4-UC4.6 |
| **Use Case Name** | Delete Journey Map |
| **Actors** | User |
| **Description** | Delete the journey map. |
| **Trigger** | User click on “Delete Journey map” for updating map |
| **Preconditions** | A journey map is selected for deletion. |
| **Postconditions** | A journey map is deleted |
| **Normal Flow** | 1. Use select a journey map  2. User select to delete the journey map.  System delete customer journey map |
| **Alternative Flows** | If suer cancel the deletion, the journey map not deleted |
| **Exceptions** | Deletion fails if database error during the process. |

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**Module 7: Loyalty and Reward Program**

Below are the uses cases for Module-7.

## **Loyalty Program Creation**

Table 7.1: Loyalty Program Creation

|  |  |
| --- | --- |
| **Use Case ID** | M7-UC7.1 |
| **Use Case Name** | Loyalty Program Creation |
| **Actors** | Primary Actor: Admin  Secondary Actors: Loyalty Program System |
| **Description** | The system allows admins to create and configure loyalty programs, including setting reward tiers and points allocation. Customers can enroll in the program and earn points for purchases and interactions. |
| **Trigger** | An admin initiates the creation of a new loyalty program. |
| **Level** | High |
| **Preconditions** | PRE-1: The loyalty program system is operational.  PRE-2: The admin has the appropriate access rights. |
| **Postconditions** | POST-1: A new loyalty program is created and activated.  POST-2: The loyalty program details are stored and made available for customer enrollment. |
| **Normal Flow** | 1. The admin logs into the loyalty program system.  2. The system prompts the admin to enter program details, including reward tiers and points allocation.  3. The admin reviews and saves the program.  4. The admin activates the program, making it available for customer enrollment. |
| **Alternative Flows** | The admin may choose to save the program as a draft instead of activating it immediately. |
| **Exceptions** | If the loyalty system is unavailable, the system logs an error and prompts the admin to retry later. |
| **Business Rules** | BR-1: A loyalty program must have at least one reward tier. |
| **Assumptions** | Assume that a majority of customers will participate in the loyalty program. |

## **Customer Loyalty Tracking**

Table 7.2: Customer Loyalty Tracking

|  |  |
| --- | --- |
| **Use Case ID** | M7-UC7.2 |
| **Use Case Name** | Customer Loyalty Tracking |
| **Actors** | Primary Actor: Admin  Secondary Actors: Customer Database |
| **Description** | The system tracks customer loyalty by monitoring their interactions, purchases, and accumulated loyalty points. |
| **Trigger** | The admin accesses the loyalty tracking dashboard. |
| **Level** | Medium |
| **Preconditions** | PRE-1: The customer database is integrated with the loyalty program system.  PRE-2: The admin has sufficient privileges to view customer loyalty data. |
| **Postconditions** | POST-1: The system displays the loyalty points and engagement data for each customer. |
| **Normal Flow** | 1. The admin logs into the system and navigates to the loyalty tracking section.  2. The system retrieves customer loyalty data, including points, purchase history, and engagement metrics.  3. The data is displayed for the admin to review. |
| **Alternative Flows** | If no loyalty data is available for a customer, the system informs the admin. |
| **Exceptions** | If the customer database is unavailable, the system logs an error and retries retrieval after 10 minutes. |
| **Business Rules** | BR-1: Loyalty points are updated in real-time with every customer purchase or engagement. |
| **Assumptions** | Assume that customer data in the database is accurate and up-to-date. |

## **Reward Points Allocation**

Table 7.3: Reward Points Allocation

|  |  |
| --- | --- |
| **Use Case ID** | M7-UC7.3 |
| **Use Case Name** | Reward Points Allocation |
| **Actors** | Primary Actor: Customer  Secondary Actors: Loyalty Program System |
| **Description** | The system allocates reward points to customers based on their purchases and interactions with the platform. |
| **Trigger** | A customer completes a purchase or engages in qualifying interactions. |
| **Level** | High |
| **Preconditions** | PRE-1: The loyalty program is active, and customers are enrolled in the program.  PRE-2: The customer completes a transaction or interaction that qualifies for points. |
| **Postconditions** | POST-1: The system allocates reward points to the customer's account. |
| **Normal Flow** | 1. The customer makes a qualifying purchase or completes an engagement action.  2. The system calculates the appropriate number of points.  3. The points are credited to the customer's loyalty account. |
| **Alternative Flows** | If the customer cancels the transaction, the system removes the points from their account. |
| **Exceptions** | If the system fails to allocate points, it retries the transaction within 5 minutes. |
| **Business Rules** | BR-1: Reward points are only allocated for qualifying transactions as defined by the program rules. |
| **Assumptions** | Assume that the majority of customers will accumulate points regularly. |

## **Notify Customers of Loyalty Status**

Table 7.4: Notify Customers of Loyalty Status

|  |  |
| --- | --- |
| **Use Case ID** | M7-UC7.4 |
| **Use Case Name** | Notify Customers of Loyalty Status |
| **Actors** | Primary Actor: Customer  Secondary Actors: Notification System |
| **Description** | The system sends notifications to customers about their loyalty status, including accumulated points, reward eligibility, and status updates. |
| **Trigger** | A customer reaches a new loyalty tier or accrues enough points to redeem rewards. |
| **Level** | Medium |
| **Preconditions** | PRE-1: The notification system is operational.  PRE-2: Customers are enrolled in the loyalty program. |
| **Postconditions** | POST-1: The customer receives a notification about their loyalty status. |
| **Normal Flow** | 1. The system detects that the customer has reached a new loyalty tier or accumulated enough points for rewards.  2. A notification is generated and sent to the customer via their preferred channel (email, SMS, app notification).  3. The customer reviews their updated loyalty status. |
| **Alternative Flows** | If the customer has opted out of notifications, the system logs the event but does not send a message. |
| **Exceptions** | If the notification system fails, the system retries sending the message after 5 minutes. |
| **Business Rules** | BR-1: Notifications must be sent within 24 hours of a loyalty status change. |
| **Assumptions** | Assume that most customers will actively monitor their loyalty status. |

## **Personalized Offers for Loyal Customers**

Table 7.5: Personalized Offers for Loyal Customers

|  |  |
| --- | --- |
| **Use Case ID** | M7-UC7.5 |
| **Use Case Name** | Personalized Offers for Loyal Customers |
| **Actors** | Primary Actor: Customer  Secondary Actors: Offer Engine |
| **Description** | The system generates and provides personalized offers to loyal customers based on their loyalty tier and purchasing habits. |
| **Trigger** | A customer reaches a specific loyalty tier or exhibits qualifying purchasing behavior. |
| **Level** | High |
| **Preconditions** | PRE-1: The loyalty program system and offer engine are operational. |
| **Postconditions** | POST-1: The customer receives personalized offers based on their loyalty status and purchase history. |
| **Normal Flow** | 1. The system identifies loyal customers eligible for personalized offers.  2. The offer engine generates personalized deals based on the customer's loyalty tier and purchasing behavior.  3. The offers are presented to the customer via their preferred communication channel. |
| **Alternative Flows** | If the customer declines the offer, the system logs the event and suggests future offers. |
| **Exceptions** | If the offer engine fails to generate offers, it retries within 10 minutes. |
| **Business Rules** | BR-1: Offers must be relevant to the customer's loyalty tier and purchase history. |
| **Assumptions** | Assume that personalized offers will improve customer engagement and loyalty. |

## **Loyalty Program Effectiveness Analysis**

Table 7.6: Loyalty Program Effectiveness Analysis

|  |  |
| --- | --- |
| **Use Case ID** | M7-UC7.6 |
| **Use Case Name** | Loyalty Program Effectiveness Analysis |
| **Actors** | Primary Actor: Admin  Secondary Actors: Analytics Engine |
| **Description** | The system analyzes the effectiveness of the loyalty program by evaluating customer engagement, redemption rates, and overall program success. |
| **Trigger** | The admin accesses the loyalty program analysis section on the dashboard. |
| **Level** | Medium |
| **Preconditions** | PRE-1: The analytics engine is operational and connected to loyalty program data. |
| **Postconditions** | POST-1: The system provides insights into the success and areas for improvement of the loyalty program. |
| **Normal Flow** | 1. The admin logs into the analytics dashboard.  2. The system retrieves data related to customer engagement, reward redemption, and program usage.  3. The analytics engine processes the data and generates a report on the loyalty program's effectiveness. |
| **Alternative Flows** | If no significant data is available, the system informs the admin and provides suggestions for gathering more data. |
| **Exceptions** | If the analytics engine fails, the system logs an error and retries analysis within 15 minutes. |
| **Business Rules** | BR-1: The program must be evaluated quarterly to ensure it meets company objectives. |
| **Assumptions** | Assume that loyalty program data will be sufficient to measure effectiveness. |

## **Loyalty Reports Generation**

Table 7.7: Loyalty Reports Generation

|  |  |
| --- | --- |
| **Use Case ID** | M7-UC7.7 |
| **Use Case Name** | Loyalty Reports Generation |
| **Actors** | Primary Actor: Admin  Secondary Actors: Reporting System |
| **Description** | The system generates detailed reports on the loyalty program, including customer participation, reward redemption rates, and overall engagement metrics. |
| **Trigger** | The admin requests a loyalty program report from the dashboard. |
| **Level** | High |
| **Preconditions** | PRE-1: The reporting system is operational and connected to loyalty data sources. |
| **Postconditions** | POST-1: The system generates a detailed report on the loyalty program and provides it for review or download. |
| **Normal Flow** | 1. The admin selects the report type and time period for the report.  2. The system retrieves loyalty program data from the relevant sources.  3. The system generates the report and presents it for review or download. |
| **Alternative Flows** | If data is missing or incomplete, the system notifies the admin and generates the report with available data. |
| **Exceptions** | If the report generation fails, the system retries after 5 minutes. |
| **Business Rules** | BR-1: Reports must include at least one metric related to customer loyalty. |
| **Assumptions** | Assume that loyalty program data is accurate and up-to-date. |

## **Loyalty Program Integration with Sales Data**

Table 7.8: Loyalty Program Integration with Sales Data

|  |  |
| --- | --- |
| **Use Case ID** | M7-UC7.8 |
| **Use Case Name** | Loyalty Program Integration with Sales Data |
| **Actors** | Primary Actor: Admin  Secondary Actors: Sales System |
| **Description** | The system integrates loyalty program data with sales data to provide a comprehensive view of customer behavior, loyalty, and purchasing habits. |
| **Trigger** | The admin initiates the integration of loyalty and sales data for analysis. |
| **Level** | Medium |
| **Preconditions** | PRE-1: The sales system and loyalty program are integrated and operational. |
| **Postconditions** | POST-1: The loyalty program data is successfully combined with sales data to provide insights into customer purchasing behavior and loyalty trends. |
| **Normal Flow** | 1. The admin accesses the data integration section of the system.  2. The system retrieves relevant data from both the sales and loyalty systems.  3. The data is combined and displayed on the dashboard for analysis. |
| **Alternative Flows** | If sales data is missing, the system notifies the admin and proceeds with available data. |
| **Exceptions** | If data integration fails, the system retries within 10 minutes. |
| **Business Rules** | BR-1: Sales and loyalty data must be integrated daily for accurate reporting. |
| **Assumptions** | Assume that loyalty program data and sales data are accurate and complete. |

**Module 8: Pricing and Subscription**

Below are the uses cases for Module-8.

## **VR-Based Subscription Offering**

Table 8.1: VR-Based Subscription Offering

|  |  |
| --- | --- |
| **Use Case ID** | M8-UC8.1 |
| **Use Case Name** | VR-Based Subscription Offering |
| **Actors** | Primary Actor: Customer  Secondary Actors: Subscription System |
| **Description** | The system offers VR-based subscription services to customers based on their preferences and provides access to exclusive VR content. |
| **Trigger** | A customer views subscription plans on the platform. |
| **Level** | Medium |
| **Preconditions** | PRE-1: The subscription system is operational.  PRE-2: The customer is logged into the platform. |
| **Postconditions** | POST-1: The customer selects a subscription plan and the payment is processed. |
| **Normal Flow** | 1. The customer views available subscription plans.  2. The system retrieves available VR-based subscriptions.  3. The customer selects a plan and provides payment details.  4. The subscription is confirmed and activated. |
| **Alternative Flows** | The customer may choose a free trial option if available, rather than subscribing immediately. |
| **Exceptions** | If the payment fails, the system prompts the customer to retry or use another payment method. |
| **Business Rules** | BR-1: Subscription renewals must be processed automatically unless canceled by the customer. |
| **Assumptions** | Assume that 40% of customers will choose a VR-based subscription. |
| **Business Rules** | Diagnostic analysis must be completed for providing results. |
| **Assumptions** | Users can understand and interpret diagnostic results. |

## **Subscription Tier Management**

Table 8.2: Subscription Tier Management

|  |  |
| --- | --- |
| **Use Case ID** | M8-UC8.2 |
| **Use Case Name** | Subscription Tier Management |
| **Actors** | Primary Actor: Admin  Secondary Actors: Subscription System |
| **Description** | The system allows the admin to create, modify, and manage different subscription tiers, each with varying levels of access and benefits. |
| **Trigger** | The admin initiates the management of subscription tiers. |
| **Level** | High |
| **Preconditions** | PRE-1: The subscription system is operational.  PRE-2: The admin has the appropriate access rights. |
| **Postconditions** | POST-1: Subscription tiers are created, updated, or deleted based on admin input. |
| **Normal Flow** | 1. The admin logs into the subscription management system.  2. The system prompts the admin to create, update, or delete subscription tiers.  3. The changes are saved and made available to customers. |
| **Alternative Flows** | If the admin chooses to update an existing tier, the system prompts the admin to confirm any impacts on current subscribers. |
| **Exceptions** | If the subscription management system is unavailable, the system logs an error and prompts the admin to retry later. |
| **Business Rules** | BR-1: Each subscription tier must offer distinct benefits to customers. |
| **Assumptions** | Assume that tier changes will impact current subscribers |

## **Notify Customers of Special Discounts**

Table 8.3: Notify Customers of Special Discounts

|  |  |
| --- | --- |
| **Use Case ID** | M8-UC8.3 |
| **Use Case Name** | Notify Customers of Special Discounts |
| **Actors** | Primary Actor: Customer  Secondary Actors: Notification System |
| **Description** | The system sends notifications to customers regarding special discounts on subscriptions, encouraging them to upgrade or renew their plans. |
| **Trigger** | The system detects a special discount offer or campaign. |
| **Level** | Medium |
| **Preconditions** | PRE-1: The notification system is operational.  PRE-2: The customer has opted in to receive notifications. |
| **Postconditions** | POST-1: The customer receives a notification about the special discount offer. |
| **Normal Flow** | 1. The system detects an active discount campaign.  2. A notification is generated and sent to eligible customers.  3. The customer views the notification and decides whether to take advantage of the offer. |
| **Alternative Flows** | If the customer has opted out of promotional notifications, the system logs the event but does not send the message. |
| **Exceptions** | If the notification system fails, the system retries sending the message after 5 minutes. |
| **Business Rules** | BR-1: Discount notifications must be sent within the campaign period. |
| **Assumptions** | Assume that most customers will act on special discount notifications. |

## **Subscription Benefits Display**

Table 8.4: Subscription Benefits Display

|  |  |
| --- | --- |
| **Use Case ID** | M8-UC8.4 |
| **Use Case Name** | Subscription Benefits Display |
| **Actors** | Primary Actor: Customer  Secondary Actors: Subscription System |
| **Description** | The system displays the benefits of various subscription tiers, allowing customers to compare and select the plan that best suits their needs. |
| **Trigger** | A customer views the subscription plans page. |
| **Level** | Medium |
| **Preconditions** | PRE-1: The subscription system is integrated with the benefits module. |
| **Postconditions** | POST-1: The customer views the benefits of each subscription tier and makes a selection. |
| **Normal Flow** | 1. The customer navigates to the subscription plans page.  2. The system retrieves the benefits for each tier.  3. The customer compares the tiers and selects the most appropriate one. |
| **Alternative Flows** | If the customer is unsure about a specific plan, they can request further information via customer support. |
| **Exceptions** | If the system fails to retrieve benefits, it displays a default message and prompts the customer to try again later. |
| **Business Rules** | BR-1: Subscription benefits must be clearly outlined for each tier. |
| **Assumptions** | Assume that customers will select a plan based on the displayed benefits. |

## **Subscription Metrics Analysis**

Table 8.5: Subscription Metrics Analysis

|  |  |
| --- | --- |
| **Use Case ID** | M8-UC8.5 |
| **Use Case Name** | Subscription Metrics Analysis |
| **Actors** | Primary Actor: Admin  Secondary Actors: Analytics Engine |
| **Description** | The system analyzes subscription metrics such as renewals, upgrades, and cancellations to provide insights into customer behavior and subscription plan performance. |
| **Trigger** | The admin accesses the subscription analytics dashboard. |
| **Level** | Medium |
| **Preconditions** | PRE-1: The analytics engine is operational and connected to subscription data. |
| **Postconditions** | POST-1: The system provides insights into subscription metrics, helping the admin make decisions on pricing and plan offerings. |
| **Normal Flow** | 1. The admin logs into the analytics dashboard.  2. The system retrieves subscription-related data.  3. The system processes and displays insights such as renewal rates, upgrade trends, and cancellation rates. |
| **Alternative Flows** | If data for certain metrics is incomplete, the system notifies the admin and proceeds with available data. |
| **Exceptions** | If the analytics engine fails, the system logs an error and retries after 15 minutes. |
| **Business Rules** | BR-1: Subscription metrics must be refreshed daily for accurate reporting. |
| **Assumptions** | Assume that the majority of subscription data will be complete and up-to-date. |

## **Automated Renewal Notifications**

Table 8.6: Automated Renewal Notifications

|  |  |
| --- | --- |
| **Use Case ID** | M8-UC8.6 |
| **Use Case Name** | Automated Renewal Notifications |
| **Actors** | Primary Actor: Customer  Secondary Actors: Notification System |
| **Description** | The system automatically sends reminders to customers when their subscription is nearing expiration, encouraging them to renew their plan. |
| **Trigger** | A customer’s subscription is close to expiration. |
| **Level** | High |
| **Preconditions** | PRE-1: The notification system is operational.  PRE-2: The customer is enrolled in a subscription plan. |
| **Postconditions** | POST-1: The customer receives a renewal reminder. |
| **Normal Flow** | 1. The system detects that a customer’s subscription is nearing its expiration date.  2. A renewal reminder is generated and sent to the customer via their preferred communication channel.  3. The customer reviews the notification and proceeds with the renewal process. |
| **Alternative Flows** | If the customer has opted for auto-renewal, no manual reminder is sent. |
| **Exceptions** | If the notification system fails, the system retries sending the reminder after 5 minutes. |
| **Business Rules** | BR-1: Renewal notifications must be sent at least 7 days before the subscription expires. |
| **Assumptions** | Assume that most customers will renew their subscription upon receiving a reminder. |

## **Seamless Payment System Integration**

Table 8.7: Seamless Payment System Integration

|  |  |
| --- | --- |
| **Use Case ID** | M8-UC8.7 |
| **Use Case Name** | Seamless Payment System Integration |
| **Actors** | Primary Actor: Customer  Secondary Actors: Payment Gateway |
| **Description** | The system ensures that the payment process for subscription purchases and renewals is smooth and integrates with multiple payment gateways. |
| **Trigger** | A customer initiates a payment for a subscription. |
| **Level** | High |
| **Preconditions** | PRE-1: The payment gateway is integrated with the subscription system. |
| **Postconditions** | POST-1: The customer successfully completes the payment for their subscription. |
| **Normal Flow** | 1. The customer selects a subscription plan and proceeds to checkout.  2. The system integrates with the payment gateway to process the payment.  3. The payment is processed, and the subscription is activated or renewed. |
| **Alternative Flows** | If the customer’s payment fails, they are prompted to retry or use a different payment method. |
| **Exceptions** | If the payment gateway is down, the system logs an error and retries after 5 minutes. |
| **Business Rules** | BR-1: Payment transactions must be secure and comply with industry standards. |
| **Assumptions** | Assume that the majority of payments will be processed without issues. |

## **24/7 Subscriber Support**

Table 8.8: 24/7 Subscriber Support

|  |  |
| --- | --- |
| **Use Case ID** | M8-UC8.8 |
| **Use Case Name** | 24/7 Subscriber Support |
| **Actors** | Primary Actor: Customer  Secondary Actors: Customer Support System |
| **Description** | The system provides round-the-clock support to subscribers for resolving issues related to subscription management, payments, or access. |
| **Trigger** | A customer contacts support for assistance with their subscription. |
| **Level** | High |
| **Preconditions** | PRE-1: The customer support system is operational and integrated with subscription data. |
| **Postconditions** | POST-1: The customer’s issue is resolved, or a support ticket is created for further assistance. |
| **Normal Flow** | 1. The customer contacts support through the provided channels (email, chat, or phone).  2. The support system retrieves the customer’s subscription details.  3. The support agent assists the customer or escalates the issue if necessary. |
| **Alternative Flows** | If the issue is not resolved immediately, the system generates a support ticket for further investigation. |
| **Exceptions** | If the support system is down, the customer is informed and provided with alternative contact methods. |
| **Business Rules** | BR-1: Subscriber issues must be resolved within 24 hours or escalated for further action. |
| **Assumptions** | Assume that most subscriber issues will be resolved within the first contact. |

## **Functional Requirement :**

Functional requirements (tabular form) of all the modules are given below:

## **Module 1: Profile Management**

**M1-UC1: User Registration**

Table 1.1.1: Enter name

|  |  |
| --- | --- |
| **Identifier** | M1-UC1-FR1 |
| **Title** | Enter name |
| **Requirement** | User is to enter full name during registration. |
| **Source** | System Design |
| **Rationale** | Essential for information about user. |
| **Dependencies** | Internet connection, Invalid input |
| **Priority** | High |

Table 1.1.2: Enter Email

|  |  |
| --- | --- |
| **Identifier** | M1-UC1-FR2 |
| **Title** | Enter name |
| **Requirement** | User should enter the valid email address. |
| **Source** | System Design |
| **Rationale** | Email account will be verified |
| **Dependencies** | Email validation |
| **Priority** | High |

Table 1.1.3: Enter Password

|  |  |
| --- | --- |
| **Identifier** | M1-UC1-FR3 |
| **Title** | Enter password |
| **Requirement** | User will to set a secure password( of 8 characters) during registration |
| **Source** | Security Design |
| **Rationale** | Ensure the security of user profile. |
| **Dependencies** | Encryption |
| **Priority** | High |

Table 1.1.4: Confirm Password

|  |  |
| --- | --- |
| **Identifier** | M1-UC1-FR4 |
| **Title** | Confirm password |
| **Requirement** | User will to renter the password ( of 8 characters) to confirm for matches |
| **Source** | Security Design |
| **Rationale** | Confirm the password |
| **Dependencies** | Input validation |
| **Priority** | Medium |

**Table 1.1.5: Agree to Terms and Conditions**

|  |  |
| --- | --- |
| **Identifier** | M1-UC1-FR5 |
| **Title** | Agree to Terms and Conditions |
| **Requirement** | User must agree with the term and conditions to register |
| **Source** | Legal Requirement |
| **Rationale** | Ensure that suer agree with terms |
| **Dependencies** | Legal document |
| **Priority** | High |

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**M1-UC2: User Sign In**

Table 1.2.1: Enter Email for Login

|  |  |
| --- | --- |
| **Identifier** | M1-UC2-FR1 |
| **Title** | Enter Email for Login |
| **Requirement** | The user is required to enter email for verification the account exists |
| **Source** | System Design |
| **Rationale** | Identifies the account of user |
| **Dependencies** | Database |
| **Priority** | High |

Table 1.2.2: Enter Password

|  |  |
| --- | --- |
| **Identifier** | M1-UC2-FR2 |
| **Title** | Enter Password |
| **Requirement** | The system shall validate the password that is entered by user |
| **Source** | Security Design |
| **Rationale** | . System identifies the user account. |
| **Dependencies** | Database Connection |
| **Priority** | High |

Table 1.2.3: Forgot Password

|  |  |
| --- | --- |
| **Identifier** | M1-UC2-FR3 |
| **Title** | Forgot Password |
| **Requirement** | The system should have an option to recover the password of user |
| **Source** | User Experience |
| **Rationale** | Enhance accessibility |
| **Dependencies** | Email service |
| **Priority** | Medium |

Table 1.2.3: Stay logged out

|  |  |
| --- | --- |
| **Identifier** | M1-UC2-FR4 |
| **Title** | Enter Password |
| **Requirement** | The system shall validate the password that is entered by user |
| **Source** | Security Design |
| **Rationale** | System identifies the user account. |
| **Dependencies** | Database Connection |
| **Priority** | Low |

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**M1-UC3: Update profile**

Table 1.3.1: Update name

|  |  |
| --- | --- |
| **Identifier** | M1-UC3-FR1 |
| **Title** | Update name |
| **Requirement** | User should be able to update the name in profile setting. |
| **Source** | System Design |
| **Rationale** | Allow user to update the name |
| **Dependencies** | Database |
| **Priority** | Medium |

Table 1.3.2: Update email address

|  |  |
| --- | --- |
| **Identifier** | M1-UC3-FR2 |
| **Title** | Update email address |
| **Requirement** | The system shall allow the user to update the email address |
| **Source** | User Design |
| **Rationale** | Keep the user up to date |
| **Dependencies** | Email verifies |
| **Priority** | Medium |

Table 1.3.3: Update password

|  |  |
| --- | --- |
| **Identifier** | M1-UC3-FR3 |
| **Title** | Update password |
| **Requirement** | The system shall allow the user to update password |
| **Source** | Security Design |
| **Rationale** | Account to be secured. |
| **Dependencies** | Confirm from the email address that password to be update |
| **Priority** | High |

Table 1.3.4: Update Profile pic

|  |  |
| --- | --- |
| **Identifier** | M1-UC3-FR4 |
| **Title** | Update Profile pic |
| **Requirement** | The system shall allow the user to update the pic |
| **Source** | User Design |
| **Rationale** | Allows the user to update profile picture |
| **Dependencies** | none |
| **Priority** | Low |

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**M1-UC4: View Customer Profile**

Table 1.4.1: View profile

|  |  |
| --- | --- |
| **Identifier** | M1-UC4-FR1 |
| **Title** | View profile |
| **Requirement** | The system will allow user to see customers demographics |
| **Source** | System Design |
| **Rationale** | View the interaction information that system stored |
| **Dependencies** | Database |
| **Priority** | High |

Table 1.4.2: Display Customer feedback

|  |  |
| --- | --- |
| **Identifier** | M1-UC4-FR2 |
| **Title** | Display Customer feedback |
| **Requirement** | System will display the feedback. |
| **Source** | System Data |
| **Rationale** | Quality check feedback helps users understand and address any image quality issues promptly. |
| **Dependencies** | Database |
| **Priority** | medium |

Table 1.4.3: Display Shared Contact information

|  |  |
| --- | --- |
| **Identifier** | M1-UC4-FR3 |
| **Title** | Display Shared Contact information |
| **Requirement** | System will display the contact information that customer has explicitly shared |
| **Source** | System Data |
| **Rationale** | Respect the privacy of customer information |
| **Dependencies** | Database |
| **Priority** | High |

Table 1.4.4: Display Customer interaction Channels

|  |  |
| --- | --- |
| **Identifier** | M1-UC4-FR4 |
| **Title** | Display Customer interaction Channels |
| **Requirement** | System will display the platforms on which customer is and interacted |
| **Source** | System Data |
| **Rationale** | Information about customer socials |
| **Dependencies** | Database |
| **Priority** | High |

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**M1-UC5: Manage Privacy Settings**

Table 1.5.1: Set Profile Visibility

|  |  |
| --- | --- |
| **Identifier** | M1-UC5-FR1 |
| **Title** | Set Profile Visibility |
| **Requirement** | The system shall be able to control who can view their customer profile. |
| **Source** | Privacy Design |
| **Rationale** | Ensures who can see customer profile |
| **Dependencies** | - |
| **Priority** | High |

Table 1.5.2: Maintain Data Share

|  |  |
| --- | --- |
| **Identifier** | M1-UC5-FR2 |
| **Title** | Maintain Data Share |
| **Requirement** | The system shall maintain the control of data to 3rd party. |
| **Source** | Privacy Design |
| **Rationale** | Protect the user data from other interoperable system in the system. |
| **Dependencies** | Privacy control |
| **Priority** | High |

Table 1.5.3: Set Notification Settings

|  |  |
| --- | --- |
| **Identifier** | M1-UC5-FR3 |
| **Title** | Set Notification Settings |
| **Requirement** | The system will get alert notifications on basis of negative sentiments |
| **Source** | System service Experience |
| **Rationale** | System can to turn on or off the notification regarding their time |
| **Dependencies** | System preferences |
| **Priority** | Low |

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**M1-UC6: Share Profile**

Table 1.6.1: Share Profile Link

|  |  |
| --- | --- |
| **Identifier** | M1-UC6-FR1 |
| **Title** | Share Profile Link |
| **Requirement** | The system shall generate the link of the profile. |
| **Source** | User Experience |
| **Rationale** | Allow system or user to generate the link to be shared. |
| **Dependencies** | Link generation service |
| **Priority** | Medium |

Table 1.6.2: Share Profile via Email

|  |  |
| --- | --- |
| **Identifier** | M1-UC6-FR2 |
| **Title** | Share Profile via Email |
| **Requirement** | System shall allow to share the profile of data via email. |
| **Source** | User Experience |
| **Rationale** | Provide facility for sharing |
| **Dependencies** | Email service |
| **Priority** | Medium |

Table 1.5.3: Share Profile on Social Media

|  |  |
| --- | --- |
| **Identifier** | M1-UC6-FR3 |
| **Title** | Share Profile on Social Media |
| **Requirement** | The system shall allow to share the profile of customer that is public to be share among social media platform. |
| **Source** | System Design |
| **Rationale** | Share profile on social media platform will increase visibility and engagement of business |
| **Dependencies** | Social media |
| **Priority** | Low |

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**M1-UC7: Notification management**

Table 1.7.1: Real Time notifications

|  |  |
| --- | --- |
| **Identifier** | M1-UC7-FR1 |
| **Title** | Real Time notifications |
| **Requirement** | The system use AI tool to give real time notifications to management team. |
| **Source** | System |
| **Rationale** | Keep the user informed about customer sentiment. |
| **Dependencies** | Notification service |
| **Priority** | High |

Table 1.7.2: Email Notifications

|  |  |
| --- | --- |
| **Identifier** | M1-UC7-FR2 |
| **Title** | Email notifications |
| **Requirement** | The system shall provide an email notification to user regarding customer overall sentiments |
| **Source** | Communication |
| **Rationale** | Flexible to provide notification via email. |
| **Dependencies** | Email service |
| **Priority** | Medium |

Table 1.7.3: Notification Settings

|  |  |
| --- | --- |
| **Identifier** | M1-UC7-FR3 |
| **Title** | Notifications Setting |
| **Requirement** | The system will allow user to turn on or off the notifications |
| **Source** | User Experience |
| **Rationale** | Flexible to notifications. |
| **Dependencies** | User Settings |
| **Priority** | Medium |

Table 1.7.4 Notifications to Customer

|  |  |
| --- | --- |
| **Identifier** | M1-UC7-FR4 |
| **Title** | Notifications to customer |
| **Requirement** | The system set the settings to send notification over social channels or through email to loyal customer regarding discounts |
| **Source** | System Design |
| **Rationale** | Flexible to send notification to customer on analysis |
| **Dependencies** | AI tool |
| **Priority** | Medium |

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**M1-UC8: Manage Customer Profile**

Table 1.8.1: View Profile

|  |  |
| --- | --- |
| **Identifier** | M1-UC8-FR1 |
| **Title** | View Profile |
| **Requirement** | The system shall allow to view Customer profile their demographics and all data stored. |
| **Source** | System Design |
| **Rationale** | System provides an overview of customer |
| **Dependencies** | Database |
| **Priority** | Medium |

Table 1.8.1: Edit Profile

|  |  |
| --- | --- |
| **Identifier** | M1-UC8-FR1 |
| **Title** | Edit Profile |
| **Requirement** | The system shall allow to edit profile of customer |
| **Source** | System Design |
| **Rationale** | feature for account flexibility |
| **Dependencies** | - |
| **Priority** | Medium |

Table 1.8.3: Delete Profile

|  |  |
| --- | --- |
| **Identifier** | M1-UC8-FR3 |
| **Title** | Delete Profile |
| **Requirement** | The system shall allow to Delete the profile of customer |
| **Source** | System Design |
| **Rationale** | Provide right to delete data |
| **Dependencies** | Database access |
| **Priority** | Medium |

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**M1-UC9: Log out**

Table 1.9.1: Standard Log out

|  |  |
| --- | --- |
| **Identifier** | M1-UC9-FR1 |
| **Title** | Standard Log out |
| **Requirement** | The user will be able to log out of the system. |
| **Source** | System Design |
| **Rationale** | Ensures account security when not in use. |
| **Dependencies** | User interface |
| **Priority** | High |

Table 1.9.1: Automatic Logout on Time

|  |  |
| --- | --- |
| **Identifier** | M1-UC8-FR1 |
| **Title** | Automatic Logout on Time |
| **Requirement** | The system shall be automatically logout after a period |
| **Source** | System Design |
| **Rationale** | Feature of logout after a time |
| **Dependencies** | - |
| **Priority** | Medium |

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## **Module 2: Customer Interaction Analysis**

**M2-UC1: Data Gathering**

Table 2.1.1: Data Gathering from social media

|  |  |
| --- | --- |
| **Identifier** | M2-UC1-FR1 |
| **Title** | Data Gathering from social media |
| **Requirement** | The system would be able to collect customer data form channels |
| **Source** | System Design |
| **Rationale** | Data save from Different channels regarding customer interaction |
| **Dependencies** | API access |
| **Priority** | High |

Table 2.1.2: Data Gathering from Email

|  |  |
| --- | --- |
| **Identifier** | M2-UC1-FR2 |
| **Title** | Data Gathering from Email |
| **Requirement** | The system shall gather the data from emails |
| **Source** | Marketing Design |
| **Rationale** | Several customer interact with the system through email marketing strategy |
| **Dependencies** | Email Marketing |
| **Priority** | Medium |

Table 2.1.3: Data gathering from Web

|  |  |
| --- | --- |
| **Identifier** | M2-UC1-FR3 |
| **Title** | Data gathering from Web |
| **Requirement** | The system shall store the data of customer that interact with the system through web |
| **Source** | Web analytics |
| **Rationale** | Web traffic help store the data |
| **Dependencies** | Internet connection |
| **Priority** | Medium |

**M2-UC2: Data Analytics:**

Table 2.2.1: Analysis of interactions

|  |  |
| --- | --- |
| **Identifier** | M2-UC2-FR1 |
| **Title** | Analysis of interactions |
| **Requirement** | The system shall analyze the interaction of customer from different platform |
| **Source** | Data gathering tool |
| **Rationale** | Analyzing the data of customer. |
| **Dependencies** | Analytics tool |
| **Priority** | High |

Table 2.2.2: Customer Behavior Analysis

|  |  |
| --- | --- |
| **Identifier** | M2-UC2-FR2 |
| **Title** | Customer Behavior Analysis |
| **Requirement** | The system shall analyze the data of customer interactions and their behavior toward the services. |
| **Source** | AI tool |
| **Rationale** | AI tool help analyzing the customer interactions |
| **Dependencies** | AI tool |
| **Priority** | High |

Table 2.2.3: Analysis Report

|  |  |
| --- | --- |
| **Identifier** | M2-UC2-FR3 |
| **Title** | Analysis Report |
| **Requirement** | The system shall generate report regarding interactions of customers through different platform |
| **Source** | AI analysis |
| **Rationale** | Ai tool facilitates making report on customer interactions |
| **Dependencies** | FR1, FR2 |
| **Priority** | medium |

**M2-UC3: Customer Segmentation**

Table 2.3.1: Customer Segmentation by demographics

|  |  |
| --- | --- |
| **Identifier** | M2-UC3-FR1 |
| **Title** | Customer Segmentation by demographics |
| **Requirement** | The system shall segment the customer on the base on demographics age gender , location etc. |
| **Source** | Data segmentation |
| **Rationale** | Segmentation of data for better evaluating the customer |
| **Dependencies** | Analytics tool |
| **Priority** | High |

Table 2.3.2: Segmentation by Behavior

|  |  |
| --- | --- |
| **Identifier** | M2-UC3-FR2 |
| **Title** | Segmentation by Behavior |
| **Requirement** | The system shall enable to segment the customer on basis of behavior that is get from different channels. |
| **Source** | Behavioral Analysis |
| **Rationale** | AI tool help segment behavior of customer |
| **Dependencies** | Analytics tool, AI tool |
| **Priority** | Medium. |

Table 2.3.3: Identifying Loyal Customer

|  |  |
| --- | --- |
| **Identifier** | M2-UC3-FR3 |
| **Title** | Identifying Loyal Customer |
| **Requirement** | The system shall enable to identify their loyal customer that are most interacted with system |
| **Source** | Analysis |
| **Rationale** | AI tool help identify the customer with most interactions |
| **Dependencies** | Analytics tool, AI tool |
| **Priority** | Medium. |

Table 2.3.4: Identifying High value Customer

|  |  |
| --- | --- |
| **Identifier** | M2-UC3-FR4 |
| **Title** | Identifying High value Customer |
| **Requirement** | The system shall enable to identify the customer and segment that most subscribed the service of business and most frequently purchased. |
| **Source** | Revenue Analysis |
| **Rationale** | Identifying the high-level customer offer customized rewards |
| **Dependencies** | Analytics tool, AI tool |
| **Priority** | Medium. |

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**M2-UC4: Data Storage for Decision Making**

Table 2.4.1: Analyze Data Storage

|  |  |
| --- | --- |
| **Identifier** | M2-UC4-FR1 |
| **Title** | Analyze Store data for long term use and making decisions. |
| **Requirement** | The system shall perform analyzing on the stored data |
| **Source** | Database Design |
| **Rationale** | Analyzation on stored data for decisions |
| **Dependencies** | Database |
| **Priority** | High. |

Table 2.4.2: Retrieve Insights

|  |  |
| --- | --- |
| **Identifier** | M2-UC4-FR2 |
| **Title** | Data is retrieved from database to get useful insights |
| **Requirement** | The system shall get insights from data using AI tool . |
| **Source** | AI tool |
| **Rationale** | Ai help analyzing useful insights. |
| **Dependencies** | FR1 |
| **Priority** | Medium |

Table 2.4.3: Back Up of data

|  |  |
| --- | --- |
| **Identifier** | M2-UC4-FR3 |
| **Title** | Back Up of data |
| **Requirement** | The system shall save the copy of data that if data got loss then data can be retrieved from backup for analyzing and getting insights. |
| **Source** | Data Management |
| **Rationale** | Data backups ensure the life of a system |
| **Dependencies** | FR-1,2 |
| **Priority** | High |

**M2-UC5: Behavior tracking**

Table 2.5.1: Customer Interaction Activity

|  |  |
| --- | --- |
| **Identifier** | M2-UC5-FR1 |
| **Title** | Customer Interaction Activity |
| **Requirement** | The system shall track the customer interaction activity to identify the behavior |
| **Source** | Database |
| **Rationale** | Real-time preprocessing allows for immediate analysis of customer behavior through interaction |
| **Dependencies** | Internet Connection |
| **Priority** | High |

Table 2.5.2: Monitor Interest

|  |  |
| --- | --- |
| **Identifier** | M2-UC5-FR2 |
| **Title** | Monitor Interest |
| **Requirement** | The system shall use AI tool to monitor customers interest in services or products |
| **Source** | Behavior Analytics |
| **Rationale** | Monitoring interest using Ai algorithms for to better customer experience and personalized recommendations. |
| **Dependencies** | FR-1 |
| **Priority** | Medium |

Table 2.5.3: Identifying Frequent Customer

|  |  |
| --- | --- |
| **Identifier** | M2-UC5-FR3 |
| **Title** | Identifying Frequent Customer/Visitor |
| **Requirement** | The system shall analyze from data that what people visit more often the organization for services |
| **Source** | Ai tool |
| **Rationale** | Frequent customer will targeted with marketing strategies and offers |
| **Dependencies** | FR-1 |
| **Priority** | Medium |

**M2-UC6: Recommendations**

Table 2.6.1: Recommend Similar Product

|  |  |
| --- | --- |
| **Identifier** | M2-UC6-FR1 |
| **Title** | Recommend Similar Product |
| **Requirement** | The system shall suggest customer with its interest based product in targeted marketing to make conversions. |
| **Source** | Product Analysis |
| **Rationale** | Help customer display interested product for better experience and conversions |
| **Dependencies** | - |
| **Priority** | Medium |

Table 2.6.2: Personalized Product

|  |  |
| --- | --- |
| **Identifier** | M2-UC6-FR3 |
| **Title** | Personalized Product |
| **Requirement** | The system shall give personalized experience to customer on the base of their area of interest that analyze from data interactions. |
| **Source** | Recommendation Engine |
| **Rationale** | Increase sales |
| **Dependencies** | User data |
| **Priority** | Medium |

Table 2.6.3: Context Based Recommendations

|  |  |
| --- | --- |
| **Identifier** | M2-UC6-FR3 |
| **Title** | Context Based Recommendation |
| **Requirement** | The system shall generate recommendation on the base of demographics such as location or demographics. |
| **Source** | Data Analysis |
| **Rationale** | Segmentation context recommendation using algorithm like sale targeting on specific area location customers |
| **Dependencies** | Geographic location |
| **Priority** | Medium |

**M2-UC7: Opportunity Identification**

Table 2.7.1: Identify Trends

|  |  |
| --- | --- |
| **Identifier** | M2-UC7-FR1 |
| **Title** | Identify Trends |
| **Requirement** | The system shall analyze which product is getting sold most. |
| **Source** | User story |
| **Rationale** | AI algorithm will help analyzing the product or service that is most trend among customer |
| **Dependencies** | - |
| **Priority** | High |

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## **Module 3: Personalization**

**M3-UC1: Personalized Product Recommendations**

Table 3.1.1: Display personalized Product Recommendations

|  |  |
| --- | --- |
| **Identifier** | FR-1 |
| **Title** | Display Personalized Product Recommendations |
| **Requirement** | The system shall display personalized product recommendations based on the customer’s purchase history and preferences. |
| **Source** | System Design Team |
| **Rationale** | Personalized recommendations increase customer engagement and sales conversion. |
| **Business Rule** | BR-1: Only products that are in stock should be recommended. |
| **Dependencies** | M3-UC3 (Customizable User Preferences) |
| **Priority** | High |

Table 3.1.2: Update Product Recommenfations

|  |  |
| --- | --- |
| **Identifier** | FR-2 |
| **Title** | Update Product Recommendations |
| **Requirement** | The system shall update product recommendations in real-time as customer preferences or purchase history changes. |
| **Source** | System Design Team |
| **Rationale** | Real-time updates ensure relevant recommendations and increase customer satisfaction. |
| **Business Rule** | BR-2: Recommendations should reflect the most recent customer activity. |
| **Dependencies** | M3-UC7 (Dynamic Web Content Display) |
| **Priority** | High |

**M3-UC2: Real-Time Personalization Offers**

Table 3.2.1: Real-Time offers

|  |  |
| --- | --- |
| **Identifier** | FR-1 |
| **Title** | Generate Real-Time Offers |
| **Requirement** | The system shall generate real-time personalized offers based on the customer’s current browsing behavior. |
| **Source** | Marketing Team |
| **Rationale** | Real-time offers encourage immediate purchase decisions. |
| **Business Rule** | BR-3: Offers should only apply to available products. |
| **Dependencies** | M3-UC5 (Guided Item Navigation) |
| **Priority** | High |

Table 3.2.2: Display Personalized Offers

|  |  |
| --- | --- |
| **Identifier** | FR-2 |
| **Title** | Display Personalized Offers |
| **Requirement** | The system shall display personalized offers in the customer's account during their browsing session. |
| **Source** | Marketing Team |
| **Rationale** | Personalized offers increase engagement and drive sales conversions. |
| **Business Rule** | BR-4: Offers should expire at the end of the browsing session. |
| **Dependencies** | M3-UC1 (Personalized Product Recommendations) |
| **Priority** | Medium |

**M3-UC3: Customizable User Preferences**

Table 3.3.1: Set Preferences

|  |  |
| --- | --- |
| **Identifier** | FR-1 |
| **Title** | Allow Users to Set Preferences |
| **Requirement** | The system shall allow users to customize their preferences for product recommendations, including categories and brands. |
| **Source** | User Research |
| **Rationale** | Allowing users to customize preferences increases user satisfaction and the relevance of recommendations. |
| **Business Rule** | BR-5: User preferences must be saved and stored securely. |
| **Dependencies** | M3-UC1 (Personalized Product Recommendations) |
| **Priority** | High |

Table 3.3.2: Save Preferences

|  |  |
| --- | --- |
| **Identifier** | FR-2 |
| **Title** | Save User Preferences |
| **Requirement** | The system shall save user preferences in their account for future recommendation adjustments. |
| **Source** | User Research |
| **Rationale** | Storing preferences ensures consistency in personalized experiences. |
| **Business Rule** | BR-6: Preferences must be easily editable by users. |
| **Dependencies** | M3-UC7 (Dynamic Web Content Display) |
| **Priority** | High |

**M3-UC4: Personalized Email Campaigns**

Table 3.4.1: Personalized Email

|  |  |
| --- | --- |
| **Identifier** | FR-1 |
| **Title** | Generate Personalized Emails |
| **Requirement** | The system shall generate personalized email campaigns based on user behavior and preferences. |
| **Source** | Marketing Team |
| **Rationale** | Personalized emails improve open rates and engagement with the platform. |
| **Business Rule** | BR-7: Emails must comply with anti-spam regulations. |
| **Dependencies** | M3-UC3 (Customizable User Preferences) |
| **Priority** | High |

Table 3.4.2: Send Personalized Offers (email)

|  |  |
| --- | --- |
| **Identifier** | FR-2 |
| **Title** | Send Personalized Offers via Email |
| **Requirement** | The system shall send personalized offers to users through email, based on their preferences and activity. |
| **Source** | Marketing Team |
| **Rationale** | Sending personalized offers via email increases the chances of engagement and purchases. |
| **Business Rule** | BR-8: Offers should reflect the user’s most recent activity. |
| **Dependencies** | M3-UC2 (Real-Time Personalization Offers) |
| **Priority** | Medium |

**M3-UC5: Guided Item Navigation**

Table 3.5.1: Guided Navigation

|  |  |
| --- | --- |
| **Identifier** | FR-1 |
| **Title** | Provide Guided Navigation |
| **Requirement** | The system shall guide users to relevant products based on their search terms and preferences. |
| **Source** | User Research |
| **Rationale** | Guided navigation helps users find relevant products faster, improving user experience. |
| **Business Rule** | BR-9: Categories must reflect user preferences and available stock. |
| **Dependencies** | M3-UC3 (Customizable User Preferences) |
| **Priority** | Medium |

Table 3.5.2: Update Navigation

|  |  |
| --- | --- |
| **Identifier** | FR-2 |
| **Title** | Update Navigation Options |
| **Requirement** | The system shall update navigation options in real-time based on user interaction. |
| **Source** | User Research |
| **Rationale** | Real-time updates provide more relevant suggestions to the user. |
| **Business Rule** | BR-10: Options must be updated without page refreshes. |
| **Dependencies** | M3-UC1 (Personalized Product Recommendations) |
| **Priority** | Medium |

**M3-UC6: Predictive Personalization**

Table 3.6.1: Predicative Analysis

|  |  |
| --- | --- |
| **Identifier** | FR-1 |
| **Title** | Use Predictive Analytics for Personalization |
| **Requirement** | The system shall use predictive analytics to recommend products based on the user’s previous interactions and trends. |
| **Source** | Data Analytics Team |
| **Rationale** | Predictive analytics improve recommendation accuracy and user satisfaction. |
| **Business Rule** | BR-11: Predictions must be based on recent user behavior. |
| **Dependencies** | M3-UC1 (Personalized Product Recommendations) |
| **Priority** | High |

Table 3.6.2: Update Prediction Real-time

|  |  |
| --- | --- |
| **Identifier** | FR-2 |
| **Title** | Update Predictions in Real-Time |
| **Requirement** | The system shall update predictive personalization suggestions in real-time as the user interacts with the platform. |
| **Source** | Data Analytics Team |
| **Rationale** | Real-time updates provide more accurate predictions, increasing user engagement. |
| **Business Rule** | BR-12: Predictions must be adjusted as soon as new user behavior is detected. |
| **Dependencies** | M3-UC7 (Dynamic Web Content Display) |
| **Priority** | High |

**M3-UC7: Dynamic Web Content Display**

Table 3.7.1: Display Dynamic Web Content by Prefence

|  |  |
| --- | --- |
| **Identifier** | FR-1 |
| **Title** | Display Dynamic Web Content Based on Preferences |
| **Requirement** | The system shall dynamically display content based on user preferences and interactions on the platform. |
| **Source** | System Design Team |
| **Rationale** | Dynamic content provides a more personalized experience, increasing engagement. |
| **Business Rule** | BR-13: Content must be updated without interrupting the user experience. |
| **Dependencies** | M3-UC3 (Customizable User Preferences) |
| **Priority** | High |

Table 3.7.2: Real Time Update of DMC

|  |  |
| --- | --- |
| **Identifier** | FR-2 |
| **Title** | Real-Time Update of Dynamic Content |
| **Requirement** | The system shall update dynamic content in real-time as user preferences or behaviors change. |
| **Source** | System Design Team |
| **Rationale** | Real-time updates ensure that the content remains relevant to the user. |
| **Business Rule** | BR-14: Updates must be seamless and non-disruptive to the user experience. |
| **Dependencies** | M3-UC1 (Personalized Product Recommendations) |
| **Priority** | Medium |

M3-UC8: Cross-Selling Recommendations

Table 3.8.1: Display Recommendations

|  |  |
| --- | --- |
| **Identifier** | FR-1 |
| **Title** | Display Cross-Selling Recommendations |
| **Requirement** | The system shall recommend complementary products based on the user’s current selections in their cart. |
| **Source** | Marketing Team |
| **Rationale** | Cross-selling increases average order value and sales conversion rates. |
| **Business Rule** | BR-15: Only relevant products should be recommended for cross-selling. |
| **Dependencies** | M3-UC1 (Personalized Product Recommendations) |
| **Priority** | High |

Table 3.8.2: Update Cross-selling Recommendations

|  |  |
| --- | --- |
| **Identifier** | FR-2 |
| **Title** | Update Cross-Selling Recommendations in Real-Time |
| **Requirement** | The system shall update cross-selling recommendations in real-time as users add or remove items from their cart. |
| **Source** | Marketing Team |
| **Rationale** | Real-time updates increase the relevance of cross-selling suggestions. |
| **Business Rule** | BR-16: Cross-selling recommendations must adapt to cart changes. |
| **Dependencies** | M3-UC7 (Dynamic Web Content Display) |
| **Priority** | Medium |

## **Module 4: Performance Metrics Dashboard**

**M4-UC1: KPIs Monitoring**

**Table 4:1:1 Display Key Performance Indicators (KPIs)**

|  |  |
| --- | --- |
| **Identifier** | FR-1 |
| **Title** | Display Key Performance Indicators (KPIs) |
| **Requirement** | The system shall display real-time KPIs such as NPS (Net Promoter Score) and CSAT (Customer Satisfaction Score) on the performance dashboard. |
| **Source** | Admin Team |
| **Rationale** | Real-time monitoring of KPIs helps track customer satisfaction and identify areas for improvement. |
| **Business Rule** | BR-1: KPI data should be updated in real-time for accuracy. |
| **Dependencies** | M4-UC5 (Metrics Comparison Over Time) |
| **Priority** | High |

**Table 4:1:2 Update KPIs Automatically**

|  |  |
| --- | --- |
| **Identifier** | FR-2 |
| **Title** | Update KPIs Automatically |
| **Requirement** | The system shall automatically update KPIs on the dashboard based on incoming data from various customer interaction points. |
| **Source** | Admin Team |
| **Rationale** | Automated updates ensure that admins have access to the most current data without manual intervention. |
| **Business Rule** | BR-2: KPI data updates must be continuous, with no more than a 1-minute delay. |
| **Dependencies** | M4-UC6 (Areas for Improvement Identification) |
| **Priority** | High |

**M4-UC2: Customer Retention Tracking**

**Table 4:2:1 Track Customer Retention Rates**

|  |  |
| --- | --- |
| **Identifier** | FR-1 |
| **Title** | Track Customer Retention Rates |
| **Requirement** | The system shall track customer retention rates and display the retention data on the dashboard for analysis. |
| **Source** | Admin Team |
| **Rationale** | Tracking retention rates allows the organization to evaluate customer loyalty and take necessary actions to reduce churn. |
| **Business Rule** | BR-3: Retention data must be updated daily. |
| **Dependencies** | M4-UC4 (Churn Rate Analysis) |
| **Priority** | Medium |

**Table 4:2:2 Generate Retention Reports**

|  |  |
| --- | --- |
| **Identifier** | FR-2 |
| **Title** | Generate Retention Reports |
| **Requirement** | The system shall generate weekly reports on customer retention trends and provide insights on potential reasons for customer churn. |
| **Source** | Admin Team |
| **Rationale** | Regular retention reports provide insights that help improve customer retention strategies. |
| **Business Rule** | BR-4: Retention reports must cover a minimum of one year of data. |
| **Dependencies** | M4-UC7 (Performance Reports Generation) |
| **Priority** | Medium |

**M4-UC3: Real-Time Performance Monitoring**

**Table 4:3:1 Monitor Customer Satisfaction in Real-Time**

|  |  |
| --- | --- |
| **Identifier** | FR-1 |
| **Title** | Monitor Customer Satisfaction in Real-Time |
| **Requirement** | The system shall provide real-time monitoring of customer satisfaction metrics such as CSAT, allowing immediate responses to declining scores. |
| **Source** | Customer Experience Team |
| **Rationale** | Real-time monitoring allows timely identification of customer issues and faster responses to improve satisfaction. |
| **Business Rule** | BR-5: Customer satisfaction data must be updated at least every 5 minutes. |
| **Dependencies** | M4-UC1 (KPIs Monitoring) |
| **Priority** | High |

**Table 4:3:2 Monitor Operational Efficiency**

|  |  |
| --- | --- |
| **Identifier** | FR-2 |
| **Title** | Monitor Operational Efficiency |
| **Requirement** | The system shall monitor operational efficiency in real-time, tracking response times and issue resolution times. |
| **Source** | Operations Team |
| **Rationale** | Monitoring efficiency metrics ensures operational goals are met and identifies bottlenecks in the process. |
| **Business Rule** | BR-6: Operational metrics must reflect current system status. |
| **Dependencies** | M4-UC6 (Areas for Improvement Identification) |
| **Priority** | Medium |

**M4-UC4: Churn Rate Analysis**

**Table 4:4:1 Analyze Churn Rates**

|  |  |
| --- | --- |
| **Identifier** | FR-1 |
| **Title** | Analyze Churn Rates |
| **Requirement** | The system shall analyze customer churn rates and display trends over time to help the business identify the reasons for customer churn. |
| **Source** | Admin Team |
| **Rationale** | Understanding churn rates enables the organization to implement strategies to reduce customer loss. |
| **Business Rule** | BR-7: Churn data should be analyzed monthly. |
| **Dependencies** | M4-UC2 (Customer Retention Tracking) |
| **Priority** | Medium |

**Table 4:4:2 Identify Churn Causes**

|  |  |
| --- | --- |
| **Identifier** | FR-2 |
| **Title** | Identify Churn Causes |
| **Requirement** | The system shall identify potential causes for churn by analyzing customer interaction and satisfaction data. |
| **Source** | Customer Experience Team |
| **Rationale** | Identifying the root causes of churn helps improve retention strategies and customer experience. |
| **Business Rule** | BR-8: Churn data should consider multiple factors, including customer interaction history and support requests. |
| **Dependencies** | M4-UC6 (Areas for Improvement Identification) |
| **Priority** | High |

**M4-UC5: Metrics Comparison Over Time**

**Table 4:5:1 Compare Performance Metrics Across Time Periods**

|  |  |
| --- | --- |
| **Identifier** | FR-1 |
| **Title** | Compare Performance Metrics Across Time Periods |
| **Requirement** | The system shall allow admins to compare performance metrics, such as customer satisfaction and retention rates, over different time periods. |
| **Source** | Admin Team |
| **Rationale** | Comparing performance over time helps identify trends and improvements in key areas. |
| **Business Rule** | BR-9: Metrics comparisons should include at least one year of historical data. |
| **Dependencies** | M4-UC1 (KPIs Monitoring) |
| **Priority** | Medium |

**Table 4:5:2 Provide Historical Data Visualization**

|  |  |
| --- | --- |
| **Identifier** | FR-2 |
| **Title** | Provide Historical Data Visualization |
| **Requirement** | The system shall provide visual representations of historical performance data to aid in trend analysis. |
| **Source** | Admin Team |
| **Rationale** | Visualizations make it easier for users to spot trends and make data-driven decisions. |
| **Business Rule** | BR-10: Historical data must be visualized using graphs, charts, or tables. |
| **Dependencies** | M4-UC7 (Performance Reports Generation) |
| **Priority** | Medium |

**M4-UC6: Areas for Improvement Identification**

**Table 4:6:1 Identify Areas for Customer Experience Improvement**

|  |  |
| --- | --- |
| **Identifier** | FR-1 |
| **Title** | Identify Areas for Customer Experience Improvement |
| **Requirement** | The system shall identify areas for improvement in customer experience based on performance metrics and customer satisfaction data. |
| **Source** | Customer Experience Team |
| **Rationale** | Identifying areas for improvement helps the organization make targeted enhancements to improve overall customer satisfaction. |
| **Business Rule** | BR-11: Improvement areas must be derived from CSAT and NPS data. |
| **Dependencies** | M4-UC1 (KPIs Monitoring) |
| **Priority** | High |

**Table 4:6:2 Provide Actionable Insights**

|  |  |
| --- | --- |
| **Identifier** | FR-2 |
| **Title** | Provide Actionable Insights |
| **Requirement** | The system shall provide actionable insights for operational improvements, based on real-time performance metrics. |
| **Source** | Operations Team |
| **Rationale** | Actionable insights help management take immediate steps to address performance issues. |
| **Business Rule** | BR-12: Insights should include recommendations for process improvements. |
| **Dependencies** | M4-UC3 (Real-Time Performance Monitoring) |
| **Priority** | High |

**M4-UC7: Performance Reports Generation**

**Table 4:7:1 Generate Detailed Performance Reports**

|  |  |
| --- | --- |
| **Identifier** | FR-1 |
| **Title** | Generate Detailed Performance Reports |
| **Requirement** | The system shall generate detailed performance reports, including customer satisfaction metrics, retention rates, and churn analysis. |
| **Source** | Admin Team |
| **Rationale** | Performance reports provide a comprehensive overview of system effectiveness and customer satisfaction. |
| **Business Rule** | BR-13: Reports must cover at least a 30-day period. |
| **Dependencies** | M4-UC1 (KPIs Monitoring) |
| **Priority** | High |

**Table 4:7:2 Provide Customizable Report Options**

|  |  |
| --- | --- |
| **Identifier** | FR-2 |
| **Title** | Provide Customizable Report Options |
| **Requirement** | The system shall allow admins to customize the performance reports by selecting specific metrics and time periods. |
| **Source** | Admin Team |
| **Rationale** | Customizable reports allow admins to focus on specific areas of interest for analysis. |
| **Business Rule** | BR-14: Reports must be exportable in PDF and CSV formats. |
| **Dependencies** | M4-UC5 (Metrics Comparison Over Time) |
| **Priority** | Medium |

**M4-UC8: Dashboard Visualization of Metrics**

**Table 4:8:1 Visualize Performance Metrics on the Dashboard**

|  |  |
| --- | --- |
| **Identifier** | FR-1 |
| **Title** | Visualize Performance Metrics on the Dashboard |
| **Requirement** | The system shall display performance metrics, such as customer satisfaction scores and churn rates, in a visual format on the dashboard. |
| **Source** | Admin Team |
| **Rationale** | Visual representation of data makes it easier for admins to quickly interpret performance metrics. |
| **Business Rule** | BR-15: Metrics must be displayed using graphs and charts for easy understanding. |
| **Dependencies** | M4-UC1 (KPIs Monitoring) |
| **Priority** | High |

**Table 4:8:2 Update Dashboard Visuals in Real-Time**

|  |  |
| --- | --- |
| **Identifier** | FR-2 |
| **Title** | Update Dashboard Visuals in Real-Time |
| **Requirement** | The system shall update the visual representations of performance metrics in real-time as new data is received. |
| **Source** | Admin Team |
| **Rationale** | Real-time visual updates ensure that the latest performance data is always displayed on the dashboard. |
| **Business Rule** | BR-16: Real-time updates must occur within a 1-minute interval. |
| **Dependencies** | M4-UC3 (Real-Time Performance Monitoring) |
| **Priority** | High |

## **Module 5: Sentimental Analysis**

**M3-UC1: Feedback Gathering**

Table 3.1.1: Feedback Gathering from social media

|  |  |
| --- | --- |
| **Identifier** | M3-UC1-FR1 |
| **Title** | Feedback Gathering from social media |
| **Requirement** | Data Gathering from social media |
| **Source** | The system would be able to collect customer data form channels |
| **Rationale** | System Design |
| **Dependencies** | Data save from Different channels regarding customer interaction |
| **Priority** | API access |
|  | High |

Table 3.1.2: Data Gathering from Email

|  |  |
| --- | --- |
| **Identifier** | M3-UC1-FR2 |
| **Title** | Data Gathering from Email |
| **Requirement** | The system shall gather the data from emails |
| **Source** | Marketing Design |
| **Rationale** | Several customer interact with the system through email marketing strategy |
| **Dependencies** | Email Marketing |
| **Priority** | Medium |

Table 3.1.3: Manual Data Entry

|  |  |
| --- | --- |
| **Identifier** | M3-UC1-FR3 |
| **Title** | Manual Data Entry |
| **Requirement** | The system shall to manually enter the feedback of user from different channels |
| **Source** | User story |
| **Rationale** | Enable feedback entry from different channels |
| **Dependencies** | M3-UC1-FR1,FR2 |
| **Priority** | medium |

**M3-UC2: Keyword Extraction**

Table 3.2.1: Extract keywords

|  |  |
| --- | --- |
| **Identifier** | M3-UC2-FR1 |
| **Title** | Extract keyword |
| **Requirement** | The system shall use AI tools to extract the matching keyword or most common keyword |
| **Source** | User story |
| **Rationale** | Ai tool in extracting keywords to better analyze customer |
| **Dependencies** | NLP processing |
| **Priority** | High. |

Table 3.2.2: Keyword Trends Analysis

|  |  |
| --- | --- |
| **Identifier** | M3-UC2-FR2 |
| **Title** | Keyword Trends Analysis |
| **Requirement** | The system shall analyze the most frequently used keywords to analyze what most frequent issue they are encountering customer or the service they liking |
| **Source** | AI analysis |
| **Rationale** | Help analyzing the trend from customer feedbacks |
| **Dependencies** | - |
| **Priority** | Medium. |

Table 3.2.3 Frequent Keyword

|  |  |
| --- | --- |
| **Identifier** | M3-UC2-FR3 |
| **Title** | Frequent Keyword |
| **Requirement** | The system shall find the most frequent words that are used by customer that better provide information about their feedback to service or products |
| **Source** | Ai Analysis |
| **Rationale** | Help analyzing the most frequently used Keywords |
| **Dependencies** | - |
| **Priority** | medium |

**M3-UC3: Sentimental Classification**

Table 3.2.1: Sentiment Feedback Classification

|  |  |
| --- | --- |
| **Identifier** | M3-UC2-FR1 |
| **Title** | Sentiment Classification |
| **Requirement** | The system shall use AI tools to classify the sentiments and categorized |
| **Source** | User story |
| **Rationale** | Ai tool in classifying the sentiments as postive, negative, netural |
| **Dependencies** | NLP processing |
| **Priority** | High. |

Table 3.2.2: Sentiment Score Calculation

|  |  |
| --- | --- |
| **Identifier** | M3-UC2-FR2 |
| **Title** | Sentiment Score Calculation |
| **Requirement** | The system shall find sentiment score for each categorized of sentiment classified |
| **Source** | Business Analysis |
| **Rationale** | Help analyzing the sentiment on basis of score.. |
| **Dependencies** | - |
| **Priority** | Medium. |

Table 3.2.3 Sentiment Automated Response

|  |  |
| --- | --- |
| **Identifier** | M3-UC2-FR3 |
| **Title** | Sentiment Automated Response |
| **Requirement** | The system shall find response to the critical or negative feedbacks on real time to better the customer service |
| **Source** | Ai Analysis |
| **Rationale** | Help analyzing the negative sentiment and response on real time addressing their issue |
| **Dependencies** | - |
| **Priority** | High |

**M3-UC4: Real time Monitoring**

Table 3.4.1: Real time monitoring

|  |  |
| --- | --- |
| **Identifier** | M3-UC4-FR1 |
| **Title** | Real time monitoring |
| **Requirement** | The system shall allow Ai tool to live analyse the sentiment of users. |
| **Source** | User story |
| **Rationale** | Enable the real time monitoring of interactions. |
| **Dependencies** | - |
| **Priority** | high |

Table 3.4.2: Fresh Data

|  |  |
| --- | --- |
| **Identifier** | M3-UC4-FR2 |
| **Title** | Automatic Data Refresh |
| **Requirement** | The system shall refresh sentimental data over passing data |
| **Source** | Technical requirement |
| **Rationale** | Refresh the data of sentiments over time for better analysis and decision making |
| **Dependencies** | - |
| **Priority** | Medium. |

**M3-UC5: Alert Notification**

Table 3.5.1: Generate Alert on negative customer

|  |  |
| --- | --- |
| **Identifier** | M3-UC5-FR1 |
| **Title** | Generate Alert on negative customer |
| **Requirement** | The system shall generate alerts when negative sentiments score is getting higher |
| **Source** | System Analysis |
| **Rationale** | Allows for sending notifications on time. |
| **Dependencies** | Alert System |
| **Priority** | high |

Table 3.5.2: Customized Alert

|  |  |
| --- | --- |
| **Identifier** | M3-UC5-FR2 |
| **Title** | Customized Alert |
| **Requirement** | The system shall maintain the user to set the limit after which alert notification will be generated |
| **Source** | Technical requirement |
| **Rationale** | Provide flexibility in how and when user to be notified |
| **Dependencies** | FR1 |
| **Priority** | High |

**M3-UC6: Perception trend**

Table 3.6.1: Analyze trend over time

|  |  |
| --- | --- |
| **Identifier** | M3-UC6-FR1 |
| **Title** | Analyze trend over time |
| **Requirement** | The system shall ensure perception of customer about brand on data |
| **Source** | Technical requirement |
| **Rationale** | Helps to identify current perception about customer. |
| **Dependencies** | Database |
| **Priority** | High |

Table 3.6.2: Visualize Trend Data

|  |  |
| --- | --- |
| **Identifier** | M3-UC6-FR2 |
| **Title** | Visualize Trend Data |
| **Requirement** | The system shall provide graphical presentation over trends. |
| **Source** | Technical requirement |
| **Rationale** | Present the visual representation of people interests and trends over time |
| **Dependencies** | Visualization tool |
| **Priority** | medium |

**M3-UC7: Insight Generation**

Table 3.7.1 Generate Actionable Insights

|  |  |
| --- | --- |
| **Identifier** | M3-UC7-FR1 |
| **Title** | Generate Actionable Insights |
| **Requirement** | The system shall allow user to generate the actionable insights based on the sentimental data that is stored from the different channels |
| **Source** | User story |
| **Rationale** | Ai tool for analyzing the whole journey of customer make insights. |
| **Dependencies** | M3-UC6-FR1 |
| **Priority** | Medium |

Table 3.7.2: Insights on base of Age

|  |  |
| --- | --- |
| **Identifier** | M3-UC7-FR2 |
| **Title** | Insights on base of Age |
| **Requirement** | The system shall provide feature to analyze the age group of people that are interested in their service or interacted |
| **Source** | System Design |
| **Rationale** | Flexibility for to provide insights to age group of people that interacted with product |
| **Dependencies** | AI engine |
| **Priority** | Medium |

Table 3.7.3: Insights on base of area

|  |  |
| --- | --- |
| **Identifier** | M3-UC7-FR3 |
| **Title** | Insights on base of Age |
| **Requirement** | The system shall provide feature to analyze the geographical region of people that are interested in their service or interacted |
| **Source** | System Design |
| **Rationale** | Flexibility for to provide insights of location of people that interacted with product |
| **Dependencies** | AI engine |
| **Priority** | Medium |

**M3-UC8: Report Sentiments**

Table 3.8.1: Report of insight

|  |  |
| --- | --- |
| **Identifier** | M3-UC7-FR2 |
| **Title** | Report of Insights |
| **Requirement** | The system shall provide feature to create a report that is specifying the insight that are analyzed |
| **Source** | System Design |
| **Rationale** | Flexibility for providing the insights in presentable form |
| **Dependencies** | M3-UC6-FR2 |
| **Priority** | High |

Table 3.8.2: Comparative Sentiment report

|  |  |
| --- | --- |
| **Identifier** | M3-UC8-FR2 |
| **Title** | Comparative Sentiment report |
| **Requirement** | The system shall comparative sentiment analysis report to show changes in customer sentiments over time. |
| **Source** | User story |
| **Rationale** | Help identifying customer behavior over time. |
| **Dependencies** | M3-UC8-FR1 |
| **Priority** | Medium |

Table 3.8.3: Automated Insight Generation

|  |  |
| --- | --- |
| **Identifier** | M3-UC8-FR3 |
| **Title** | Automated Insight Generation |
| **Requirement** | The system shall automatically generate actionable insight for analysis. |
| **Source** | System design |
| **Rationale** | Providing insights on customer sentiments. |
| **Dependencies** | M3-UC8-FR1 |
| **Priority** | Medium |

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## **Module 6: Customer Journey Map**

**M4-UC1: Create Journey map**

Table 4.1.1: Create User journey map

|  |  |
| --- | --- |
| **Identifier** | M4-UC1-FR1 |
| **Title** | Create User journey map |
| **Requirement** | The system shall allow use to create a new journey map by providing the template. |
| **Source** | User Story |
| **Rationale** | Flexible to design journey map on specific needs |
| **Dependencies** | Ui design |
| **Priority** | High. |

Table 4.1.2: Include Touchpoints

|  |  |
| --- | --- |
| **Identifier** | M4-UC1-FR2 |
| **Title** | Include Touchpoints |
| **Requirement** | The system shall allow user to add touchpoints, phases and interactions to journey map |
| **Source** | Technical requirement |
| **Rationale** | Help to visualize the customer interaction at different stages of their journey. |
| **Dependencies** | Data input forms |
| **Priority** | Medium |

Table 4.1.3: Custom Journey map Elements

|  |  |
| --- | --- |
| **Identifier** | M4-UC1-FR3 |
| **Title** | Customize journey map Elements |
| **Requirement** | The system shall provide options for customizing journey map elements as table, icons ,labels, and colors |
| **Source** | User story |
| **Rationale** | Customizing feature enhancing the clarity of website |
| **Dependencies** | Visualization tool |
| **Priority** | Medium |

**M4-UC2: Identifying Map**

Table 4.2.1: Automatic Journey identification

|  |  |
| --- | --- |
| **Identifier** | M4-UC2-FR1 |
| **Title** | Allow users to select specific features for analysis |
| **Requirement** | The system shall automatically identify and suggest journey map-based customer interactions |
| **Source** | User story |
| **Rationale** | Feature for generating the map by process the data |
| **Dependencies** | - |
| **Priority** | medium |

Table 4.2.2: Journey map Recommendations

|  |  |
| --- | --- |
| **Identifier** | M4-UC2-FR2 |
| **Title** | Journey map Recommendations |
| **Requirement** | The system shall enable to recommend different journey map based on their need |
| **Source** | User story |
| **Rationale** | Feature to facilitate customer to identify the problem |
| **Dependencies** | Templates libarary |
| **Priority** | Medium. |

**M4-UC3 Identify pain points**

Table 4.2.2: Pain point detection

|  |  |
| --- | --- |
| **Identifier** | M4-UC2-FR2 |
| **Title** | Pain point detection |
| **Requirement** | The system shall enable to classify the pain points of customers and analyze |
| **Source** | User story |
| **Rationale** | Feature to facilitate customer to identify the problem |
| **Dependencies** | FR-1 |
| **Priority** | Medium. |

Table 4.3.2: Visualization of Pain points on journey map

|  |  |
| --- | --- |
| **Identifier** | M4-UC3-FR2 |
| **Title** | Visualization of Pain points on journey map |
| **Requirement** | The system shall display the pain points of customers on journey map to make them easy identifiable. |
| **Source** | User Requirement |
| **Rationale** | Allow the stakeholders to quickly understand the problem areas in customer journey |
| **Dependencies** | Visualization tool |
| **Priority** | Medium |

Table 4.3.3: Integrate feedback

|  |  |
| --- | --- |
| **Identifier** | M4-UC3-FR3 |
| **Title** | Integrate feedback |
| **Requirement** | The system shall integrate the feedback to display on journey map. |
| **Source** | User Requirement |
| **Rationale** | Ensure the pain points to be identified on customer journey map |
| **Dependencies** | Database |
| **Priority** | Medium |

**M4-UC4: Share Journey Map**

Table 4.4.1: Share Link

|  |  |
| --- | --- |
| **Identifier** | M4-UC4-FR1 |
| **Title** | Share Link |
| **Requirement** | The system shall generate the link of the customer journey map. |
| **Source** | User Experience |
| **Rationale** | Allow system or user to generate the link to be shared. |
| **Dependencies** | Link generation service |
| **Priority** | Medium |

Table4.4..2: Share via Email

|  |  |
| --- | --- |
| **Identifier** | M4-UC4-FR2 |
| **Title** | Share via Email |
| **Requirement** | System shall allow to share the journey map via email. |
| **Source** | User Experience |
| **Rationale** | Provide facility for sharing via email |
| **Dependencies** | Email service |
| **Priority** | Medium |

Table 4.4..3: Share via Social Media

|  |  |
| --- | --- |
| **Identifier** | M4-UC4-FR3 |
| **Title** | Share on social media |
| **Requirement** | The system shall allow to share the customer journey map that is public to be share among social media platform. |
| **Source** | System Design |
| **Rationale** | Share profile on social media platform will increase visibility and engagement of business |
| **Dependencies** | Social media |
| **Priority** | Low |

**M4-UC5: Update Journey Map**

Table 4.5.1: Update Journey map

|  |  |
| --- | --- |
| **Identifier** | M4-UC5-FR1 |
| **Title** | Update Journey map |
| **Requirement** | The system shall enable the user to edit the journey map with refreshing the data |
| **Source** | User story |
| **Rationale** | Keep journey map up to date with latest information and changes |
| **Dependencies** | UI design |
| **Priority** | High |

Table 4.5.2: Audit Journey map

|  |  |
| --- | --- |
| **Identifier** | M4-UC5-FR2 |
| **Title** | Audit Journey map |
| **Requirement** | The system shall provide an audit of all updates when there perform a changing in the system. |
| **Source** | User story |
| **Rationale** | Provide the record of user updates on customer journey map. |
| **Dependencies** | Audit functionality |
| **Priority** | Medium. |

Table 4.5.3: Version Control

|  |  |
| --- | --- |
| **Identifier** | M4-UC5-FR3 |
| **Title** | Version Control |
| **Requirement** | The system shall maintain the version control of journey map to track all changes |
| **Source** | User story |
| **Rationale** | Ensure to write down all the changes and to be reverted if need. |
| **Dependencies** | FR-1, 2 |
| **Priority** | Medium. |

**M4-UC6: Delete Journey Map**

Table 4.6.1: Temporary delete

|  |  |
| --- | --- |
| **Identifier** | M4-UC6-FR1 |
| **Title** | Temporary delete |
| **Requirement** | The system shall be able to delete the data temporary that will be stored in backlog for 30 days and then will permanently delete. |
| **Source** | Technical requirement |
| **Rationale** | Access to delete the journey map |
| **Dependencies** | - |
| **Priority** | high |

Table 4.6.2: Confirm delete

|  |  |
| --- | --- |
| **Identifier** | M4-UC6-FR2 |
| **Title** | Confirm delete |
| **Requirement** | The system shall allow users to delete the map and by confirming from user |
| **Source** | User story |
| **Rationale** | Confirm to delete the map instead of accidental deletion |
| **Dependencies** | User interface |
| **Priority** | Medium. |

## **7: Reward And Loyalty Program**

**M7-UC1: Loyalty Program Creation**

**Table 7:1:1 Display Loyalty Program Options**

|  |  |
| --- | --- |
| **Identifier** | FR-1 |
| **Title** | Display Loyalty Program Options |
| **Requirement** | The system shall display loyalty program options for customers to view and choose from. |
| **Source** | Admin Team |
| **Rationale** | Displaying loyalty programs encourages customers to participate and engage with the platform. |
| **Business Rule** | BR-1: Loyalty programs must include at least one reward tier. |
| **Dependencies** | M7-UC2 (Customer Loyalty Tracking) |
| **Priority** | High |

**Table 7:1:2 Create and Activate Loyalty Program**

|  |  |
| --- | --- |
|  |  |
| **Identifier** | FR-2 |
| **Title** | Create and Activate Loyalty Program |
| **Requirement** | The system shall allow the admin to create and activate a loyalty program, including setting reward tiers and points allocation. |
| **Source** | Admin Team |
| **Rationale** | Admins need to be able to create and activate loyalty programs to manage customer engagement. |
| **Business Rule** | BR-2: The system must ensure that loyalty programs can only be activated by authorized admins. |
| **Dependencies** | M7-UC3 (Reward Points Allocation) |
| **Priority** | High |

**M7-UC2: Customer Loyalty Tracking**

**Table 7:2:1 Track Customer Loyalty Points**

|  |  |
| --- | --- |
| **Identifier** | FR-1 |
| **Title** | Track Customer Loyalty Points |
| **Requirement** | The system shall track customer loyalty points and display them in the customer’s account for their review. |
| **Source** | Customer Engagement Team |
| **Rationale** | Customers need to track their loyalty points to understand their reward status. |
| **Business Rule** | BR-3: Loyalty points must be updated in real-time as customer actions occur. |
| **Dependencies** | M7-UC3 (Reward Points Allocation) |
| **Priority** | High |

**Table 7:2:2 Generate Loyalty Reports**

|  |  |
| --- | --- |
| **Identifier** | FR-2 |
| **Title** | Generate Loyalty Reports |
| **Requirement** | The system shall generate monthly loyalty reports that track customer engagement, points earned, and rewards redeemed. |
| **Source** | Admin Team |
| **Rationale** | Regular reporting ensures visibility into the performance of the loyalty program and customer engagement levels. |
| **Business Rule** | BR-4: Reports must cover at least a 12-month period. |
| **Dependencies** | M7-UC8 (Loyalty Program Integration with Sales Data) |
| **Priority** | Medium |

**M7-UC3: Reward Points Allocation**

**Table 7:3:1 Allocate Reward Points for Purchases**

|  |  |
| --- | --- |
| **Identifier** | FR-1 |
| **Title** | Allocate Reward Points for Purchases |
| **Requirement** | The system shall allocate reward points to customers based on the value of their purchases. |
| **Source** | Sales and Marketing Team |
| **Rationale** | Allocating reward points incentivizes customers to make more purchases and engage with the loyalty program. |
| **Business Rule** | BR-5: Reward points must be proportional to the total value of the purchase. |
| **Dependencies** | M7-UC2 (Customer Loyalty Tracking) |
| **Priority** | High |

**Table 7:3:2 Remove Reward Points for Canceled Orders**

|  |  |
| --- | --- |
| **Identifier** | FR-2 |
| **Title** | Remove Reward Points for Canceled Orders |
| **Requirement** | The system shall remove reward points from a customer’s account if their order is canceled. |
| **Source** | Sales and Marketing Team |
| **Rationale** | Points must be deducted when a transaction is reversed to prevent misuse of the loyalty program. |
| **Business Rule** | BR-6: Points should be deducted in real-time when the cancellation occurs. |
| **Dependencies** | M7-UC7 (Seamless Payment System Integration) |
| **Priority** | Medium |

**M7-UC4: Notify Customers of Loyalty Status**

**Table 7:4:1 Send Loyalty Status Notifications**

|  |  |
| --- | --- |
| **Identifier** | FR-1 |
| **Title** | Send Loyalty Status Notifications |
| **Requirement** | The system shall send notifications to customers informing them of changes to their loyalty status, including tier upgrades or reward eligibility. |
| **Source** | Marketing Team |
| **Rationale** | Customers need to be notified about their loyalty status to encourage further engagement and reward redemption. |
| **Business Rule** | BR-7: Notifications must be sent within 24 hours of a loyalty status change. |
| **Dependencies** | M7-UC2 (Customer Loyalty Tracking) |
| **Priority** | High |

**Table 7:4:2 Send Expiry Reminders for Loyalty Points**

|  |  |
| --- | --- |
| **Identifier** | FR-2 |
| **Title** | Send Expiry Reminders for Loyalty Points |
| **Requirement** | The system shall send reminders to customers when their loyalty points are about to expire. |
| **Source** | Marketing Team |
| **Rationale** | Expiry reminders encourage customers to use their points before they are lost, increasing engagement and sales. |
| **Business Rule** | BR-8: Expiry reminders must be sent at least 30 days before point expiration. |
| **Dependencies** | M7-UC5 (Personalized Offers for Loyal Customers) |
| **Priority** | Medium |

**M7-UC5: Personalized Offers for Loyal Customers**

**Table 7:5:1 Generate Personalized Offers Based on Loyalty Status**

|  |  |
| --- | --- |
| **Identifier** | FR-1 |
| **Title** | Generate Personalized Offers Based on Loyalty Status |
| **Requirement** | The system shall generate personalized offers for loyal customers based on their current loyalty tier and purchasing behavior. |
| **Source** | Marketing Team |
| **Rationale** | Personalized offers increase the chances of customers making purchases and redeeming loyalty rewards. |
| **Business Rule** | BR-9: Offers must be relevant to the customer’s loyalty status and preferences. |
| **Dependencies** | M7-UC1 (Loyalty Program Creation) |
| **Priority** | High |

**Table 7:5:2 Display Personalized Offers to Customers**

|  |  |
| --- | --- |
| **Identifier** | FR-2 |
| **Title** | Display Personalized Offers to Customers |
| **Requirement** | The system shall display personalized offers to customers in their account or via email based on their loyalty status. |
| **Source** | Marketing Team |
| **Rationale** | Displaying offers encourages customers to act on personalized deals, improving engagement. |
| **Business Rule** | BR-10: Offers must have a clear expiration date to drive urgency. |
| **Dependencies** | M7-UC4 (Notify Customers of Loyalty Status) |
| **Priority** | Medium |

**M7-UC6: Loyalty Program Effectiveness Analysis**

**Table 7:6:1 Analyze Loyalty Program Effectiveness**

|  |  |
| --- | --- |
| **Identifier** | FR-1 |
| **Title** | Analyze Loyalty Program Effectiveness |
| **Requirement** | The system shall analyze the effectiveness of loyalty programs by tracking engagement metrics, redemption rates, and customer satisfaction. |
| **Source** | Admin Team |
| **Rationale** | Analyzing the effectiveness of loyalty programs allows businesses to optimize reward structures and improve customer satisfaction. |
| **Business Rule** | BR-11: Effectiveness analysis should occur quarterly. |
| **Dependencies** | M7-UC7 (Loyalty Reports Generation) |
| **Priority** | Medium |

**Table 7:6:2 Generate Insights for Loyalty Program Improvement**

|  |  |
| --- | --- |
| **Identifier** | FR-2 |
| **Title** | Generate Insights for Loyalty Program Improvement |
| **Requirement** | The system shall generate insights and suggestions for improving loyalty programs based on the analysis of customer engagement and redemption data. |
| **Source** | Admin Team |
| **Rationale** | Insights help identify areas of improvement for loyalty programs to better meet customer expectations and business goals. |
| **Business Rule** | BR-12: Insights should include suggestions for enhancing reward structures and communication with customers. |
| **Dependencies** | M7-UC5 (Personalized Offers for Loyal Customers) |
| **Priority** | High |

**M7-UC8: Loyalty Program Integration with Sales Data**

**Table 7:8:1 Integrate Loyalty Program with Sales Data**

|  |  |
| --- | --- |
| **Identifier** | FR-1 |
| **Title** | Integrate Loyalty Program with Sales Data |
| **Requirement** | The system shall integrate loyalty program data with sales data to provide a comprehensive view of customer behavior and loyalty trends. |
| **Source** | Admin Team |
| **Rationale** | Integrating data provides insights that can enhance marketing strategies and customer engagement. |
| **Business Rule** | BR-15: Integration must be updated daily to ensure current data reflects ongoing customer behavior. |
| **Dependencies** | M7-UC3 (Reward Points Allocation) |
| **Priority** | High |

**Table 7:8:2 Generate Combined Analytics Reports**

|  |  |
| --- | --- |
| **Identifier** | FR-2 |
| **Title** | Generate Combined Analytics Reports |
| **Requirement** | The system shall generate reports that combine data from the loyalty program and sales to provide insights into the overall effectiveness of both strategies. |
| **Source** | Admin Team |
| **Rationale** | Combined analytics enable better understanding of how loyalty programs impact sales and customer retention. |
| **Business Rule** | BR-16: Reports must include both loyalty and sales metrics for comprehensive analysis. |
| **Dependencies** | M7-UC4 (Notify Customers of Loyalty Status) |
| **Priority** | Medium |

## **8: Pricing And Subscriptions**

**M8-UC1: VR-Based Subscription Offering**

**Table 8:1:1 Display VR-Based Subscription Options**

|  |  |
| --- | --- |
| **Identifier** | FR-1 |
| **Title** | Display VR-Based Subscription Options |
| **Requirement** | The system shall display available VR-based subscription options for customers on the subscription page. |
| **Source** | Marketing Team |
| **Rationale** | Displaying subscription options encourages customers to consider purchasing VR content. |
| **Business Rule** | BR-1: Subscription options must include a detailed description and pricing information. |
| **Dependencies** | M8-UC2 (Subscription Tier Management) |
| **Priority** | High |

**Table 8:1:2 Process Subscription Purchases**

|  |  |
| --- | --- |
| **Identifier** | FR-2 |
| **Title** | Process Subscription Purchases |
| **Requirement** | The system shall allow customers to purchase a VR-based subscription using various payment methods. |
| **Source** | Sales Team |
| **Rationale** | Providing multiple payment options enhances customer convenience and increases sales. |
| **Business Rule** | BR-2: All payment transactions must comply with PCI-DSS standards for security. |
| **Dependencies** | M8-UC3 (Seamless Payment System Integration) |
| **Priority** | High |

**M8-UC2: Subscription Tier Management**

**Table 8:2:1 Create and Manage Subscription Tiers**

|  |  |
| --- | --- |
| **Identifier** | FR-1 |
| **Title** | Create and Manage Subscription Tiers |
| **Requirement** | The system shall allow admins to create, update, and delete subscription tiers and their associated benefits. |
| **Source** | Admin Team |
| **Rationale** | Proper tier management allows flexibility in pricing and offering different benefits to customers. |
| **Business Rule** | BR-3: Each subscription tier must have clearly defined benefits and limitations. |
| **Dependencies** | M8-UC1 (VR-Based Subscription Offering) |
| **Priority** | High |

**Table 8:2:2 Update Tier Benefits**

|  |  |
| --- | --- |
| **Identifier** | FR-2 |
| **Title** | Update Tier Benefits |
| **Requirement** | The system shall allow admins to modify the benefits associated with each subscription tier as necessary. |
| **Source** | Admin Team |
| **Rationale** | Updating tier benefits helps keep offerings competitive and aligned with customer expectations. |
| **Business Rule** | BR-4: Changes to tier benefits must be communicated to existing subscribers. |
| **Dependencies** | M8-UC4 (Subscription Metrics Analysis) |
| **Priority** | Medium |

**M8-UC3: Notify Customers of Special Discounts**

**Table 8:3:1 Generate Discount Notifications**

|  |  |
| --- | --- |
| **Identifier** | FR-1 |
| **Title** | Generate Discount Notifications |
| **Requirement** | The system shall automatically generate notifications to customers about special discounts on subscriptions based on their preferences and behavior. |
| **Source** | Marketing Team |
| **Rationale** | Informing customers about discounts encourages engagement and potential purchases. |
| **Business Rule** | BR-5: Notifications must comply with customer opt-in preferences. |
| **Dependencies** | M8-UC4 (Personalized Offers for Loyal Customers) |
| **Priority** | High |

**Table 8:3:2 Send Notifications via Multiple Channels**

|  |  |
| --- | --- |
| **Identifier** | FR-2 |
| **Title** | Send Notifications via Multiple Channels |
| **Requirement** | The system shall send discount notifications via email, SMS, and app notifications according to customer preferences. |
| **Source** | Marketing Team |
| **Rationale** | Utilizing multiple channels increases the likelihood of customers receiving and acting on discount notifications. |
| **Business Rule** | BR-6: Notifications should be sent within 24 hours of a discount being applied. |
| **Dependencies** | M8-UC2 (Subscription Tier Management) |
| **Priority** | Medium |

**M8-UC4: Subscription Benefits Display**

**Table 8:4:1 Display Subscription Benefits**

|  |  |
| --- | --- |
| **Identifier** | FR-1 |
| **Title** | Display Subscription Benefits |
| **Requirement** | The system shall display the benefits associated with each subscription tier clearly on the subscription page. |
| **Source** | Marketing Team |
| **Rationale** | Clear communication of benefits helps customers make informed decisions when selecting a subscription. |
| **Business Rule** | BR-7: Benefits must be updated in real-time to reflect any changes made by the admin. |
| **Dependencies** | M8-UC1 (VR-Based Subscription Offering) |
| **Priority** | High |

**Table 8:4:2 Update Benefits Based on Customer Feedback**

|  |  |
| --- | --- |
| **Identifier** | FR-2 |
| **Title** | Update Benefits Based on Customer Feedback |
| **Requirement** | The system shall allow admins to adjust benefits of subscription tiers based on customer feedback and market trends. |
| **Source** | Admin Team |
| **Rationale** | Adapting benefits based on feedback ensures that the subscription offerings meet customer needs and expectations. |
| **Business Rule** | BR-8: Changes to benefits must be documented and reviewed for compliance. |
| **Dependencies** | M8-UC3 (Notify Customers of Special Discounts) |
| **Priority** | Medium |

**M8-UC5: Subscription Metrics Analysis**

**Table 8:5:1 Analyze Subscription Metrics**

|  |  |
| --- | --- |
| **Identifier** | FR-1 |
| **Title** | Analyze Subscription Metrics |
| **Requirement** | The system shall analyze subscription metrics such as sign-ups, renewals, and cancellations to provide insights into performance. |
| **Source** | Analytics Team |
| **Rationale** | Analyzing metrics helps the organization identify trends and make data-driven decisions to improve subscription offerings. |
| **Business Rule** | BR-9: Metrics should be analyzed monthly for timely insights. |
| **Dependencies** | M8-UC6 (Automated Renewal Notifications) |
| **Priority** | Medium |

**Table 8:5:2 Generate Insights from Analysis**

|  |  |
| --- | --- |
| **Identifier** | FR-2 |
| **Title** | Generate Insights from Analysis |
| **Requirement** | The system shall generate insights from subscription metrics analysis to recommend improvements or adjustments to offerings. |
| **Source** | Analytics Team |
| **Rationale** | Generating actionable insights helps improve customer satisfaction and retention rates. |
| **Business Rule** | BR-10: Insights must be documented and reviewed quarterly. |
| **Dependencies** | M8-UC4 (Subscription Benefits Display) |
| **Priority** | Medium |

**M8-UC6: Automated Renewal Notifications**

**Table 8:6:1 Send Renewal Notifications**

|  |  |
| --- | --- |
| **Identifier** | FR-1 |
| **Title** | Send Renewal Notifications |
| **Requirement** | The system shall automatically send renewal notifications to customers when their subscription is approaching expiration. |
| **Source** | Customer Support Team |
| **Rationale** | Automated renewal notifications increase the likelihood of subscription renewals. |
| **Business Rule** | BR-11: Notifications must be sent at least 7 days before subscription expiration. |
| **Dependencies** | M8-UC7 (Loyalty Reports Generation) |
| **Priority** | High |

**Table 8:6:2 Allow Customers to Opt-Out of Notifications**

|  |  |
| --- | --- |
| **Identifier** | FR-2 |
| **Title** | Allow Customers to Opt-Out of Notifications |
| **Requirement** | The system shall allow customers to opt-out of renewal notifications through their account settings. |
| **Source** | Customer Experience Team |
| **Rationale** | Providing customers with control over notifications respects their preferences and improves satisfaction. |
| **Business Rule** | BR-12: Opt-out requests must be processed immediately. |
| **Dependencies** | M8-UC5 (Subscription Metrics Analysis) |
| **Priority** | Medium |

**M8-UC7: Seamless Payment System Integration**

**Table 8:7:1 Integrate Payment Systems**

|  |  |
| --- | --- |
| **Identifier** | FR-1 |
| **Title** | Integrate Payment Systems |
| **Requirement** | The system shall integrate with multiple payment gateways to facilitate subscription payments. |
| **Source** | IT Team |
| **Rationale** | Multiple payment options provide customers with flexibility and convenience. |
| **Business Rule** | BR-13: Payment processing must comply with all relevant security standards. |
| **Dependencies** | M8-UC1 (VR-Based Subscription Offering) |
| **Priority** | High |

**Table 8:7:2 Ensure Secure Payment Transactions**

|  |  |
| --- | --- |
| **Identifier** | FR-2 |
| **Title** | Ensure Secure Payment Transactions |
| **Requirement** | The system shall ensure that all payment transactions are securely processed and encrypted. |
| **Source** | IT Team |
| **Rationale** | Security is critical to protect customer financial information and maintain trust. |
| **Business Rule** | BR-14: All payment data must be handled according to PCI-DSS standards. |
| **Dependencies** | M8-UC3 (Notify Customers of Special Discounts) |
| **Priority** | High |

**M8-UC8: 24/7 Subscriber Support**

**Table 8:8:1 Provide 24/7 Customer Support**

|  |  |
| --- | --- |
| **Identifier** | FR-1 |
| **Title** | Provide 24/7 Customer Support |
| **Requirement** | The system shall provide round-the-clock support for subscribers, allowing them to resolve issues related to their subscriptions. |
| **Source** | Customer Support Team |
| **Rationale** | Offering 24/7 support ensures customer issues are addressed promptly, enhancing satisfaction. |
| **Business Rule** | BR-15: Support responses must occur within 1 hour. |
| **Dependencies** | M8-UC2 (Subscription Tier Management) |
| **Priority** | High |

**Table 8:8:2 Allow Customers to Submit Support Requests**

|  |  |
| --- | --- |
| **Identifier** | FR-2 |
| **Title** | Allow Customers to Submit Support Requests |
| **Requirement** | The system shall allow customers to submit support requests through multiple channels (chat, email, phone). |
| **Source** | Customer Support Team |
| **Rationale** | Multiple submission channels enhance customer accessibility to support. |
| **Business Rule** | BR-16: Support requests must be tracked and monitored for response time compliance. |
| **Dependencies** | M8-UC1 (VR-Based Subscription Offering) |
| **Priority** | Medium |

# Non-Functional Requirements

**Reliability:**

The platform must guarantee uninterrupted operation with little outages.  
  
**R-1:** During normal operation, the system must maintain an MTBF (Mean Time Between Failures) of 500 hours.  
**R-2:** Automatic failover measures should allow the system to recover in five minutes in the event of a failure.  
**R-3:** Error correction techniques should automatically fix 90% of recognized faults without user intervention, and failure detection should happen within 30 seconds of an issue.  
**R-4:** To guarantee a 99.9% service availability rate, downtime should not surpass three hours annually.

**Usability:**

The platform needs to be user-friendly in order to guarantee effective user interactions and accessibility for a wide range of users.  
  
**USE-1:** Within 10 minutes of their initial login, new users should be able to complete important tasks (such analyzing customer interactions) with less than five clicks or interactions.  
**USE-2:** With a 95% success rate for non-technical users, the platform should feature an error recovery system that gives users clear guidance on how to fix issues.  
**USE-3:** In order for the system to be usable by those with disabilities, it must adhere to WCAG 2.1 Level AA accessibility criteria.

**Performance:**

Even in situations of high load, the platform's performance ought to live up to user expectations.  
  
**PER-1:** On a 20 Mbps connection, 95% of the platform's webpages, including dashboards for client interactions, must load in 3 seconds.  
**PER-2:** Within two seconds of submission, the system must process the analytics of 1000 client interactions.  
**PER-3:** Up to 5000 users must be able to access the system at once without experiencing a performance drop of greater than 1%.

**Security:**

To guarantee the confidentiality and integrity of consumer data, security measures are essential.  
  
**SEC-1**: For up to 48 hours, users with advanced skill levels should be unable to break the system without gaining illegal access.  
**SEC-2:** AES-256 encryption standards must be used for all client data, both in transit and at rest.  
**SEC-3:** Within 60 seconds of detecting a breach attempt, the system must report all unsuccessful access attempts and alert administrators.

# External Interface Requirements

This section defines the interfaces that must be supported by the “**AI driven Customer Experience System**” application. This system will communicate with users and with external hardware and software components. AI tools and Virtual reality will help in improving customer service. System is created on each element specification and documentation. As a CEM system includes multiple subcomponents, a separate interface specification for detail of each component such as third part tool AI and VR to define errors or communication protocols.

## **User Interfaces Requirements**

The user interfaces of the **AI driven Customer Experience System**” must adhere to specific characteristics to ensure a cohesive and user-friendly experience.

* **GUI Standards:**
  + The system shall follow established GUI standards, ensuring the consistency in each across each module.
* **Visual Elements:**
  + Standards for fonts, icons, button labels, images, color schemes will be to ensure a pleasant user experience interface.
* **Screen Layout:**
  + The system shall accommodate various screen resolutions, ensuring a responsive design that adapts to different devices on desktop, tablet, mobile.
* **Navigation Elements:**
  + Standard buttons, functions, and navigation links, including a help button, shall be consistently present across all screens and shortcut keys to access to commonly functions
* **Shortcut Keys:**
  + The system may incorporate shortcut keys for efficiency, with a clear guide available to users.
* **Message Display:**
  + The display of messages, alerts, and notifications shall adhere to standardized conventions for clarity and user understanding.
* **Localization:**
  + Layout standards shall facilitate software localization, enabling adaptation for users in different regional settings.
* **Accessibility:**
  + Accommodations for visually impaired users, such as screen reader compatibility and alternative text, shall be implemented in adherence to accessibility standards.

## **Software Interfaces:**

The **AI driven Customer Experience System** will interact with various software components, ensuring seamless integration.

* **AI learning module**

The system shall integrate with AI tool to analyze helping the customer interactions And providing the personalized experience and recommendations.

* **CRM System:**

The system shall provide the customer relationship management to ensure real-time updates on system performance.

* **Virtual Reality:**

The system shall experience the customer team with the Virtual environment for improving the customer service experience.

* **Data Analytics Tool:**

Data analytics tool in system helps analyze the customer interactions to generate hidden sight and help business in decision making.

## **Hardware Interfaces:**

The system may interact with specific hardware components, ensuring compatibility.

* **VR Headset:**

The system shall support VR headsets for immersive training of customer service team to better experience communication standards.

* **Customer Interaction Device:**

Using customer interactions devices such as touchscreen or tablets to facilitate engagement.

* **Server infrastructure:**

The system shall interface with server infrastructure for data processing and storage, ensuring compatibility with various configuration and secure communication protocols

## **Communications Interfaces:**

Communication functions will be defined to ensure effective information exchange.

* **Email Notifications:**
  + The system shall send email notifications to users for critical updates, analysis completion, and subscription-related information.
* **In-App Messaging:**
  + In-app messaging functionality will be supported for secure communication of customer
* **Web based Communication:**
  + The system shall support the real time communication through AI tool to interact with customers using HTTP/HTTPS protocols
* **Social Media Integration:**
  + The CEM shall be capable of integrating the interaction of customers from different social media platforms and track sentiments in real time.

# Conclusion

In conclusion, the Software Requirements Specification (SRS) of the AI-Driven Customer Experience Management (CEM) Platform offers a thorough summary of the goals, functionalities, and technological prerequisites required to develop a cutting-edge customer engagement solution. By combining data from several customer engagement channels with cutting-edge artificial intelligence technology, the CEM platform seeks to dramatically increase customer pleasure and loyalty.  
  
The main elements, use cases, and functional requirements necessary for the CEM project's successful completion are carefully described in this document. By utilizing sentiment analysis, customer interaction analytics, personalized recommendations, and performance monitoring dashboards to provide customized experiences, each module aims to enhance customer interaction outcomes.

# References

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