

# ABC Online Retail Case

## Problem Definition

ABC Retail is a large retail company and there business has been growing at a faster pace. Recently, Customers have been expressing dissatisfaction with ABC Retail. ABC Retail has appointed a Consulting firm to conduct an assessment. IT consulting firm has recommended Online Ordering system which can be used by ABC customers who can directly buy over web and there by reducing the wait time and pass on cost benefits as discounts to customers . This also increases the market penetration for ABC Retail.

## Initial Request for Ordering System

The ABC Company is currently beginning an e-commerce project to develop software for a online ordering system. The new system has been tentatively named the ABC\_Ordering system ( ABC\_OS)

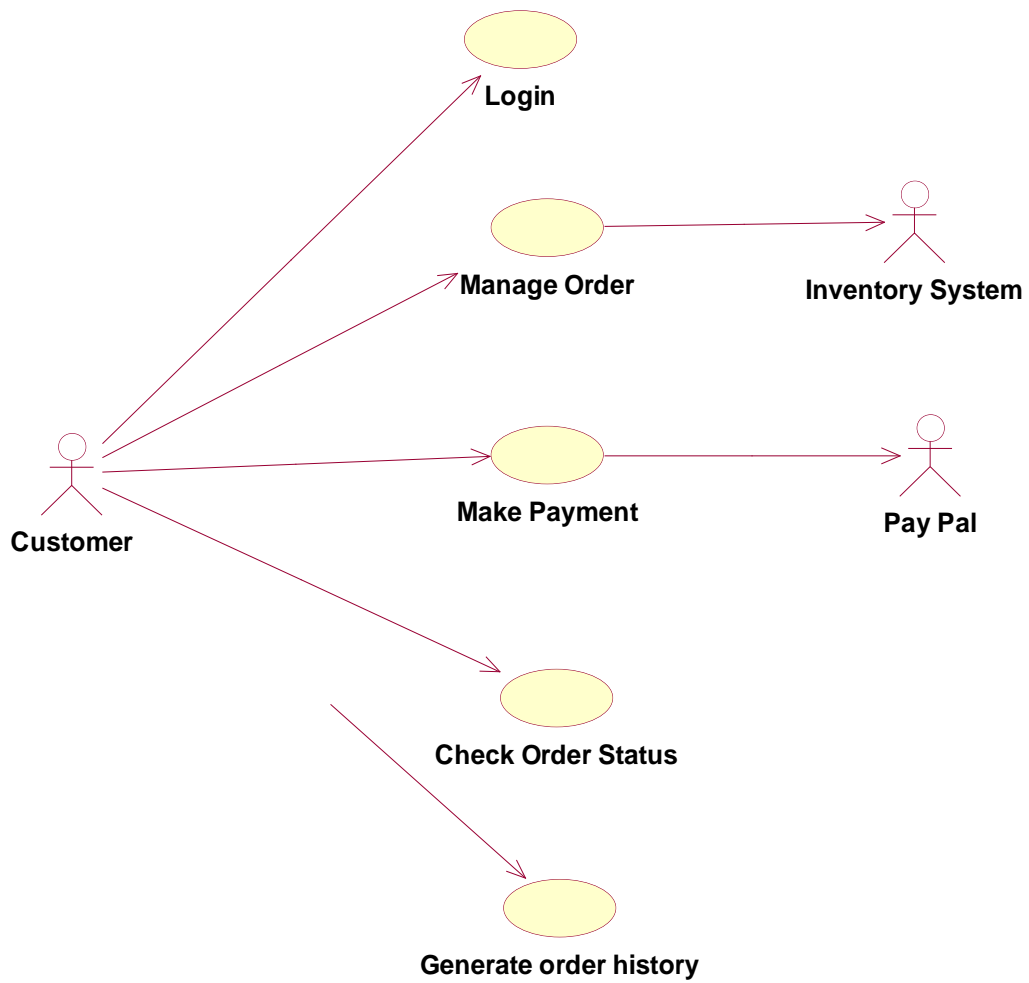
The ABC\_OS system allows its users to buy online, using a Web interface (browser such as Netscape or Internet Explorer). A customer can log on to the Internet anywhere and will be able to perform all the basic operations for ordering: User Profiling ( like registering over web), Order Management, and online Payment as well. Customers can also obtain current and historical information about their accounts, such as the number of orders placed, items procured etc.,

Customers will be able to create order, Update and Delete Order. ABC Company has an existing Inventory system running on Mainframe. ABC Company wants the new ABC\_OS to use this legacy mainframe system to get the latest product details. All the product & its items with quantity available etc., has been stored in the Inventory system and will be continuously updated based on the product trends. Customers can pay by credit & debit cards using the external Payment Gateway (PAYPAL) . Customers also have the option to track the status of their orders.

ABC\_OS Admin can stop a customer from trading based on his/her history. Admin can also conduct a trial audit about the consistency of information about error logs, system issues etc.,

# Use Case Model

**Use case Model:**



## **1. Login**

### **1.1 Brief Description**

This use case describes how a user logs into the ABC\_OS.

### **1.2 Flow of Events**

#### **1.2.1 Basic Flow**

This use case starts when the actor wishes to Login to the ABC\_OS.

1. The system requests that the actor enter his/her name and password
2. The actor enters his/her name and password.
3. The system validates the entered name and password and logs the actor into the system.

#### **1.2.2 Alternative Flows**

##### **1.2.2.1 Invalid Name/Password**

If in the **Basic Flow**, the actor enters an invalid name and/or password, the system displays an error message. The actor can choose to either return to the beginning of the **Basic Flow** or cancel the login, at which point the use case ends.

### **1.3 Special Requirements**

None.

### **1.4 Pre-Conditions**

None.

### **1.5 Post-Conditions**

If the use case was successful, the actor is now logged into the system. If not, the system state is unchanged.

### **1.6 Extension Points**

None.

## 2. Manage Order

### 2.1 Brief Description

This use case allows a customer to create order. The Customer can also update or delete the order placed. Order can be updated or deleted before making the payment. The Inventory System provides a list of the entire latest product catalog.

### 2.2 Flow of Events

#### 2.2.1 Basic Flow

This use case starts when a customer wishes to create order, or to change his/her existing orders..

1. The system requests that the Customer to specify the function he/she would like to perform (either Create a Order, Update a Order , or Delete a Order ).
2. Once the Customer provides the requested information, one of the subflows is executed.  
If the Customer selected “Create a Order”, the **Create a Order** subflow is executed.  
If the Customer selected “Update a Order”, the **Update a Order** subflow is executed.  
If the Customer selected “Delete a Order”, the **Delete a Order** subflow is executed.

##### 2.2.1.1 Create a Order

1. The system retrieves a list of available Products from the existing Inventory System and displays the list to the Customer.
2. The Customer selects the product and system displays the available items in the selected Product.
3. Once the Customer has made his/her selections, the system creates a Order for the Customer containing the selected Product details.
4. System displays a Order Confirmation number to the customer.

##### 2.2.1.2 Update a Order

1. The system retrieves and displays the Customer’s Order. Customer selects the order no which has to be updated.
2. The system retrieves a list of items selected against the particular order.
3. The customer can choose to either add or remove a item or change quantity. System displays the latest product catalog for customer to make his/ her selection.
4. Once the Customer has made his/her selections, the system updates the Order for the Customer using the selected Product details.

##### 2.2.1.3 Delete a Order

1. The system retrieves and displays the Customer’s current Order .
2. The system prompts the Customer to confirm the deletion of the Order.
3. Customer verifies the deletion.
4. System checks the payment status, If customer has still not paid for the order, The system deletes the Order.

### 2.2.2 *Alternative Flows*

#### 2.2.2.1 Insufficient stock / Item not available

In step 3 of Create Order Subflow, customer selects the option to create an order in the basic flow, if the system finds that selected item is not available or insufficient stock, System notifies the customer and displays an error message and the usecase resumes at step 1 in the Create order subflow.

#### 2.2.2.2 No Order Found

If, in the **Update a Order** or **Delete a Order** sub-flows, the system is unable to retrieve the Customer's Order, an error message is displayed. The Customer acknowledges the error, and the **Basic Flow** is re-started at the beginning.

#### 2.2.2.3 Inventory System Unavailable

If the system is unable to communicate with the Inventory System, the system will display an error message to the Customer. The Customer acknowledges the error message, and the use case terminates.

### 2.3 **Special Requirements**

None.

### 2.4 **Pre-Conditions**

The Customer must be logged onto the system before this use case begins.

### 2.5 **Post-Conditions**

If the use case was successful, the Customer Order is created, updated, or deleted. Otherwise, the system state is unchanged.

### 2.6 **Extension Points**

None.

# Order Management System Supplementary Specification

## 1. Objectives

The purpose of this document is to define requirements of the Order Management System. This Supplementary Specification lists the requirements that are not readily captured in the use cases of the use-case model. The Supplementary Specifications and the use-case model together capture a complete set of requirements on the system.

## 2. Scope

This Supplementary Specification applies to the Order Management System. This specification defines the non-functional requirements of the system; such as reliability, usability, performance, and supportability, as well as functional requirements that are common across a number of use cases. (The functional requirements are defined in the Use Case Specifications.).

## 3. Functionality

- System must be available in languages like Spanish, German etc.,

## 4. Usability

### 4.1 Browser compatibility

The application will be able to run under either MS Internet Explorer or Netscape Navigator.

### 4.2 Access to information

The user will be able to gather all information related to his order on one screen.

## 5. Reliability

The system shall be available 24 hours a day 7 days a week, with no more than 5 % down time.

## 6. Performance

1. The system shall support up to 5000 simultaneous users at any given time.
2. The system shall provide access to the legacy Inventory Management System with no more than a 3 second latency.
3. The system must be able to complete 80% of all transactions within a minute.

## 7. Supportability

None.

## 8. Security

1. The system must prevent customers from changing any orders other than their own.

## 9. Design Constraints

The system shall integrate with an existing legacy system , the inventory management system which is using a RDBMS database .

# LifeStyle Mall- Parking Case

## Scenario

LifeStyle Mall has been in trouble recently because of reduced footfalls and the store owners have started moving to another mall. Lifestyle Mall CEO Mr. Adil Shah has called in ResearchArch, a research firm to find out the reasons for reduced footfalls.

ResearchArch has completed its survey and has also done focused group studies. It points out to the lack of good parking system as one of the primary reasons for the reduced footfalls.

Existing Parking system is manned by people and they are not very efficient. People have to wait for the parking attendant to calculate the parking fee based on hours which can be quite irritating especially during weekends. There is also problem of many two wheelers occupying 4 wheeler parking space and the 4 wheeler owners enter inside the parking lot to discover that there is no place for their cars/ SUV's and lot of time is wasted in getting the right parking spot.

ResearchArch has now suggested Lifestyle Mall CEO that they must go for an automated parking system and have suggested ParkSmart, a German based company which provides turnkey solutions for Parking.

ParkSmart start their work with understanding the need of the customer and then they recommend multiple solutions and based on the solution that fits the customer needs, they start implementing the approved solution.

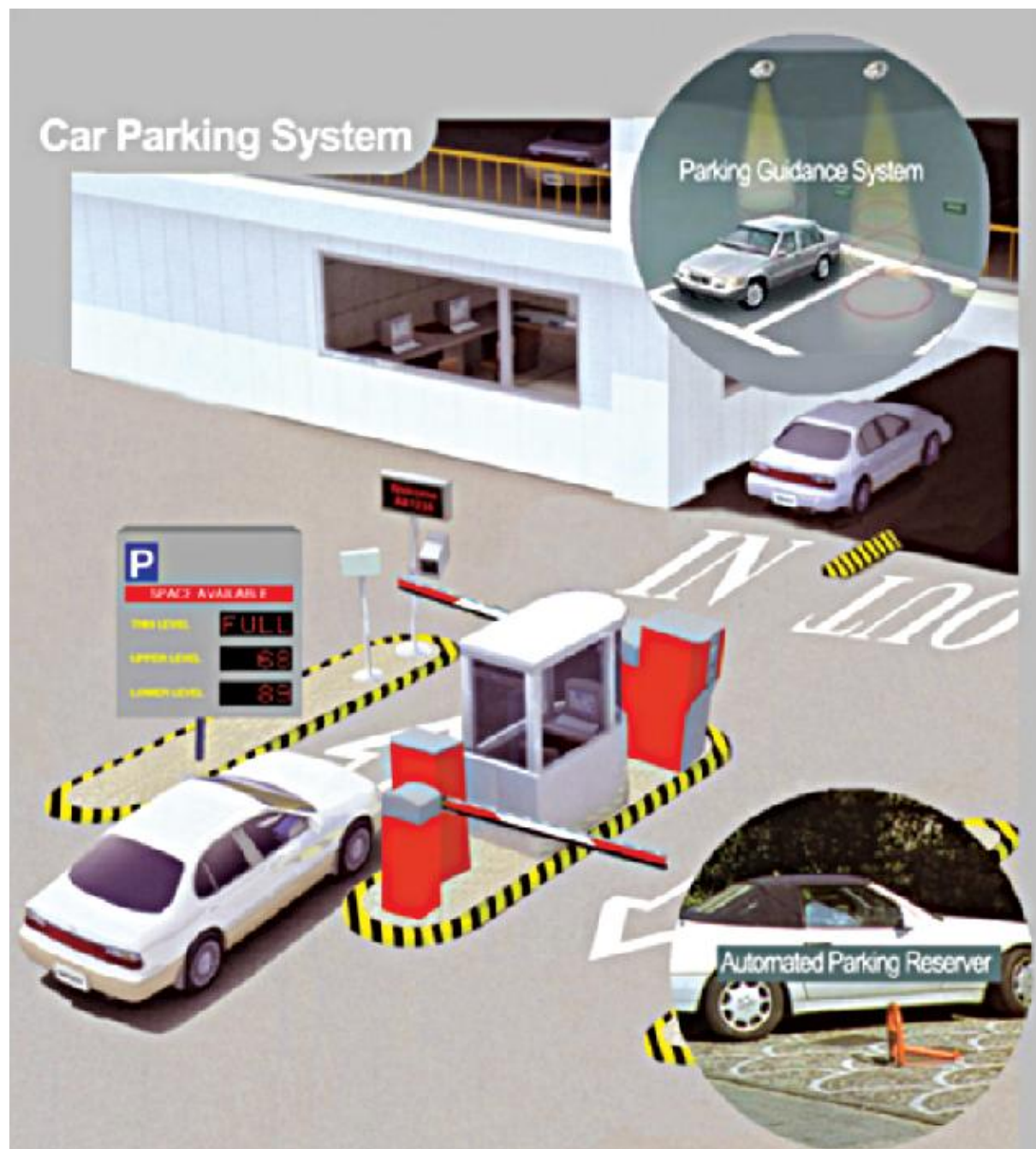
Lifestyle Mall's Top Management has agreed to work with ParkSmart and COO of Lifestyle Mall Mr. John is operationally responsible for overall To be system implementation. Ms.Sarah is made the product owner and she will partner with ParkSmart to ensure successful implementation. Parksmart should also interact with Oldgen Inc, who are responsible for the current parking system which has problems.

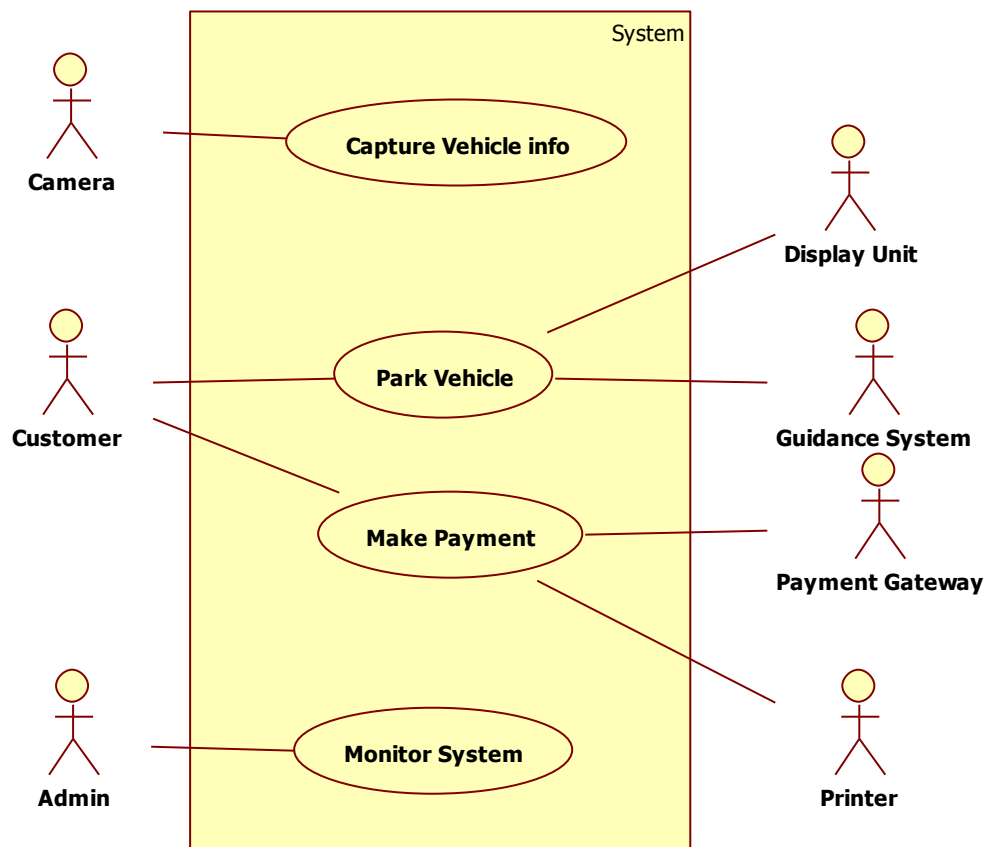
As Parksmart Lead, you are responsible for developing a new system called Smart Vehicle Parking System (SVPS) and some initial requirements are defined as below.



## Initial Requirements for Smart Vehicle Parking System (SVPS)

- To park vehicles of the category Two Wheelers, 4 wheelers (Cars, SUV, MUV) .Trucks are not allowed inside. 5 Entry gates are planned
- Automatic calculating of the cost of parking while exiting. 5 exit gates are planned
  - Automatically register the vehicle registration, time IN & OUT. Both at the 5 entry and 5 exit gates
  - Paid parking @ Rs. 10 for 4 wheelers for 4 hrs and every additional hr costs Rs2/hr
  - Paid parking @ Rs. 5 for 2 wheelers for 4 hrs and every additional hr cost Rs 1/hr
  - Payment Options
    - Manual collection of money at the counter every time at the exit gates (Similar to toll gates) – *There are still some visitors to the mall who are not comfortable with automated payment and only in that case, manual collection will be done.*
    - Automated payment at the exit gates
- Automatic display on the availability of the no of parking slots for two wheelers and 4 wheelers at the entrance
- Camera to detect any accident made inside the parking mall by any vehicle and also Display at the entrance that Lane X should not be used for parking. Automatically the no of available slots for parking should reduce.
  - In case of accident it has to be resolved by both the vehicle owners. If one of the vehicle owners is not present, the other vehicle owner has to wait.
- Overnight parking is not allowed. Only for special cases, where the vehicle cannot be driven. Manually it has to be selected in the system by the administrator
- Statistical data on space usage, revenue generated to be submitted for optimization or expansion





Usecase Model for Car Parking System

## **Usecase Specifications:**

### **1.1. Park Vehicle**

#### **1.2. Brief Description**

This use case describes how a Driver / customer would interact with automated parking system to park his/her Vehicle.

#### **1.3. Pre-Conditions**

Camera has recorded vehicle details

#### **1.4. Flow of Events**

##### **Basic Flow**

- 1.4.1. This use case starts when the entry gate opens
- 1.4.2. System allots an empty slot for the vehicle to be parked and displays the same on the display unit.
- 1.4.3. Guidance system will guide the driver to the preset parking location.
- 1.4.4. Driver parks the vehicle in the present location.
- 1.4.5. Usecase Ends

##### **Alternative Flows**

#### **1.5. Empty Slot allotted not available**

- 1.5.1. In step no 1.4.2 of the basic flow, if the allotted empty slot is not available, System will automatically allot another empty slot and displays the information on the lane display systems.

#### **1.6 Guidance System failures**

- 1.6.1 In Step no 2 of the basic flow, if the guidance system is not working , System will display a red light and the vehicle has to be steered manually to the preset parking location.

#### **1.6. Special Requirements**

System should display free slot with in 2 secs of gate opening.

#### **1.7. Post-Conditions**

- 1.8. Vehicle parked in assigned parking slot or the state of system remains unchanged.

#### **1.9. Extension Points**

- 1.10. None.

## **2.0      Usecase : Capture Vehicle Registration details.**

2.1      Brief Description: This Usecase allows SVPS system to record the vehicle details.

2.2      Precondition: Camera sensors are working

## **2.3      Basic Flow:**

2.3.1. Driver goes the parking entry bay

2.3.2 System displays a Red Light

2.3.3. Camera senses the vehicle registration plate and sends Registration data to SVPS system.

2.3.4. System checks history of the vehicle (like overstay, collision in its previous visit)

2.3.5. Entry gate opens

2.3.6. Usecase Ends

## **2.4      AF1: Bad History**

In Step 2.3.4 of Basic Flow, if the vehicle has overstayed or was involved in collision, System displays a red color - denying entry to the vehicle and calls for manual intervention

2.5      AF2: Sensors at the entry gate not working

2.6      AF3: Camera fails to record Vehicle details