Software Requirements Specification

for

Supply Chain Management System

**Version 1.0**

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**Revision History**

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Date** | **Reason For Changes** | **Version** |
| SCM First | 17-8-20 | First Version | 1.0 |

# Introduction ( Onkar )

* + 1. Supply chain management (SCM) is the centralized management of the flow of goods and services and includes all processes that transform raw materials into final products.
    2. Supply chain management which consists of five parts:
    3. The plan or strategy
    4. The source (of raw materials or services)
    5. Manufacturing (focused on productivity and efficiency)
    6. Delivery and logistics
    7. The return system (for defective or unwanted products)

## Purpose

The purpose of this document is to fully describe the external behavior of the SCM system in terms of functional requirements.

It also describes the nonfunctional requirements such as **usability, availability, security, maintainability, and reliability.** Also, it specifies the design constraints and standards that are needed to be applied to SCM.

## Intended Audience and Reading Suggestions

* + 1. The targeted audience are Teachers and students
    2. Reading suggestions --

In this SRS document, we are suggesting readers about abbreviations

1. SCM -Supply Chain Management

2. TCP/IP -- Transmission Control Protocol/Internet Protocol

3. SQL - Structured Query Language

## Product Scope

This document represents the specification of the SCM system requirements. It serves as the baseline document on which the subsequent software development life cycle phases are built.

Scope of SCM in India --

Increasing uncertainty of supply networks, globalization of businesses, the proliferation of product variety, and shortening of product life cycles.

## References

* + 1. <https://www.academia.edu/35263286/Software_Requirements_Specification_The_Online_Retails_Supply_Chain_System>
    2. <https://blog.arkieva.com/purpose-supply-chain-management/>
    3. <https://en.wikipedia.org/wiki/Supply_chain_management>
    4. <https://www.youtube.com/watch?v=Mi1QBxVjZAw>

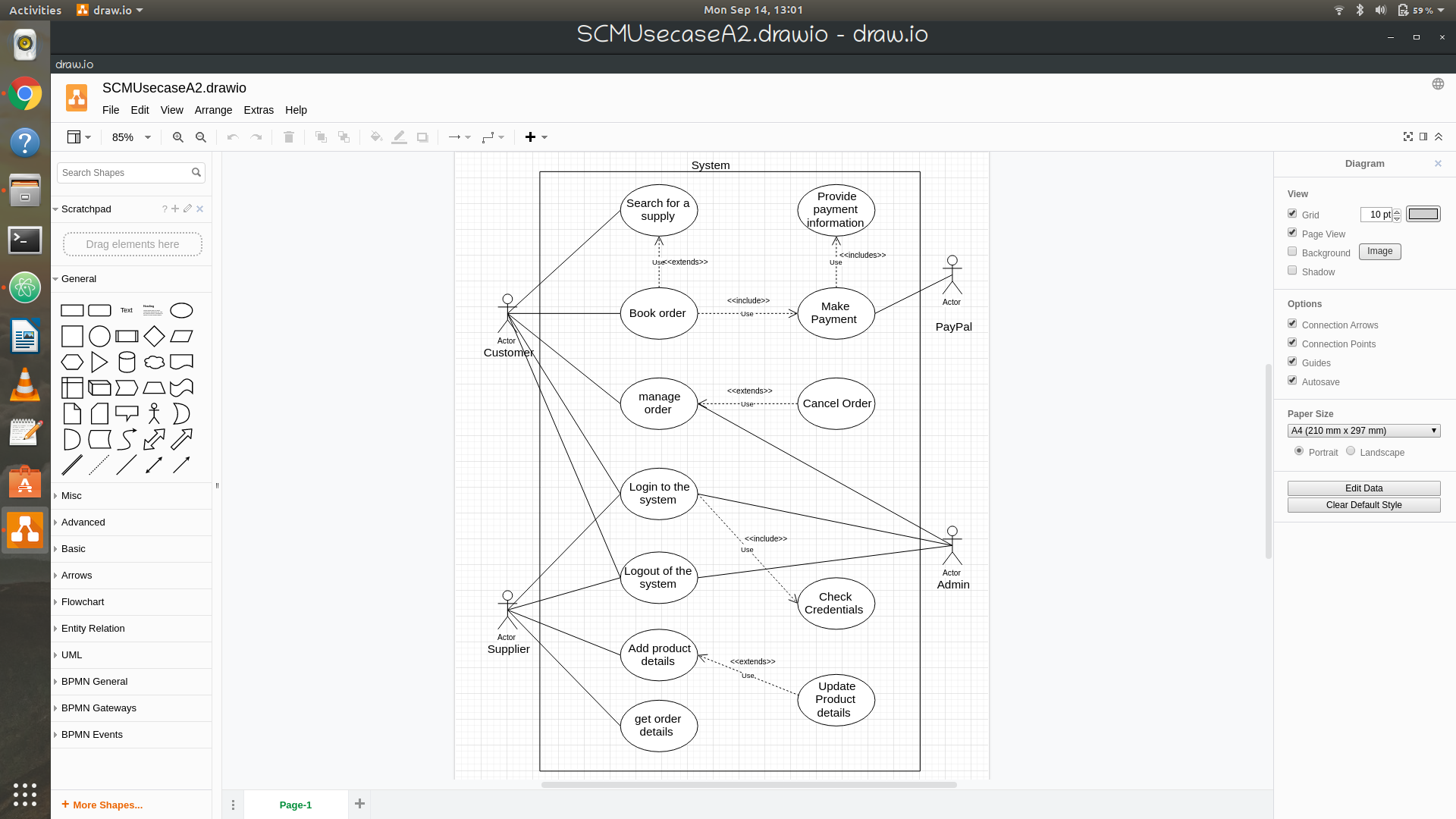
# Overall Description ( Mihir and Vaibhav )

## Product Perspective

Supply chain planning manages and provides visibility into upcoming activities. These tools allow users to create and update plans according to demand. Users can set up alerts when it appears there will soon be a stock-outage or an excess of product.

This system helps the users ( Customer and Supplier ) to manage their supply according to the current needs.

**USE CASE :**



**Login into the account:**

|  |  |
| --- | --- |
| User | System |
|  | main page is displayed |
| user clicks on login into the account |  |
|  | system displays login page |
| user enters the username and password |  |
|  | system validates the information and loads the user account |
| user logged into the account |  |

**Check Credentials:**

|  |  |
| --- | --- |
| User | System |
| Enters login information |  |
|  | System checks in the database if user already exists |
|  | If not redirects to register page |
|  | If present redirects to main page with user logged in |

**Search for a supply:**

|  |  |
| --- | --- |
| User | System |
|  | System displays the search window |
| User enters the product name |  |
|  | System verifies the product name |
|  | System searches for the product details in the database |
|  | System displays the search results |
| User selects the product |  |

**Book order:**

|  |  |
| --- | --- |
| User | System |
| User clicks on the desired product |  |
|  | System shows the information of that product |
| User enters the quantity of the product |  |
|  | System verifies the quantity |
|  | System displays the billing information |
|  | System transfers the user to the payment gateway |
| User completes the payment |  |
|  | System waits for the compilation of the payment |
|  | System updates the record in the database |
|  | System updates the payment log |
|  | System notifies the supplier about the order details |
|  | System notifies the status to the user via email or massage |

**Get Order Details:**

|  |  |
| --- | --- |
| User | System |
| User logins into his/her account |  |
|  | system shows user profile |
| User clicks on “Your Orders” button |  |
|  | system displays list of products ordered by user |
| user clicks on particular order to know the details |  |
|  | the details of particular order are displayed |

**Make Payment:**

|  |  |
| --- | --- |
| User | System |
| User confirms payment |  |
|  | System opens the third-party payment gateway. |
| User fills the amount to be paid. |  |
| User enters the account password to pay |  |
|  | System verifies the account |
|  | System accepts the payment |
|  | System informs user that payment successful |
| User confirms that payment is done |  |

**Provide Payment Information:**

|  |  |
| --- | --- |
| User | System |
|  | Shows all payment options |
| User clicks on preferred option |  |
|  | Displays fill detail page |
| User fills all the payment information |  |
|  | System verifies details |
|  | Shows payment confirmation message |
|  | Redirects to Order confirmation page |

**Manage Order:**

|  |  |
| --- | --- |
| User | System |
| User/admin logs into their account |  |
|  | System displays profile |
| Clicks on manage order |  |
|  | System shows all the orders of particular user |
| User can see the details |  |
| Admin can check if order is genuine or spam |  |

**Cancel Order:**

|  |  |
| --- | --- |
| User | System |
| User clicks on manage orders in user profile |  |
|  | Displays details of orders |
| Clicks on specific order |  |
|  | Order details displayed |
| User clicks on cancel order |  |
|  | Displays confirmation message |
|  | Cancels the order for user |

**Add Product Details:**

|  |  |
| --- | --- |
| User | System |
| User (supplier) logins in his/her account |  |
|  | System shows user profile |
| User selects option to add product |  |
|  | System opens new product option |
| User uploads product details(product images,description,price) |  |
|  | System accepts the product details |
|  | System adds details to the database |
|  | System notifies the user that product details are added. |
| User confirms the added product |  |

**Get Order Details:**

|  |  |
| --- | --- |
| User | System |
| User(supplier) selects Get Order Details |  |
|  | System searches the database for all customer who placed an order from this specific supplier |
|  | System displays all of these orders |
| User enters the order ID |  |
|  | System opens the order details |

**Log Out of the System:**

|  |  |
| --- | --- |
| User | System |
|  | profile of user is being displayed |
| user selects log out |  |
|  | system redirects to main page |

Use Case Specification :

**1.Login into the account :**

|  |
| --- |
| Use case: Login |
| Id:UC1 |
| Actors:   1. User ( Buyer and seller ) 2. Admin |
| Preconditions:  Users must be registered. |
| Flow of events:   1. System opens “Login page” 2. User enters login id and password 3. **<<include>>(Check credentials)** 4. The system displays the Main Form and the use case ends. |
| Postconditions:  There are no postconditions associated with this use case. |

**2. Check Credentials:**

|  |
| --- |
| Use Case: Check Credentials |
| ID : UC 2 |
| Actors:   1. User (Customer/ Supplier) 2. System |
| Preconditions:  User should enter the login details |
| Flow of Events:   1. System accepts the login details 2. System searches the database for these login details 3. If the login credentials are correct   3.1 System loads the user’s profile .   1. Else   4 .1 While the user enters correct credentials reload the login page. |
| Postcondition: There are no postconditions associated with this use case. |

**3. Search for a Supply:**

|  |
| --- |
| Use Case : Search for a Supply |
| ID: UC 3 |
| Actors:   1. Customer 2. System |
| Preconditions: Customer should be logged into his account |
| Flow of events:   1. Use case starts when customer clicks on search icon 2. Customer types the name of specific product 3. System searches the name into its database 4. If available then system displays the product 5. If user wants to order the supply   **5.1 <Book an Order>** |
| Postconditions:The customer can see the product searched |

**4. Book an Order:**

|  |
| --- |
| Use case: Book an Order |
| ID: UC 4 |
| Actors:   1. Customer 2. System |
| Precondition:   1. Customer should be logged into his account 2. Customers should select a specific product. |
| Events:   1. Customer specifies quantity of product to be ordered 2. System checks if a given quantity is available. 3. System provides billing details 4. **<<include>>(Make Payment)** 5. System updates the payment log and the database |
| Postcondition:User gets a notification that the order has been placed |

**5. Get order details:**

|  |
| --- |
| Use case : Get order details |
| ID : UC 5 |
| Actors:   1. Supplier 2. System |
| Precondition:   1. Supplier should be logged into the system |
| Flow of events:   1. Supplier selects the Get order details option 2. System searches the database for all the customer who have placed an order from this specific supplier 3. System displays all of these orders 4. Supplier enter the order ID 5. System opens the order details |
| Postcondition: There are no postconditions associated with this use case. |

**6. Make Payment:**

|  |
| --- |
| Use Case: Make Payment |
| ID: UC6 |
| Actors:  Customer |
| Precondition: Actor should have confirmed the order |
| Flow of events:   1. Actor clicks on Make Payment 2. System displays different payment options 3. Actor selects preferred Payment option 4. system redirects to Payment Gateway 5. **<<include>>(provide payment information)** |
| Postconditions: Actor successfully makes the Payment |

**7. Provide Payment Information**

|  |
| --- |
| ID: UC7 |
| Actors:   1. Customer 2. Paypal |
| Precondition:   1. Customer should be logged into the system. 2. Customer should have completed payment. |
| Flow of events:   1. Paypal accepts the request to provide payment information 2. Paypal searches the database for the payment 3. If the payment details are found   3.1 Display the payment information   1. Else   4.1 Paypal notifies that no such payment details were found. |
| Postcondition: There are no postconditions associated with this use case. |

**8. Add Product Details**

|  |
| --- |
| Use case: Add Product Details |
| ID: UC8 |
| Actors:   1. Supplier 2. System |
| Precondition:   1. Supplier should be logged into the system |
| Events:   1. Supplier chooses the option Add product /Update product details 2. if supplier selects update product details   **2.1 <Update product details>**   1. Else   3.1 Supplier specifies product details  3.2 System accepts the product details and adds to the database  3.3 System notifies supplier that product is added |
| Postcondition: Supplier gets notified that the product has been added |

**9. Update product details:**

|  |
| --- |
| Use Case: update product details |
| ID : UC 9 |
| Actors:   1. Supplier 2. System |
| Precondition:   1. Supplier should be logged into the system 2. Suppliers should have added product details |
| Flow of events:   1. Supplier selects the product to be updated 2. System displays that product’s details to be updated 3. Supplier updates the details(price, photos, information) as required 4. System accepts the updated details and updates the database accordingly |
| Postcondition: Supplier gets notified that the product details have been updated. |

**10. Manage Orders:**

|  |
| --- |
| Use case : Manage Orders |
| ID : UC10 |
| Actors:   1. Customer 2. System |
| Precondition:   1. Customer should be logged into the system |
| Flow of events:   1. Customer selects “Manage orders” 2. System displays orders history of the customer. 3. Customer selects a specific order by selecting order ID 4. System displays the order details and option to cancel order 5. If customer selects cancel order   **5.1 <Cancel Order>** |
| Postcondition: There are no postconditions associated with this use case. |

**11. Cancel Order**

|  |
| --- |
| Use Case: Cancel Order |
| ID : UC 11 |
| Actors:   1. Customer 2. System |
| Precondition:   1. Customer should be logged into the system 2. Customer should have made an order |
| Flow of events   1. Customer selects “Cancel order “ from the specific order details. 2. System confirms again that the order is to be cancelled 3. System asks the reason for cancelling the order 4. Customer specifies the reason 5. System updates the database with new order details. |
| Postcondition: System notifies the customer that the order has been cancelled. |

**12. Log out**

|  |
| --- |
| Use case: Log out |
| ID : UC 12 |
| Actors :   1. User (customer/supplier) 2. System |
| Precondition:   1. Actor should be logged into the system |
| Flow of events:   1. User Selects the Log out option 2. System confirms whether the User wants to log out 3. User Confirms to log out 4. System saves user details in database and logs out of the system |
| Postcondition: There are no postconditions associated with this use case. |

## Nouns and their categorization :

customer

Supplier

Product

Admin

stock

role

permission

Payment company

Payment details

Login id

Order id

Tech Supporter

User documentation

operating environment

SQL server

processor

operating system

internet

|  |  |  |
| --- | --- | --- |
| Relevant nouns | **Irrelevant noun** | **Fuzzy nouns** |
| customer | processor | User documentation |
| Supplier | operating system | operating environment |
| Product | internet | SQL server |
| order | Login id | Tech Supporter |
| Admin | Order id | transaction time |
| stock/inventory | web application |  |
| Payment company |  | permission |
|  | Retail shop |  |
|  | RAM |  |
|  | Hard disk |  |
|  | role |  |
|  |  |  |
|  |  |  |

UML CLASS diagrams :

## Product Functions

* Provide a simple customer service management process ( order )
* Establish and maintain customer rapport
* Provide payment services
* Manage orders
* Manage Supplies
* Provide Searching Facilities

## User Classes characteristics

Users of this product include customers, retailers, and staff. Customers can be members or visitors who can access the system. Customers need not require any technical background. Staff who will act as an administrator and will be controlling the overall system. They should have technical knowledge and background.

Possible User Classes that are anticipated to use this product:

1. Retail shops: All retail shops need to manage their inventory and have a record of every product in their inventory so that they can order additional products as per their needs.
2. Medical Retailers: The majority of medical shop owners and retailers shall use this product to order drugs and medicines from Warehouses of Medical companies or wholesale markets.

## Operating Environment

The application shall be hosted by IT Staff/Admin and accessible from any web browser on a majority of devices.The customers can access the application through a web browser having a stable internet connection.

## Design and Implementation Constraints

Hardware Requirements:

Processor: Intel Pentium Family

Operating System: Ubuntu

RAM: 256 MB

Hard Disk: 16 GB

Software Requirements:

Front-end: HTML, CSS and Javascript

Back-end: MySQL Database

Web Server: Apache Tomcat 5.1

Languages: Java using JSP and JDB

## User Documentation

**User manual :**

Demonstrating the process according to user classes

**On-line help :**

Live Tech support from the developers

**Tutorials :**

Video tutorials explaining the use cases and different processes according to user classes

## Assumptions and Dependencies

**Assumptions:**

Availability of high-speed internet

Availability of any Operating system as specified in the external interface requirements

...

**Dependencies:**

1. Third-party dependencies like PayPal ( for online payments )
2. IT Staff/Admin providing the necessary data needed from SIS through the central gateway web application.

# External Interface Requirements

## User Interfaces

The system is a web-based system, so it will interact with its users with a web component interface. The users move through pages containing activities or directions to some other activities.

There are three main modules in the supply chain management system. They are briefly introduced below

**Admin Module**: This module allows the administrator to check information regarding newly launched products, available products, and delivery of products to clients.

**Client (consumer) Module**: The client first gets registered into the SCM system and specifies the requirements to get the product built. The feedback given by the client to the administrator is processed with the help of this module.

**Dealer (supplier) Module**: It keeps track of various information regarding dealers including the record of items. Dealers can generate and update the list of items.

## Hardware Interfaces

The system has no hardware interface requirements.

## Software Interfaces

3.3.1 **SQL- Server**

The purpose of this interface is to The system must use the SQL server as its database.

3.3.2 **Internet Explorer**

The user should use this browser so that he can display the system and work on it.

3.3.3 **Google Chrome**

The user should use this browser so that he can display the system and work on it.

## Communications Interfaces

The SCM system will use TCP/IP as the main communication protocol through the internet network.

Also, it might communicate with external systems in the future, such as customer relationship management systems and HR systems. The scope of our system does not require us to interact with other interfaces but it can be customized.

# System Features ( Mihir and Vaibhav )

## Login:

Description and Priority:

Login features will be provided to both the client and the dealer.The user will be verified using password and only then he/she will be able to access the system.

Priority: Medium

Stimulus/Response Sequences:

1. Enter User Name and password
2. System verifies if the user has an account in the system .
3. If not then ask user to sign up for a new account.
4. Else the user gets logged in the system.

4.1.3 Functional Requirements:

REQ-1: users should have access to internet connection.

REQ-2: TBD

## Order:

Description and Priority:

Order feature should take an order for an client from the dealer.Once a client

access the system he/she can look for the required products from various dealers and then finalize the products and place the order.

Priority: High

Stimulus/Response Sequences:

1. User searches for required products.
2. Products from a dealer are chosen as per user’s preferences,
3. User places the order.
4. User ‘s order details will be added to the database.
5. Inform user that the order is placed successfully.

Functional Requirements:

REQ-1: users should have access to internet connection.

REQ-2:TBD

## Database features:

Description and Priority :

The database features are of high priority because it plays a vital role in the working of the application. It mostly includes storing data in the database, Retrieving data from the database and also effective searching through the database.

Priority: High

Stimulus/Response Sequences:

1. Add a record into the database ( supplier adding different about the different supplies and related information )
2. Search data from the database ( based on the unique ID assigned to a particular data point, the system will search data from the database)
3. Retrieve data from the database ( After searching if the data regarding particular entity is found, the data will be retrieved from the database )

Functional Requirements:

To perform all the database operations the system should satisfy the following requirements:

REQ-1: MySQL database ( of sufficient capacity )

REQ-2: JDBC

**4.4 Payment :**

Description and Priority :

The payment process will be done by a third party authority

Priority: High

Stimulus/Response Sequences:

1. User will click on the payment option
2. User will be redirected to the payment gateway provider by third party authority
3. After compilation of the process user will receive the message regarding the compilation of the process

Functional Requirements:

REQ-1: Payment functionality providing authority ( PayPal )

# Other Nonfunctional Requirements ( Onkar and Sangram )

Non-Functional Requirements are the requirements that are not directly related to specific functions delivered by the System.

## Performance Requirements

Performance is defined as how well the SCM system performs and fast the system must execute.

#### 14.1.1 Simultaneous Users

The SCM system shall support 15 simultaneous users against the central database at any given time

**14.1.2 Database Access Response Time**

The SCM system shall provide access to the legacy course catalog database with no more than 10-second latency.

#### 

#### 14.1.3 Transaction Response Time

The SCM system must be able to complete 80% of all transactions within 2 minutes. Here when the transaction response time is short it means the system response time is good or the system is good.

## Safety Requirements

The system is designed in modules where errors can be detected and fixed easily. This makes it easier to install updates and new functionality if required. So users don't have to worry about the safety of the system.

## Security Requirements

The system has only three roles for coordinators, suppliers, and customers only that make our system secure access online and these authentications will prevent illegal access. The information taken from the users will only be accessed by admin and information will not be shared anywhere publicly.

## Software Quality Attributes

### 14.4.1. Usability

Usability is defined as the ease with which a user can learn to operate, prepare inputs for, and interpret outputs of a system or component. This section lists all of those requirements that relate to or affect the usability of the system.

#### 14.4.1.1 Windows Compliance

The desktop user-interface shall be Windows XP/ Vista compliant, to have good usability.

#### 14.4.1.2 Designs for Ease-of-Use

The user interface of the SCM system shall be designed for ease-of-use and shall be appropriate for a computer-literate user community with no additional training on the system.

#### 14.4.1.3 Online Help

Each feature of the SCM system shall have built-in online help for the user. Online Help shall include step by step instructions on using the System. Online Help shall include definitions for terms and acronyms.

### 14.4.2. Reliability

Reliability is defined as the system that can be trusted to do all the instructions well and users can rely on it.

#### 14.4.2.1 Availability

The SCM system shall be available 24 hours a day and 7 days a week. This system shall be not more than 3% downtime, to have good reliability.

#### 14.4.2.2 Mean Time between Failures

The SCM system, mean time between failures shall exceed 300 hours.

## Business Rules

The Supplier shall verify themselves and commit to the best product service possible. Any serious problems reported by consumers or found by the administrator will lead to the removal of the supplier.

The consumers should not spam or fake orders.If this is found by the administrator the user will be banned from the system.

# Other Requirements

<Define any other requirements not covered elsewhere in the SRS. This might include database requirements, internationalization requirements, legal requirements, reuse objectives for the project, and so on. Add any new sections that are pertinent to the project.>

**Appendix A: Glossary**

<Define all the terms necessary to properly interpret the SRS, including acronyms and abbreviations. You may wish to build a separate glossary that spans multiple projects or the entire organization, and just include terms specific to a single project in each SRS.>

**Appendix B: Analysis Models**

<Optionally, include any pertinent analysis models, such as data flow diagrams, class diagrams, state-transition diagrams, or entity-relationship diagrams.>

**Appendix C: To Be Determined List**

<Collect a numbered list of the TBD (to be determined) references that remain in the SRS so they can be tracked to closure.>