Software Requirements Specification

for

Order Management System

Version 1.0 approved

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SEN 601 – Software Engineering Fundamentals

January 2016

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Revision History

Name	Date	Reason For Changes	Version

1. Introduction

1.1 Purpose

The purpose of this document is to provide a detailed description of the Order Management System (OMS). It will illustrate the purpose and features of the system, the interfaces of the system, what the system will do, the constraints under which it must operate and how the system will react to external stimuli. This document is release Version 1.0. This Software Requirements Specification will cover the part of the application that pertains to the functions of the Delivery Distribution Center's Customer Service department. It will not cover the functions of the application that pertain to the Store's Customer Service and Sales departments.

1.2 Definitions, Acronyms and Abbreviations

Term	Definition
SRS	Software Requirements Specification. A document that completely describes all of the functions of a proposed system and the constraints under which it must operate. For example, this document.
OMS	Order Management System. The application described in this document.
Stakeholder	Any person with an interest in the project who is not a developer.
User	Someone who interacts with the application. For this SRS, the user is defined as an employee of the Delivery Distribution Center's Customer Service department.
Order	The OMS application contains orders that need to be fulfilled, scheduled (rescheduled) and/or billed.
Customer	Customer for the purposes of this SRS is defined as a person who has an open order in the OMS application that needs to be fulfilled/delivered.
FMS	Field Management System. The Field Management system is a separate application that interacts with OMS. Once orders are scheduled, they fall into FMS to be routed/placed on a driver for delivery. This is a web-based system.
DDC	Delivery Distribution Center. The DDC is the warehouse that contains the

	inventory that goes out for delivery to fulfill customer orders.
RMS	Retek Merchandising System. This system is owned by Oracle. For the purposes of this document, RMS refers to the application that tracks the inventory held in the DDC. When an order is billed in OMS, OMS communicates with RMS to remove the inventory.

1.3 Intended Audience and Reading Suggestions

This document is intended to be read primarily by project managers, stakeholders, developers and testers. Other readers may include the users of the application and marketing staff. The remainder of this document will cover an overall description of the application, external interface requirements, system features, and other requirements. The overall description section of the SRS will include software functions, characteristics and constraints. External interface requirements covers requirements such as hardware and communication. System features describes the functions and major services provided by the software. Other requirements refers to performance and security requirements.

1.4 Product Scope

The Order Management System for the purposes of this SRS is a software application used for order maintenance and processing. The objective of the application is to provide a system that will keep track of all open orders that need to be fulfilled or billed by the company. The benefit is that one system will communicate with both FMS and RMS in order to accurately predict inventory availability and delivery dates. The goal of this system is to improve the customer experience by allowing for easier scheduling/re-scheduling and order modification. The OMS serves the corporate goals of efficiently tracking orders and ensuring all orders are billed, ensuring accurate profit analysis.

1.5 References

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2. Overall Description

2.1 Product Perspective

OMS is a system that will be used by stores, the DDC, and corporate. It communicates with both FMS and RMS. This is a new, self-contained application that relies on external applications (FMS and RMS) to accurately process orders. This SRS will cover the functions of the Order Management System as it pertains to the DDC. The user in this document will be the DDC's Customer Service Representative. The Order Management System will mainly be used for order processing – fulfilling and billing.

See Appendix A.

2.2 Product Functions

- User schedules/re-schedules order delivery date.
- User bills order.
- User modifies customer information.
- OMS sends delivery date information to FMS.
- OMS sends billed product information to RMS.

2.3 User Classes and Characteristics

For the purposes of this SRS, the only user class defined is the Customer Service Representative working at the DDC. This user class will have read/write privileges in OMS. They will be able to view and edit orders and customer information. The user will have billing privileges, but they will not have access to canceling orders. Lastly, the user will not be able to modify the order in regards to making changes to product (i.e., changing models in an order).

2.4 Operating Environment

The OMS application will run on Windows 7 Operating System. It does not have backwards compatibility with other operating systems and at the moment there are no planned updates for compatibility with Windows 8 or 10. The system must be installed on either a desktop or laptop with at least 2GB of RAM and 64G of hard drive space. An internet connection is required. OMS must communicate and coexist with both FMS and RMS.

2.5 Design and Implementation Constraints

The internet connection is a constraint for the application because it is required in order to schedule orders and check inventory availability. The user will also not be able to log into OMS without internet connection. OMS is constrained by FMS because it is dependent on FMS being up-and-running in order to schedule delivery dates. It is also constrained by RMS, relying on the system to be accurate in terms of inventory availability. Lastly, the customer is responsible for maintaining the system.

2.6 User Documentation

The product will be delivered with a detailed user manual and the company will provide the customer with support during a three-month rollout period. After this, the customer is responsible for any online support and training materials/tutorials.

2.7 Assumptions and Dependencies

One assumption will be that this application will be installed on Windows 7 Operating Systems only. The system is being developed for this operating system and will not be tested on any others. The system will be dependent on the functionality and accuracy of third-party software applications – FMS and RMS. Any updates or changes to either third-party system may cause instability for OMS.

3. External Interface Requirements

3.1 User Interfaces

When the user opens the OMS application, they will be required to log in. Every time the application is open, a log in box will appear, prompting the user for their credentials. If the user is logged in

to OMS on one PC, they will still need to enter their credentials when opening the application on another PC. The credentials that need to be entered consist of a username (the user's employee ID) and a password (an alphanumeric set of characters previously defined by the user).

For this SRS, there will be five additional user interfaces described: main startup screen, order display, schedule delivery screen, complete/bill order screen and modify customer information screen.

Main startup – Once the user logs in, they will be directed to the main OMS screen. In this screen they will be able to enter an order number or phone number to look up a particular order. An OMS order number consists of 14 numbers and a phone number entry requires the standard 10 digits. An invalid entry, such as entering a letter or exceeding the number requirement, will result in an error box appearing. The error box will read, "Invalid input. Please retry." If a correct order number or phone number is entered, the user will be directed to the order display screen.

Order display – The order display screen contains a customer's order and information. The screen shows the customer's full name, shipping address, phone number and email (if provided). The screen also shows the product that the customer has ordered, the price of the product and the delivery date. If there is no delivery date, on top of the order will read, "Order needs to be scheduled." On the left-hand side of the order display screen will be three options: Schedule Service Appointment, Complete Order, and Edit Customer Information.

Schedule delivery – This screen is reached from the order display screen. If a customer needs to be scheduled or rescheduled for delivery, the user will select the "Schedule Service Appointment" option from the customer's order number. This will send the user to a screen displaying a calendar; the calender will list all available appointment dates. If a date is not available, the calendar day box will have an "X" over it and be grayed out. The user chooses a date by clicking on a date box and then clicking the "Confirm Appointment" button located below the calendar. Once this box is clicked, it will send the user back to the order display screen with the delivery date updated.

Complete/bill order – This screen is reached from the order display screen. The user selects the "Complete Order" option from the left-hand side of the order display screen. The user is taken to a screen that lists the products on the order. The user may select individual products to complete by clicking on the check boxes next to the product names. Once the user has made their selection, they will click the "Complete Order" button at the bottom right of the screen. After this button is clicked, the user will be taken back to the order display screen that will be updated as complete or partially complete.

Modify customer information – This screen is reached from the order display screen. If a customer's information needs to be changed, the user will select the option "Edit Customer Information." This will take the user to a screen that lists the customer's name, shipping address, phone number and email in text box

fields. The user may edit the information and then click “Save Changes” at the button of the screen. This will take the user back to the order display screen with the updated information.

3.2 Software Interfaces

OMS is connected to FMS and RMS. When scheduling a delivery, OMS reads available delivery dates from FMS. Once a date is set, the information is sent via the network server to FMS to be routed. RMS contains a database of all products and their availability. If a product is unavailable, this information is sent to OMS and the product is placed in a backordered status. When an order is completed in OMS, the product information is sent to RMS for RMS to remove it from the database.

3.3 Communications Interfaces

When logging into OMS, the user is required to enter their username and password. The username consists of the user's employee ID number. Once the user's credentials are entered, it is checked against corporate's database of all active user ID/passwords. It returns a Boolean for valid username and/or password.

4. System Features

4.1 User Schedules/Re-Schedules Order Delivery Date

4.1.1 Description and Priority

The user schedules or reschedules a customer's delivery date. This is a high priority function of the OMS. The risk of this function not working would be customer dissatisfaction and potential loss of revenue from customers canceling orders.

4.1.2 Stimulus/Response Sequences

- User clicks “Change Service Appointment” option from order display screen.
- User is directed to a calendar screen.
- OMS populates the calendar with available delivery dates from FMS.
- User selects a date and clicks the “Confirm Appointment” button.
- User is taken back to order display screen with updated delivery date.
- OMS sends delivery date to FMS to be routed for delivery.

4.1.3 Functional Requirements

Precondition 1: User is logged in to OMS.

Precondition 2: User enters a valid order number or phone number to retrieve the order.

Precondition 3: User selects “Change Service Appointment” within an active/open order.

4.2 User Bills Order

4.2.1 Description and Priority

The user bills/completes an order in OMS; the order is closed out. This is a high priority function because it is tied to a company's profit. Also, if an order is delivered but not billed, it will still show as available in inventory, allowing for orders to be created against the product. This can lead to potential customer disappointment if inventory is not available to fulfill the order.

4.2.2 Stimulus/Response Sequences

- User clicks “Complete Order” option from order display screen.
- User is directed to a screen listing products on the order.
- User checks the check boxes of products that have been delivered.
- User clicks the “Complete Order” button at the bottom of the screen.
- User is taken back to order display screen with updated complete or partially complete order.
- OMS sends delivered product information to RMS to deduct from inventory.

4.2.3 Functional Requirements

Precondition 1: User is logged in to OMS.

Precondition 2: User enters a valid order number or phone number to retrieve the order.

Precondition 3: User selects “Complete Order” within an active/open order.

4.3 User Modifies Customer Information

4.3.1 Description and Priority

User goes into an order and edits the customer's information. This can be a considered a medium to high priority function. It is important to have correct customer information in order to avoid multiple delivery attempts due to having the wrong shipping address and/or

phone number to contact the customer. Multiple delivery attempts will cause the company money and labor hours.

4.3.2 Stimulus/Response Sequences

- User clicks "Edit Customer Information" option from order display screen.
- User is directed to a screen with text boxes containing customer name, shipping address, phone number, and email.
- User makes changes to one or more categories.
- User clicks the "Save Changes" button at the bottom of the screen.
- User is taken back to order with updated customer information.

4.3.3 Functional Requirements

Precondition 1: User is logged in to OMS.

Precondition 2: User enters a valid order number or phone number to retrieve the order.

Precondition 3: User selects "Edit Customer Information" within an active/open order.

4.4 OMS Sends Delivery Date Information to FMS

4.4.1 Description and Priority

Action is triggered by an order being scheduled for delivery. OMS sends delivery date information to FMS so that the order can be routed to a driver for delivery. This is a high priority function. OMS and FMS need to communicate correctly in order to avoid missed deliveries.

4.4.2 Stimulus/Response Sequences

- User schedules an order for delivery.
- OMS reads that a date has been set for the particular order.
- OMS sends the order information and delivery date to FMS.
- Order is populated into FMS to be routed for delivery.

4.4.3 Functional Requirements

Precondition 1: User is logged in to OMS.

Precondition 2: Order is scheduled.

Precondition 3: OMS and FMS are both operational and communicating.

4.5 OMS Sends Billed Product Information to RMS

4.5.1 Description and Priority

Once a product is delivered and the order is completed in OMS, OMS sends information about the product delivered to RMS. RMS deducts the product from the inventory database. This is a high priority function. If RMS is not accurate, orders can continue to be created against the unavailable product. This will lead to customers being promised a delivery date without the inventory available to fulfill the order.

4.5.2 Stimulus/Response Sequences

- User completes order in OMS.
- OMS reads that a product has been delivered.
- OMS sends product delivered information to RMS.
- RMS deducts the product from the inventory database.

4.5.3 Functional Requirements

Precondition 1: User is logged in to OMS.

Precondition 2: Order is billed.

Precondition 3: OMS and RMS are both operational and communicating.

5. Other Nonfunctional Requirements

5.1 Performance Requirements

- The search by order number and/or phone number feature needs to be highly visible to the user.
- Information listed in the order display screen needs to be readable.
- Options within the order display screen need to be readable and users should know what the option does by the title.
- The schedule date screen should have a calendar view that is large and readable. If a date is unable, it should be crossed out so that the user knows that it is not an option.
- The complete order screen should give the user the option to complete the whole order or individual lines within the order.

5.2 Safety Requirements

There exists the possibility of accidentally billing an order in error. There is no safeguard against this at the moment. The company will have to issue a refund or deliver the product outside of the system.

5.3 Security Requirements

Users have access to confidential information. All users sign a policy agreement stating confidentiality. Release of confidential information by a user will result in termination of employment and possible legal action against the user.

Access to OMS is restricted to current company employees. When opening the OMS application, a user is required to login to the system using their credentials (i.e., username and password). The username and password is validated through the company's database of all active employees.

User passwords are alphanumeric, containing 8 characters, at least one capital letter, and one number. No special characters are allowed. Corporate policy dictates that a user must change their password every 6 months.

5.4 Software Quality Attributes

- Reliability – System is expected to give accurate search results 99% of the time.
- Usability – System needs to be easy for the user to operate.
- Interoperability – System needs to communicate with third-party software.
- Availability – System needs to be running between peak hours of 3am PST to 12am PST with down times of less than 10 minutes.

5.5 Business Rules

In regards to this SRS, the business rules are relating to the user (i.e., DDC customer service representative). The user has read/write privileges in OMS. The user can complete orders and schedule open orders for delivery. Canceling of orders is not permitted by the user. The user can also update customer information. The user is not allowed to edit the order in terms of items ordered.

6. Testing and Metrics

6.1 Testing

6.1.1. Verification

Verification for this project will consist of group walkthroughs. During walkthroughs, someone other than the author goes through every sentence of the Order Management System – Design Specifications and every line of the Order Management System – Code. This will be done in the form of a group meeting review. Two Quality Assurance personnel will be chosen by the QA Manager to take part in the review. Both QA's will submit a review report to the QA Manager listing any defects that were uncovered or any suggestions for improvement. The QA Manager will review the reports, unsure any uncovered defects are corrected and at that point decide with another peer review is necessary.

6.1.2. Validation

Validation will include both project testing and product testing. Project testing will consist of unit testing and user acceptance testing. Product testing will be functional/positive testing.

Unit testing will be conducted by the author of the code and also by a designated QA. The QA Manager will provide the test cases, guidelines and code to the tester. The tester executes all test cases, logs the results (indicating a pass of fail) and turns in the log to the QA Manager. User acceptance testing (UAT) is conducted to prove that the software functions as it is supposed to, in accordance with the requirements. The desirable outcome is to receive a sign-off that the software is acceptable. The QA Manager designs a test plan and test cases based off of the project requirements.

Functional testing is synonymous with positive testing. Functional testing tests the software to ensure that all its functions are working correctly. This type of testing tests the software under its intended use conditions to make sure that it works as it was designed to work. This type of testing will be carried out by the developer, QA Manager and QA tester.

6.2 Metrics

- Program execution time
- Program load time
- Maintainability index

Appendix A: Analysis Models