Web Order Project
Enterim LLC
Software Requirements Specification (Example)

Change History

Date	Summary	Person
11/8/06	Started work on section 1, 1.1, 1.3, 1.5. Added words to the Appendix A Glossary	Paul Drumm
11/12/06	5.0 quality requirements	Paul Drumm
11/12/06	Section 4 and 2.4. Added Functional requirement 3.1. Changed version to HW2-3.	Paul Drumm
11/12/06	Added Sections 2.1, 2.2, 2.3	Paul Drumm
11/13/06	Revised 5.0 and spelling in 1.1 & 2.4.7	Paul Drumm
11/13/06	Added to Section 3 - Sections 3.3.1 – 3.3.4, Warehouse Features; Updated UC Diagram in 2.2 (removed "Process Customer Returned Item" UC); Updated text in 2.2	Paul Drumm
11/13/06	Modified Section 3.1, added 3.1.3, 3.1.4, modified formatting on 4 and 2.4. Updated TOC	Paul Drumm
11/14/06	Modified section 2.2 content; Added sections 2.6 and 2.7	Paul Drumm
11/14/06	Added 2.5, 3.1.5-3.1.6,framework for 3.1.7-3.1.16, updated TOC	Paul Drumm
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11/16/06	Added 3.2.1 – 3.2.8	Paul Drumm
11/16/06	Merged the two V13 documents	Paul Drumm
11/16/06	Added to Appendix A: Glossary; Revised Section 2.2 adding back all original Customer UCs	Paul Drumm
11/17/06	Reworked section 1	Paul Drumm

11/28/06	Fixed 5.4, added to glossary	Paul Drumm
12/4/06	Added Figures 1 and 2 to Appendix C	Paul Drumm
12/5/06	Updated Appendix E, 2.4.1,3.1.4.3, 3.1.6.3	Paul Drumm
12/12/06	Removed “Vendor” from User Classes, and eliminated all vendor/system interaction (except automated receipt of POs). Added Appendix B – UCs; Updated Section 2.2 UC Model; Added issues to Appendix D; Added content to Section 6	Paul Drumm
12/13/06	Removed UC 4.6. Merged report UCs into one “View and Print report” UC. Minor changes to section 1 .and 3.4.6.1	Paul Drumm
12/13/06	Added glossary definitions. Added references to XP limitations. Fixed numbering in 4.4. Added Windows XP to issues list	Paul Drumm
12/14/06	Spelling/Grammar revisions	Paul Drumm

Table of Contents

1 Introduction

1.1 Purpose

The SRS document describes the functions and requirements of the WebOrder project in a clear and precise manner. Its purpose is to provide a detailed overview of the requirements and features of the system. All the requirements in this document are to be implemented in the first release of the product, version 1.0.

1.2 Document Conventions

No special typographic conventions are used in this report. Acronyms and abbreviations used in the document are explained in Appendix A.

1.3 Intended Audience, Reading Suggestions

The intended audience for this document consists of all stakeholders including designers, architects, developers and testers. All technical descriptions and design can be tracked to the use cases and requirements of the project. The document shall serve as a guide through the initial architecture and design phase as well as development and QA process.

1.4 Project Scope

The scope of the project is to develop an order fulfillment system that can replace ToolCo's existing systems.

The final product will allow ToolCo's customers to browse items and place orders online via a WEB interface using a standard web browser. The customers will be able to view stock levels at the time of order, if an item is not in stock at the time of ordering a back order will be placed and the back orders are given priority as the warehouse is restocked. The system shall be available at the customer's convenience and thus is designed for an uptime of 24/7/365. Customers will be able to pay by credit card, and also track and cancel orders after the order has been placed.

The system will provide ToolCo's sales representatives with the possibility to view and edit item details via a WEB interface where maintenance of item details and online content can be performed without any knowledge of HTML.

Warehouse workers will be able to generate pick and pack lists. A pick list can be generated from one or multiple orders and will be sorted to keep the travel through the warehouse at a minimum.

A stock replenishment module will ensure that stock levels are at optimal levels at all times. As stock levels dips below preset threshold values an order will automatically be placed with the item vendor.

See the scope document for details regarding the Scope and Vision of the project.

1.5 References

WebOrder Vision and Scope documentation, WebOrder Vision.doc

Wiegers, K.E., "Software Requirements, second Edition", 2003, Microsoft Press, ISBN 0-7356-1879-8

2 Overall Description

2.1 Product Perspective

WebOrder is a new system replacing a mix of current manual and automated processes used for the online ordering of tools, construction, home improvement and auto supplies. The new, integrated system will provide a more effective, streamlined solution for displaying product lines, handling customer orders, filling those orders and maintaining inventory levels. The context diagram in figure 2.1 shows the external entities interacting with the system and presents boundaries for release 1.0 of the WebOrder system. The system will be developed in a way to accommodate enhanced features for subsequent versions.

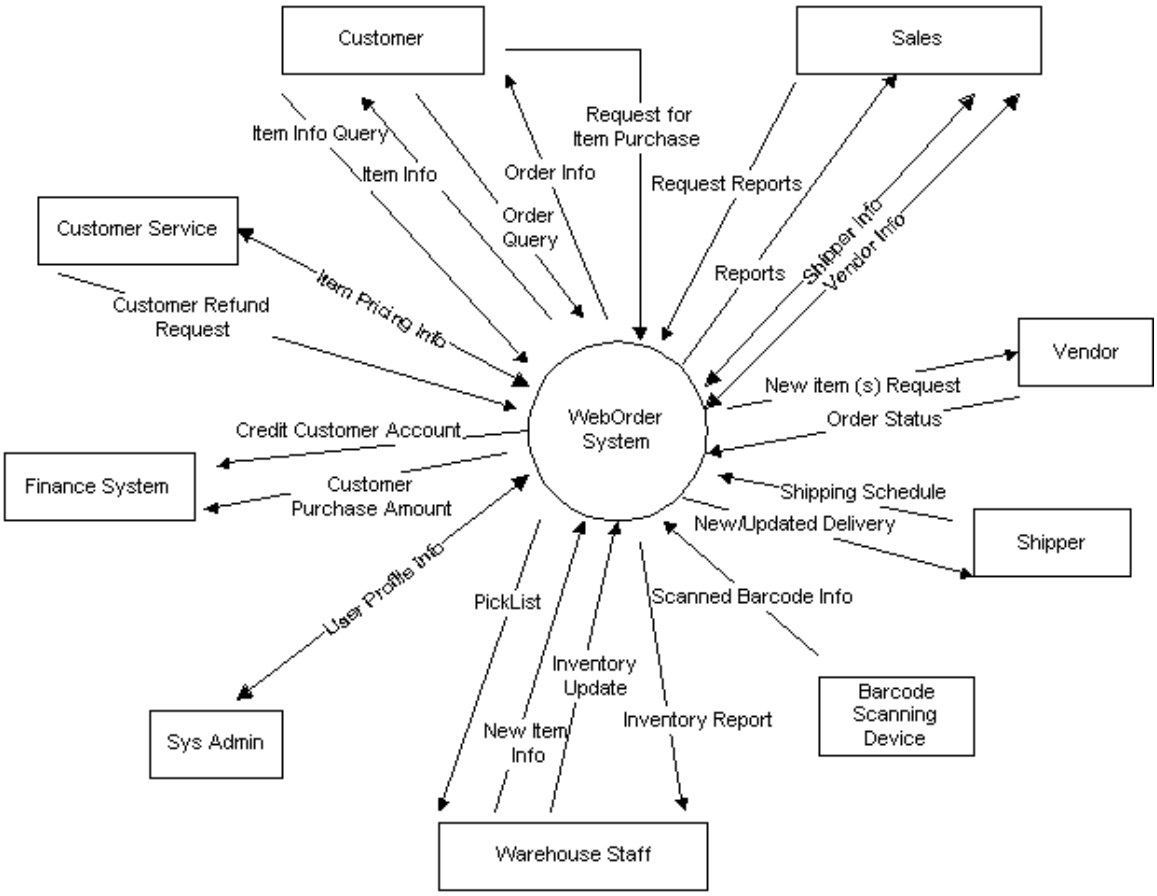

Figure 2.1 Context Diagram for Release 1.0 of the WebOrder System

2.2 Product Features

Primary WebOrder features include:

- Product Line Description – Convenient categorization of inventory items makes browsing or searching easy.
- Customer Ordering – Registered users can browse and purchase items as well as track orders.
- Order Fulfillment – Warehouse workers can use the system to streamline the process for filling customer orders.
- Inventory Management – Inventory level adjustments and processing of newly received items from suppliers can more efficiently be handled.

The use-case diagram in figure 2.2 illustrates major grouping of those features into high-level requirements and their interaction with external actors. The external actor's interaction with one or more use cases in a group is represented by the association to an entire group, rather than individual use cases, however, for some of the actors, direct relationships are expressed.

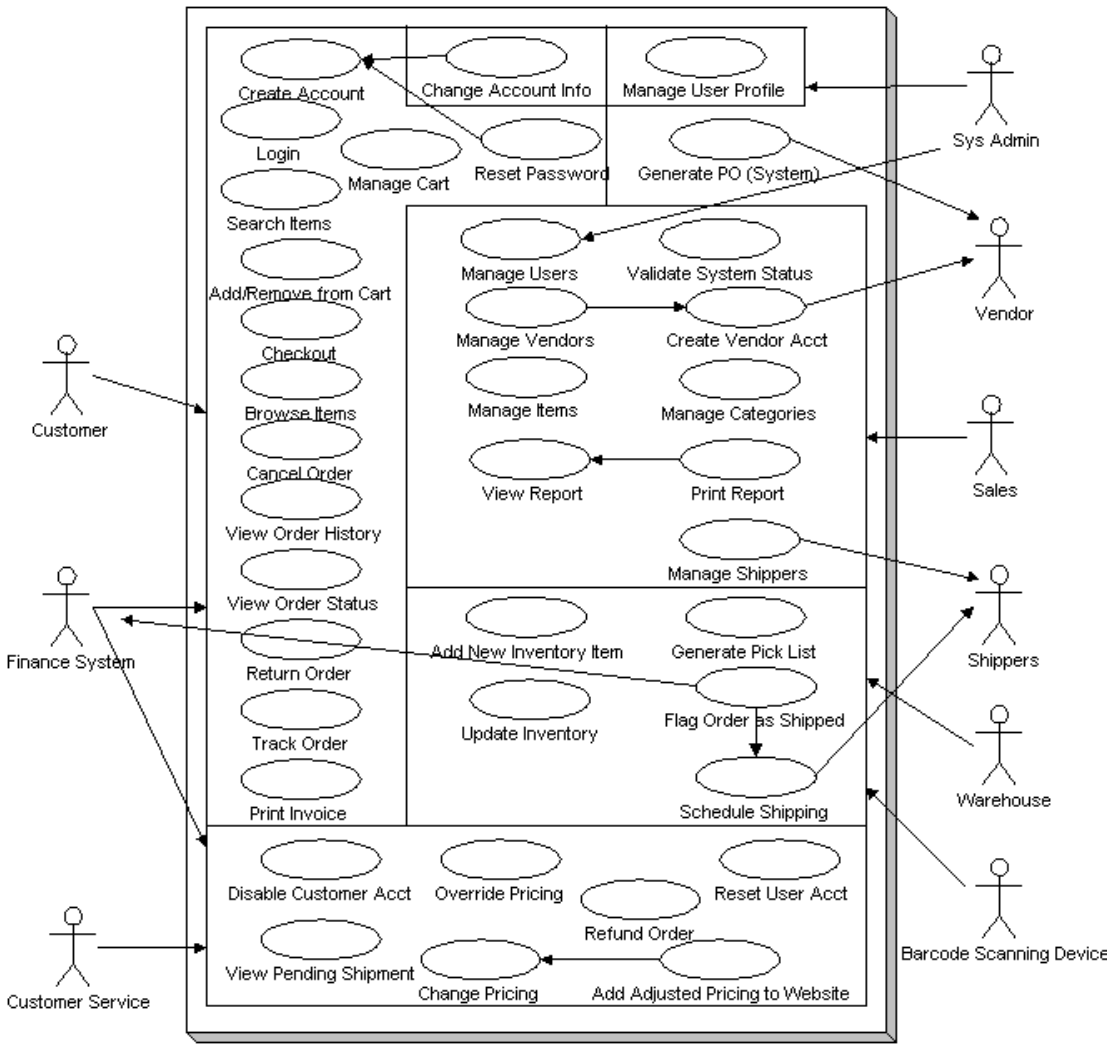

Figure 2.2 Use Case Diagram for Release 1.0 of the WebOrder System

2.3 User Classes

User Class	Description
Customer	A customer of the WebOrder System is a registered user logged into the system via a web browser, who can search for and purchase construction, home improvement, and automotive tools/supplies for delivery within a specific timeframe. Customers are required to create new user accounts prior to using the system. A customer can order multiple items, identify preferred payment and shipping methods, securely make payments, and accurately track the status of all orders they've placed. With provided access to customer service representatives, a customer can use their assistance for the online purchasing process as needed.
Customer Service Representative (CSR)	An employee who communicates with the customer in an effort to assist with the online purchase of one of more items is a Customer Service Representative (CSR). A CSR can also support a customer with issues regarding his/her personal user account, as well as assist with discrepancies in pricing. The CSR however, must be properly authorized (i.e. A CSR Manager), or obtain appropriate approval for negotiating and implementing price changes.
Warehouse Staff	The Warehouse Staff consists of stock clerks, shipping and receiving clerks, and stock pickers who pull items from inventory to fulfill orders. Warehouse staff members are responsible for pulling items for customer orders, packaging items in appropriate shipping containers, and shipping those items via scheduled pickups and deliveries. Warehouse workers also perform tasks involving the receipt of new inventory items, stocking the shelves, the adjustment of stock item information and location information, and, the entry of new stock items into the inventory database.
Sales Staff	Both Sales Representatives and Sales Managers are members of the Sales Staff. New vendor and shipper accounts are established through this user class; the sales representative manages all vendor and shipper information. Sales Representatives and Managers are direct links to the vendors regarding price. The Sales Staff will handle price adjustments due to promotional marketing, extended discounts, and other special offers related to pricing.
System Administrator (Sys Admin)	The System Administrator (Sys Admin) is a user who is properly authorized to manage and maintain the system. In this particular company, the roles and responsibilities of the Sys Admin overlap (and are one in the same) with the Network Administrator. The Sys Admin is responsible for the system security as well, and performs the task of updating user profiles as needed.

2.4 Operating Environment

2.4.1 The WebOrder System web servers shall operate on Windows 2003 SP1 running load balanced (WLBS) IIS6 web servers and the .NET 2.0 Framework in order to satisfy the requirement for: “Servers must have 24/7/365 availability. They must maintain integrity of all databases as found in the vision statement. Windows XP could not be used due to the limited web client connections it would impose (10) on the system when using the site.

2.4.2 The WebOrder System shall support the following web browsers: Internet Explorer versions 5 and greater, Firefox version 2 and greater.

2.4.3 The WebOrder System shall support users that geographically reside in USA.

2.4.4 The WebOrder system shall support en-US code pages (English reading).

2.4.5 The WebOrder system shall be located behind the corporate Checkpoint 1 firewall in the DMZ and the firewall must allow HTTP over port 80 to the web servers, HTTPS over 443 to the web servers, and SMTP over port 25 outbound from the web servers.

2.4.6 The WebOrder system shall be on a Verizon frame relay circuit capable of sustaining 150 kb/s throughput in both directions at the same time.

2.4.7 The WebOrder system WEB UI shall initially operate on two separate web servers to balance the load.

2.4.8 The WebOrder system database servers will run on two Windows 2003 SP1 servers running a SQL 2005 database cluster in active/passive mode.

2.5 Design and Implementation Constraints

2.5.1 The system shall use the current corporate standard Microsoft SQL 2005 Enterprise database engine.

2.5.2 All HTML code shall conform to the HTML 4.0 standard.

2.5.3 All scripts shall be written in java script.

2.5.4 The web site shall be developed in ASP.NET 2.0 with C#.

2.5.5 The machine keys shall be the same on all web servers that control state encryption.

2.5.6 There shall be no ad hoc queries encapsulated in the web pages and all data queries shall be done calling stored procedures encapsulated in transactions.

2.5.7 Microsoft’s Published Exception Handling block shall be incorporated into all methods.

2.6 User Documentation

2.6.1 The system shall include an online HTML-based help system to describe features, to provide assistance and instructions for properly using system functions.

2.6.2 The system shall provide an online user manual accessible to users with proper access. The online manual shall include online tutorials.

2.7 Assumptions and Dependencies

2.7.1 Assumptions

2.7.1.1 Customers making online purchases using the WebOrder System will have valid user accounts in the system.

2.7.1.2 The transition from the legacy online ordering system will not affect outstanding order statuses, shipping statuses, inventory item records, registered user account information, or customer account histories.

2.7.1.3 Inventory levels exist and will be used in the system.

2.7.1.4 Existing vendor accounts exist in the system.

2.7.1.5 Account information for one or more shipping companies exists in the system.

2.7.1.6 Employees using the system for standard business operations will be trained to properly use the system features related directly to their roles and responsibilities.

2.7.1.7 Proper levels of authorization and authentication will be established for employees to access both the application and particular system information directly related to their role(s).

2.7.1.8 The system will make use of the data already available in the legacy system; the data is properly formatted and loaded.

2.7.2 Dependencies

2.7.2.1 Customers must have valid email accounts and internet access to receive order status notification.

2.7.2.2 Customer financial transactions are managed through an independent financial system and charged or credited to user credit card accounts through a third party system (i.e. credit card company).

3 System Features

3.1 Customer Features

3.1.1 Add To Cart

3.1.1.1 Description and Priority

Customer selects “Add to Cart” from an item page in order to add that item to his/her shopping cart. Priority = High.

3.1.1.2 Stimulus/Response Sequences

Stimulus:	Customer selects “Add to Cart” from item page.
Response:	System adds item to cart and the cart icon increments the quantity shown by 1.

3.1.1.3 Functional Requirements

Cart.Add:	The system shall let a customer add an item to his/her cart from

	either the item list page or the item detail page.
Cart.UpdateIcon:	The system shall update the cart item by incrementing the counter by 1.

3.1.2 Browse Items

3.1.2.1 Description and Priority

Customer browses items from web site categories and subcategories. Priority = High.

3.1.2.2 Stimulus/Response Sequences

Stimulus:	Customer selects a Category from website menu.
Response 1:	System shows available sub categories for category if they exist.
Response 2:	System shows summary of available items for that Category.
Stimulus:	Customer selects a Subcategory from website.
Response 1:	System shows available sub categories for category if they exist.
Response 2:	System shows summary of available items for that Subcategory.
Stimulus:	Customer selects an item from website.
Response 1:	System shows details of item.
Stimulus:	Customer selects a new group of items from the website.
Response 1:	System shows next page of summarized items.

3.1.2.3 Functional Requirements

Category.Load:	The system shall load the categories from the database and display them on the web page when a page loads.
Category.OnSelect	Event handler for selecting a category. Calls SubCategory.Load and Item.Load
Subcategory.Load:	The system shall load the subcategories if they exist and show them as sub-elements of the main category.
Item.Load:	The system shall load the items, if they exist, for a category or subcategory and show them in the main content area displaying a 35x35 gif, Summarized Details between 20 and 250 characters, price, and availability. 10 items are displayed per page. If there are more than 10 items, then the items are paged out and listed at the bottom of the page as groups of items in listings of 10 each, i.e. 11-20, 21-40, etc., at the bottom of the page along with first and last data page items. The system shall display a “View All Items” control.
Item.OnSelect:	Event handler for selecting an item when an item is clicked on from

	the item list. Calls ItemDetail.Load and any advertising utility routines to display advertisements (future enhancement).
ItemDetail.Load:	The system shall displays details about the Item Selected in the Content Area. Shows detailed description up to 1000 characters in length, a large gif of the product at 200px*400px, price, and availability.
Item.PageChange:	The system shall display a new page of items when customer clicks on further item pages (11-20, 21-30, etc.) that are at the bottom of the screen.
Items.ViewAll	The system shall display all items on one page from the current data set instead of showing the data page groups.

3.1.3 Cancel Order

3.1.3.1 Description and Priority

Customer Cancels Order Priority = Medium.

3.1.3.2 Stimulus/Response Sequences

Stimulus:	Customer selects Cancel from Order History page which displays the customer's orders on the website.
Response:	System shows if cancellation was successful or not.

3.1.3.3 Functional Requirements

Menu.Load:	The system shall load the menu system, which contains "Manage Account" when a page loads.
ManageAccount.OnSelect	Event Handler for Selecting "Manage Account". Calls Login.Validated and then redirects to the ManageAccount page.
Login.Validated:	The system shall validate if the user has logged in. If they have not then the system takes them to the login screen via Login.Redirect.
Login.Redirect:	The system shall redirect an invalidated user that has no authentication context to the login page carrying with it the token to the page they need authentication context to so they can return automatically after being revalidated.
Login.Load	The Login screen loads with a username and password text controls. A navigable link is shown to create an account. A control saying "Login" is displayed for the user to push.
Login.Login:	The user logs in with a username and password

	and he/she is validated as an authenticated user or asked to retry. If a redirect token was passed to the login page then the user is redirected back to the page they attempted to access prior to authentication via Login.Validated.Redirect.
Login.Validate:	The user has been validated and a user token generated to be passed with users session context.
Login.Validated.Redirect	The user is redirected back to the original page he/she tried to access with out being validated and having a token.
Customer.ManageAccount.PageLoad	Displays personalized account management screen for user after Login.Validated is called. This screen shows various account management tools one of which is Order History.
OrderHistory.PageLoad	Displays order history via OrderHistory.OrderSummary for that user after Login.Validated is called else redirects to login page.
OrderHistory.OrderSummary	A summarized listing of orders is shown chronologically by date which contains, order number, order status (in progress, shipped, back ordered), and cost to customer. The Order Numbers are hyperlinked to the Order Details. A cancel order control is also displayed for unshipped orders. . If there are more than 10 items then items are paged out and listed at the bottom of the page as groups of items in listings of 10 each, i.e. 11-20, 21-40, etc., at the bottom of the page along with first and last data page items.
OrderDetail.Load	Displays details about the Order. Shows order number, ordered items and quantity of each, shipping method selected, order status, and all shipping/tracking information about the order including partial shipments. A Cancel control is also shown if order has not been shipped.
OrderSummary.PageChange:	Displays new page of order summaries when customer clicks on further item pages that are at the bottom of the screen.
Order.Cancel	Cancel Order and display success. The “Cancel Order” control is only displayed if the order has not been shipped.

3.1.4 Change Account Info

3.1.4.1 Description and Priority

Customer selects “Change Account Info” from Account Management Screen. Priority = High.

3.1.4.2 Stimulus/Response Sequences

Stimulus:	Customer selects “Change Account Info” from Account Management page.
Response:	System shows all account information on one page.
Stimulus:	Customer updates any/all personal data on page and select “Update Account Info”.
Response1:	System validates data and shows all account information on one page and message in RED appears at top of screen that says “successful updated information”.
Response2:	System validates data and shows all account information on one page and message in RED appears at top of screen that says “unsuccessfully updated information” and red asterisks and explanations appear beside each piece of problem data.

3.1.4.3 Functional Requirements

ChangeAccountInfo.Select:	The system shall direct the customer to the Change Account Info page after validating the customer is validated via Login.Validated.
ChangeAccountInfo.Update	The system shall call the ChangeAccountInfo.Validate to validate the data and if successful call ChangeAccountInfo.ShowSuccess
ChangeAccountInfo.Validate	All personal data shall be validated from the page according to the rules for each field. If it fails it marks each invalid field with a red asterisk and explanation in red text as to what the problem is. It also displays a message in red that says “unsuccessfully updated information”.
ChangeAccountInfo.ShowSuccess	Shows “Successfully Updated Information” in Red when the information was validated from the ChangeAccountInfo.Validate.

3.1.5 Checkout

3.1.5.1 Description and Priority

Customer selects “Checkout” from Shopping Cart Screen or Main Menu. Priority = High.

3.1.5.2 Stimulus/Response Sequences

Stimulus:	Customer selects “Checkout” from Shopping Cart or Main Menu

Response: System shall show all items in shopping cart and shall display verbiage telling the customer to validate the accuracy of the order. The system also displays the subtotal.

Stimulus: Customer validates order and makes changes to Shopping Cart if necessary and then selects “Go To Shipping Address – Step 2 of 5” or Update Order depending on which route they took.

Response 1: System shows shipping page and customer is able to select current address to ship to or to enter a new one in the controls provided.

Response 2: System shows updated table of items with updated quantities.

Stimulus: Customer leaves default address or selects new one and then the Customer selects “Go To Shipping Method – Step 3 of 5.

Response: System validates address and if correct then moves to shipping method page else it s the customer to correct errors on the page. The Shipping method page shows various methods of shipping available for that order based on the size and weight of the objects selected. The cost is displayed for each one.

Stimulus: Customer selects shipping method.

Response: System shows summary page again with all items and subtotal, the shipping method, taxes if applicable, and the total charges. The customer is also shown that by pushing the back button on his/her browser that they can go back and change the order one last time. Customer may select another shipping method at this time and recycle through the summary page again.

Stimulus: Customer selects “Go To Payment Screen – Step 4 of 5”

Response: System shows payment screen page and customer is able to select current credit card on account as payment or to enter a new one in the controls provided.

Stimulus: Customer select “Pay for Order – Final Step 5”

Response 1 success: System shall validate credit card info and shows confirmation page with order number and summary of order. System shall show to customer that to print a hard copy then use the print function of the browser. System shall email the customer a copy of the order confirmation. In a separate transaction the system shall update inventory, queue the items in the pick list, and queue the pack list.

Response 2 failure: System shows information on any error with the transaction and provides customer service information along with ability to cancel the order or to back to payment screen to put in new credit card information.

3.1.5.3 Functional Requirements

CheckOut.Select	The system shall redirect the customer to the checkout screen after they have been validated via Login.Validated
CheckOut.Load	The system shall load all details about the order in a table on the page from the shopping cart. The item#, quantity and cost shall be displayed in the table. The subtotal will be displayed under the cost column. The system shall display verbiage directing the

	customer to validate his/her order and to update/delete/remove any items and to select "Update Order" to update the table list. The system shall also display verbiage telling the customer that he/she may continue shopping by selecting a category from the website menu. The system shall also display a control that instructs the user to go to the next part of the check out process "Go to Shipping Address – Step 2 of 5".
Checkout.Update	The system shall update the quantities in the table and remove items that have 0 quantities in them. The system shall recalculate the subtotal.
CheckOut.ShippingAddress	The system shall display the current shipping address of record for the customer along with secondary controls for entering a different shipping address when the shipping address page is displayed. A control showing "Go to Shipping Method – Step 3 of 5 " is displayed.
CheckOut.ValidateAddress	When the "Go to Shipping Method – Step 3 of 5 " the system shall validate the address if it is not the default address and redirect back to the page if the address is wrong and give the reason to the user for why the address is incorrect. If the address is validated the customer is directed to the shipping method page.
CheckOut.Shipping.Load	The system shall display various shipping methods applicable to the order along with the cost for each shipping methods/tracking methods along with the current subtotal + applicable taxes+ the grand total. The system also shows a control that says "Go To Payment Screen – Step 4 of 5". The default shipping method should be USPS with the lowest class for that weight and size.
CheckOut.ShippingUpdate	When the user selects a shipping method the page is refreshed showing the new total.
CheckOut.PaymentLoad	When the customer selects the grand total. The system shall also show a control that says "Go To Payment Screen – Step 4 of 5". The system shall load the payment screen, which displays the default credit card information selected as the default and also controls for entering in a different credit card information. A control that says "Pay for Order – Final Step 5" is also displayed on the page.
CheckOut.Confirm	When the "Pay for Order – Final Step 5" is selected the system shall validate the credit card info for correctness. If the new credit card info is not acceptable the screen is redisplayed. The system shall display a confirm button on the screen giving the customer a message that this is the last screen and his/her account will be charged after the confirm control is selected.
Checkout.Payment	After the confirm control is selected the user's credit card issuer is called and the transaction proceeds. The user is directed to a success or failure screen that indicates they can press the back button on his/her browser to go back and try another credit card or he/she can call customer service. If the transaction is a success

the customer is shown that it was as success, that an email will be sent to the email address on record and that they can use the browsers print function to print a copy of the statement for his/her records.

3.1.6 Create Account

3.1.6.1 Description and Priority

Customer selects “Create Account“ from Main Menu or from login screen. Priority = High.

3.1.6.2 Stimulus/Response Sequences

Stimulus:	Customer selects “Create Account” from screen.
Response:	System shall display create account screen.
Stimulus:	Customer enters required data onto the page and selects “Create Account”.
Response 1:	System shall display all the account info and email a copy of the username and password to the user.
Response 2:	System shall display invalid data that the user needs to resubmit.

3.1.6.3 Functional Requirements

CreateAccount.Load:	A screen displays controls that allow for text entry of the following: Company: Name, address, shipping address, billing address, fax, phone. Authorized employee: Username and password, phone, address, password hint, email. Corporate/Personal credit card number, name, issuer, validation date. The system shall also display a “Create Account” control to select when the user is finished.
CreateAccount.Validate:	When the “Create Account” control is selected, the system shall validate the information on the screen. The credit card issuer is validated that the card is valid. If the data is successfully validated the user is shown the account info and an email is sent to the email of record. If the data is invalid the user is shown on the screen what items are invalid and told to correct them.

3.1.7 Login

3.1.7.1 Description and Priority

User selects Login from Main Menu or is redirected to login screen because the page needs authorization credentials. Priority = High.

3.1.7.2 Stimulus/Response Sequences

Stimulus: Customer selects login button after reaching the login page.

Response: System shall validate user's credentials.

3.1.7.3 Functional Requirements

Login.Load:	The Login screen loads with a username and password text controls. A navigable link is shown to create an account. A control saying "Login" is displayed for the user to click on. The system shall also display "Reset Password" and "Create Account" with navigable hyperlinks.
Login.Login	The user logs in with a username and password and he/she is validated via Login.Validate as an authenticated user or asked to retry.
Login.Validate:	The user has been validated and a user token is generated to be passed with the user's session along with any groups he/she may belong to if he/she is a corporate user.
Login.Validated.Redirect	If a user had tried to access a page before he/she had logged in, then the user is redirected back to the original page he/she tried to access after he/she successfully logs in.

3.1.8 Print Invoice

3.1.8.1 Description and Priority

Customer can print an invoice for an order from the order history page. Priority = Low.

3.1.8.2 Stimulus/Response Sequences

Stimulus: Customer selects Print Invoice from Order History, Order Status screen.

Response: System shall reformat the page to be able to print to a printer.

3.1.8.3 Functional Requirements

OrderDetail.PrintInvoice:	This shall reformat the output of the details into a 6" x 8" table across multiple pages if necessary, without any graphics. The system will also instruct the user to use his/her browser's print function to print the screen. The output shall be placed in a new browser window.
OrderDetail.PrintInvoice.Close	There shall be a control in the new browser window that allows the user to close the window. The control should just show the word "CLOSE". The control background should be white to blend in with the page.

3.1.9 Manage Cart

3.1.9.1 Description and Priority

Customer selects “Manage Cart“ from Main Menu. Priority = High.

3.1.9.2 Stimulus/Response Sequences

Stimulus:	Customer selects Manage Cart.
Response:	System shall load the Manage Cart screen with a list of all items in the cart.
Stimulus:	Customer increases or decreases the quantity of an item in the cart and selects “Update Cart”.
Response:	System shall update the cart items and display a new subtotal for the items in the cart. If an item has “0” for a quantity then it will be removed.
Stimulus:	Customer selects “Remove Item From Cart”.
Response:	System shall update the cart items and display a new subtotal for the items in the cart.

3.1.9.3 Functional Requirements

ManageCart.Load:	The system shall load all the items from the cart into a table on the screen. The item#, description, cost, and quantity are displayed as a single line item in the table. If there are more than 10 items then a data paging display will show at the bottom of the screen allowing the user to page to the next 10 items. The system shall also display a “Display All Items” selector for viewing all items.
ManageCart.Update:	The system shall update the subtotal based on the number of items and the cost per item when the “Update Cart” is selected. The system shall redisplay the shopping cart items after being updated and the new total. If the item has a quantity of zero then it will be removed.
ManageCart.Delete:	The system shall remove an item from the cart, recalculate the total, and redisplay the cart items and total when the “Remove Item From Cart” control is selected.

3.1.10 Return Order

3.1.10.1 Description and Priority

Customer selects Return Order from the Order Status screen. Priority = Medium.

3.1.10.2 Stimulus/Response Sequences

Stimulus:	Customer selects “Return Order” from Order Status screen.
Response:	System shall display the customer service telephone number and email.

3.1.10.3 Functional Requirements

OrderStatus.Return:	The system shall show the telephone number and email of customer service.

3.1.11 Track Order

3.1.11.1 Description and Priority

Customer selects Order from the Order History screen in order to check where their package is, i.e. in transit, out for delivery, etc. This is only for customers that selected package tracking. See 3.1.14 and 3.1.13 for functional requirements to get to this screen. Priority = High.

3.1.11.2 Stimulus/Response Sequences

Stimulus:	Customer selects Order from Order History Screen.
Response:	System shall display package tracking information.

3.1.11.3 Functional Requirements

Order.Track:	The system shall show the current tracking status and the tracking history if the order if it was shipped with tracking/confirmation. This information will be shown beneath the order details.

3.1.12 View Order History

3.1.12.1 Description and Priority

Customer views his/her order history after navigating to the Manage Account screen and selecting the “View Order History”. All his/her orders are displayed. Priority = High.

3.1.12.2 Stimulus/Response Sequences

Stimulus:	Customer selects View Order History from Manage Account Screen.
Response:	System shall display all orders in a table showing order number, date order placed, number of items, total, shipping method, order status (in-process, shipped, back ordered), shipping status(null, in transit, delivered). If the order has not been shipped the system shall also display a cancel button.

3.1.12.3 Functional Requirements

OrderHistory.PageLoad:	Displays order history via OrderHistory.OrderSummary for that user
OrderHistory.OrderSummary:	A summarized listing of orders is shown chronologically by date which contains, order number, order status (in progress, shipped, back ordered), and cost to customer. The Order Numbers are

	hyperlinked to the Order Details. A “cancel order” control is also displayed for unshipped orders. If there are more than 10 items then items are paged out and listed at the bottom of the page as groups of items in listings of 10 each, i.e. 11-20, 21-40, etc., at the bottom of the page along with first and last data page items.
OrderSummary.PageChange:	Displays new page of order summaries when customer clicks on further item pages that are at the bottom of the screen.

3.1.13 View Order Status

3.1.13.1 Description and Priority

Customer views his/her Order Status after navigating to the Order History Screen and selecting the order (hyperlink) itself from the summarized list. All details about the order are displayed. An itemized list is provided along with order status and tracking data. Priority = High.

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3.1.13.2 Stimulus/Response Sequences

Stimulus:	Customer selects order from order history screen.
Response:	System shall display all details about the order.

3.1.13.3 Functional Requirements

OrderStatus.Load:	The system shall display a table containing an itemized list of each item in the order. It shall show the order number and date ordered before the table then, product id, product description, quantity, unit price, and price for each item in the table. It shall also show the subtotal, tax, and shipping method, and grand total below the table. After the total section comes the order status section which shows if it is in process, backordered, or shipped. After the order status section is the shipping and tracking area. This item shows the lineage of the shipping process in a table starting with the shipping date and, if the customer selected tracking, each step in the delivery process ending with the delivery date. Delivery and tracking data is collected from shippers on a daily basis. The system shall also display a “Print Invoice” control in the upper right corner.
PrintInvoice:	See Print Invoice Requirement

3.1.14 Reset Password

3.1.14.1 Description and Priority

Customer selects “Reset Password” from login screen and the system will offer to either email him his password hint or send him a new password. Priority = High.

3.1.14.2 Stimulus/Response Sequences

Stimulus:	Customer selects reset password from Login Screen.
Response:	System shall redirect to the Reset Password screen, which displays the message “Would you like to have your hint sent to your email address of record” and also displays “Reset password and sent to your email address of record”.
Stimulus:	Customer selects one of the two choices.
Response:	System shall email either the password hint or a new password to the user.

3.1.14.3 Functional Requirements

ResetPassword.Load:	When the Reset Password Screen loads the customer/user is given a choice of having his/her password hint sent via email or having a new password sent to his/her email. There are also instructions displayed on calling customer service.
ResetPassword.SendHint:	The system shall send the password hint to the user’s email address on record when the hint option is selected.
ResetPassword.SendNew:	The system shall send a new password to the user’s email address on record when the reset password option is selected. The password shall be six characters long and have at least one capitol letter, one number, and one lower case character.

3.1.15 Search Items

3.1.15.1 Description and Priority

Customer enters in a 50 character or less description in a text control and selects from “Search” from the catalog browsing screens. Priority = High.

3.1.15.2 Stimulus/Response Sequences

Stimulus:	Customer enters text into the search box and selects search.
Response:	System shall display all items that meet the criteria.

3.1.15.3 Functional Requirements

Item.Search:	The system shall search for all items with the search terms in them in the database using an OR criteria of all words listed in the item description. The system shall display 10 items on the page with data paging selectors on the bottom of the page to select further items for viewing. The system shall also display “View All Items”. The items shall be sorted by the highest number of hits of words found in the item description.
Item.PageChange::	The system shall display a new page of items when customer clicks on further item pages (11-20, 21-30, etc.) that are at the

	bottom of the screen.
Items.ViewAll	The system shall display all items on one page from the current data set instead of showing the data page groups.

3.2 Customer Service Features

3.2.1 Disable Customer Account

3.2.1.1 Description and Priority

The customer service representative enters customer's user profile or account number to disable the customer's account based on customer request or non-payment. Priority=Medium.

3.2.1.2 Stimulus/Response Sequences

Stimulus:	CSR selects Disable from Account Management Page.
Response:	System displays the customer's profile information.
Stimulus:	CSR selects "Disable".
Response1:	System disables customer account and displays a message indicating "Account Successfully Disabled".
Response2:	System attempts to disable account however the account has Already been disabled and displays a message indicating that "Account is already disabled".

3.2.1.3 Functional Requirements

CustomerAccount.Select:	The system shall direct the CSR to the Account Management Page where CSR can select customer account or enters customer's username after being validated as CSR with proper authority.
CustomerAccount.Display:	The system shall display customer's profile.
CustomerAccount.InvalidUser	If system is unable to locate the username it shall display a message indicating "Invalid User, Please try again" and redisplays Account Management Page.
CustomerAccount.Disable:	The system shall allow the CSR to "disable" the customer account.
CustomerAccount.Validate:	The system shall display a message indicating "Customer Account Already Disabled" if account is already in a "disabled" status.
CustomerAccount.Confirm:	The system shall display a message indicating that "Customer Account has been disabled".

3.2.2 Override Pricing

3.2.2.1 Description and Priority

CSR enters customer's user profile or account number to view customer's order history and apply discount to an order. Priority = Medium.

3.2.2.2 Stimulus/Response Sequences

Stimulus:	CSR enters customer order number into the system.
Response:	The system displays customer's order.
Stimulus:	CSR enters discount amount or discount percentage.
Response1:	The system recalculates the order total and updates order detail page.
Response2:	The system sends the customer an email confirmation including the new total amount charged to the order.
Response3:	The system sends the Finance system the credit amount to be issued to customer's credit card.
Stimulus:	The Finance system issues a credit to the customer's credit card.
Response:	The Finance system issues a confirmation message to the system acknowledging the issuance of credit to customer.

3.2.2.3 Functional Requirements

OverridePrice.Order.GetNumber:	The system shall prompt the CSR to enter a customer order number.
OverridePrice.Order.Display:	If customer order exists, the system shall display it.
OverridePrice.Order.Discount:	The system shall allow the CSR to enter a dollar amount or a discount percentage to be applied to the order. The system shall display a message "Invalid Amount/Percentage" if discounted amount is larger than order total.
OverridePrice.Order.Recalculate:	The system shall recalculate the new total based on the CSR's accepted entry.
OverridePrice.Order.Notify:	The system shall notify the Finance system of credited amount.
OverridePrice.Order.Confirm:	The system shall display a confirmation message confirming the applied credit amount.
OverridePrice.Order.Email	The system shall then email the customer with the new total and amount credited.

3.2.3 Refund Order

3.2.3.1 Description and Priority

CSR enters customer's user profile or account number to view customer's order history to refund an order. Priority = Medium.

3.2.3.2 Stimulus/Response Sequences

Stimulus:	CSR enters customer order number into the system.
Response:	The system displays customer's order.
Stimulus:	CSR selects "refund order".
Response1:	The system sends the customer an email confirmation of refund to the order.
Response2:	The system sends the Finance system the refund amount to be issued to customer's credit card.
Stimulus:	The Finance system issues a credit to the customer's credit card.
Response:	The Finance system issues a confirmation message to the WebOrder system acknowledging the issuance of credit to the customer.

3.2.3.3 Functional Requirements

RefundOrder.Order.GetNumber:	The system shall prompt the CSR to enter a customer order number.
RefundOrder.Order.Display:	If customer order exists, the system shall display it.
RefundOrder.Order.Refund	The system shall allow the CSR to issue a refund to the customer.
RefundOrder.Order.Notify:	The system shall notify the Finance system of refunded amount.
RefundOrder.Order.Confirm:	The system shall display a confirmation message confirming the applied refunded amount.
RefundOrder.Order.Email	The system shall then email the customer with the new total mount credited to his/her credit card.

3.2.4 Reset Customer Account

3.2.4.1 Description and Priority

The CSR enters customer's account number, profile name or telephone number to reactivate the user account due to customer's surpassing the 3 attempts constraint to login. Priority=High.

3.2.4.2 Stimulus/Response Sequences

Stimulus:	CSR enters customer's info from the Account Management Page.
Response:	System displays the customer's profile information.
Stimulus:	CSR selects "Reset".
Response1:	System resets customer account and displays a message indicating "Account Successfully Reset".
Response2:	System attempts to reset account however the account is

Already active and displays a message indicating that

"Account is already active".

3.2.4.3 Functional Requirements

CustomerAccountt.Select:	Same as 3.2.1.3
CustomerAccount.Display:	Same as 3.2.1.3
CustomerAccount.InvalidUser	Same as 3.2.1.3
CustomerAccount.Reset:	The system shall allow the CSR to "Reset" the customer account.
CustomerAccount.Validate:	The system shall display a message indicating "Customer Account Already Active" if account is already in an "Active" status.
CustomerAccount.Confirm:	The system shall display a message indicating that "Customer Account has been activated".

3.2.5 Validate System Status

3.2.5.1 Description and Priority

The CSR attempts to login to inform customer of operational status of the website. Priority=Medium.

3.2.5.2 Stimulus/Response Sequences

Stimulus: CSR enters website URL in the browser's address box.

Response1: System displays home page.

Response2: CSR request times out, website does not respond.

Functional Requirements

The CSR shall be able to verify that the Web site is in an operational state.

3.2.6 View Pending Shipment

3.2.6.1 Description and Priority

CSR enters customer's order number or account number to view customer's order history to check status of backordered item(s). Priority = Medium.

3.2.6.2 Stimulus/Response Sequences

Stimulus: CSR enters customer order number into the system.

Response: The system displays customer's order detail.

Stimulus:	CSR selects “backordered item”.
Response:	The system displays item detail page.
Stimulus:	CSR select “view shipment status”
Response:	The System displays shipment status.

3.2.6.3 Functional Requirements

PendingShipment.Order.GetNumber:	The system shall prompt the CSR to enter a customer order number.
PendingShipment.Order.Display:	If customer order exists, the system shall display it.
PendingShipment.Item.Select	The system shall allow the CSR to select backordered item.
PendingShipment.Item.Display	The system shall display item detail page.
PendingShipment.Item.ViewStatus	The system shall allow the CSR to view item’s shipment status.

3.2.7 Change Pricing

3.2.7.1 Description and Priority

CSR enters item number to change pricing authorized by vendor. Priority = High.

3.2.7.2 Stimulus/Response Sequences

Stimulus:	CSR enters item number into the system.
Response:	The system displays item detail information.
Stimulus:	CSR enters new price.
Response:	The system displays message indicating successful update of item record.

3.2.7.3 Functional Requirements

ChangePrice.Item:	The system shall prompt the CSR to enter an item number.
ChangPrice.Item.Display:	If item exists, the system shall display its detail.
ChangePrice.Item.NotFound	If item does not exist, the system shall display a message indicating “Item not found”.
ChangePrice.Item.Validate:	The system shall allow the CSR to enter a dollar amount .and displays the message “Invalid Amount” if amount is 0.
ChangePrice.Item.Confirm	The system shall display a message “Item Price has been Updated”.

3.2.8 Add Adjusted Pricing to Website

3.2.8.1 Description and Priority

CSR enters item number to change pricing requested by the sales department. Priority = High.

3.2.8.2 Stimulus/Response Sequences

Stimulus:	CSR enters item number into the system.
Response:	The system displays item detail information.
Stimulus:	CSR enters new adjusted price.
Response:	The system displays message indicating successful update of item record.

3.2.8.3 Functional Requirements

Item.AdjustPrice:	The system shall prompt the CSR to enter an item number.
Item.AdjustPrice.Display:	If item exists, the system shall display its detail.
Item.AdjustPrice.NotFound	If item does not exist, the system shall display a message indicating “Item not found”.
Item.AdjustPrice.Validate:	The system shall allow the CSR to enter a dollar amount. Issues message “Invalid Amount” if amount is 0.
Item.AdjustPrice.Confirm	The system shall display a message “Item Price has been Updated”.

3.3 Warehouse Features

3.3.1 Generate Pick List

3.3.1.1 Description and Priority

The warehouse worker (Stock Picker) enters select criteria to receive a system-generated list of available stock items on one or more new, unfilled customer orders and backorders (all backorders containing items received and added into the inventory database will automatically be generated regardless of the stock picker’s selection criteria). The list will be used when pulling items from the warehouse and will sequence those items in an order based on physical location of the warehouse. Priority = Medium.

3.3.1.2 Stimulus/Response Sequences

Stimulus:	The stock picker selects the option to view pending customer orders based on select criteria for priority level, date, time frame, order size, and order status.
Response:	The system displays a list of new, unfilled customer orders based on the selected criteria.

Stimulus:	The stock picker selects orders from the displayed list and selects an option to generate a pick list of items for those customer orders.
Response:	The system displays a pick list of items for both the selected customer orders and all outstanding backorders that contain items now in stock.
Stimulus:	The stock picker selects the option to print the list.
Response:	The system generates the list along with associated packing slips and shipping labels for each individual order containing items on the list.

3.3.1.3 Functional Requirements

CustomerOrder.Collect.Priority:	The system shall allow the stock picker to specify a priority level for all customer orders displayed.
CustomerOrder.Collect.StartDate:	The system shall allow the stock picker to specify a start date (orders first received) for customer orders displayed.
CustomerOrder.Collect.EndDate:	The system shall allow the stock picker to specify an end date (orders last received) for customer orders displayed.
CustomerOrder.Collect.StartTime:	The system shall allow the stock picker to specify a start time (orders first received) for customer orders displayed.
CustomerOrder.Collect.EndTime:	The system shall allow the stock picker to specify an end time (orders last received) for customer orders displayed.
CustomerOrder.Collect.ItemCount:	The system shall allow the stock picker to indicate a maximum item count number for customer orders displayed.
CustomerOrder.Collect.Status:	The system shall allow the stock picker to specify an order status for customer orders displayed.
CustomerOrder.Collect.Selection:	The system shall display the customer orders per selected criteria and give the stock picker the ability to generate a pick list containing all available items in all customer orders displayed.
CustomerOrder.Collect.None:	If no orders are displayed, the system shall inform the stock picker that no orders are available meeting the selection criteria.

CustomerOrder.Collect.Change:	The stock picker can change previously entered selection criteria.
CustomerOrder.PickList.Display:	The system shall display a pick list based on the stock picker's selection criteria. The list will include all available items in all customer orders selected as well as backordered items now available in stock.
CustomerOrder.PickList.Print:	If the print option is selected, the system shall generate a printed list and all associated packing slips and shipping labels for each customer order containing items on the list.

3.3.2 Update Inventory

3.3.2.1 Description and Priority

The warehouse worker (Stock Clerk) updates inventory quantities for stock items received with new shipments. This process involves updating quantities for items that currently exist in the inventory database. Priority = Medium.

3.3.2.2 Stimulus/Response Sequences

Stimulus:	The stock clerk uses a scanning device to scan the barcode on an item received.
Response:	The system displays information on the scanned item.
Stimulus:	For each scanned item, the clerk updates the item quantity (in the record) a number matching the total count of that particular item received (i.e. six Model 2A hammers are received, one is scanned bringing up the item details/info, quantity in the item record is increased by six), then saves the updated record.
Response:	The system confirms the save.

3.3.2.3 Functional Requirements

Item.Update:	The system shall let the clerk who is logged into the system, select an option to update inventory.
Item.Update.Display:	The system shall display the item record matching the barcode number scanned.
Item.Update.NotAvailable:	If no item is found matching the scanned code, the system shall inform the clerk that the item

	is not found in inventory. (See functional requirement “Add New Inventory”)
Item.Update.Increase:	The system shall allow the clerk to increase item quantity.
Item.Update.Decrease:	The system shall allow the clerk to decrease item quantity (See Note: N1 in Use Case “Update Inventory”, Appendix B).
Item.Update.Confirm:	The system shall confirm that the record has been updated and saved.

3.3.3 Flag Order as Shipped

3.3.3.1 Description and Priority

After manually confirming, packing and preparing a customer order for shipping, the warehouse worker (Shipping Clerk) changes a customer order status in the system to “shipped”. The flag is used by the (external) Finance System to appropriately charge for only those items that are shipped, and, is used to indicate in the system that the customer order has been filled. Priority = Medium.

3.3.3.2 Stimulus/Response Sequences

Stimulus:	The shipping clerk enters a customer order number into the system.
Response:	The system displays the customer order.
Stimulus:	The shipping clerk changes the customer order status to “Shipped”.
Response 1:	The system sends the Finance System the updated order status.
Response 2:	The system sends the customer an email confirmation of his/her shipping status.
Stimulus:	The Finance System charges the customer credit card for items purchased.
Response:	The Finance System sends a confirmation to the system acknowledging the status change and indicating that the customer was charged for items shipped.

3.3.3.3 Functional Requirements

CustomerOrder.Collect.Number:	The system shall prompt the clerk for a customer order number.
CustomerOrder.Collect.Display:	If the customer order number is a valid number existing in the system, the system shall display the order.
Flag.CustomerOrder.Status:	The system shall allow the clerk to change the status of order. Order statuses include *Open, Closed, Shipped, and Backordered*; other

	statuses are TBD. (See Appendix E, Data Dictionary).
Flag.CustomerOrder.Notice:	The system shall notify the Finance System of a changed order status.
Flag.CustomerOrder.Email:	The system shall notify the customer via email of a changed order status.
Flag.CustomerOrder.Confirm:	The system shall display a confirmation from the Finance System acknowledging the changed order status.

3.3.4 Add New Inventory Item

3.3.4.1 Description and Priority

The warehouse worker (Warehouse Manager) adds a brand new stock item to the inventory database. This process involves creating a new system record for an item not currently stocked and not currently existing in the inventory database. Priority = Low.

3.3.4.2 Stimulus/Response Sequences

Stimulus:	The warehouse manager selects the option to add a new stock item.
Response:	The system displays a new, blank item record.
Stimulus:	The warehouse manager saves a newly created item record.
Response:	The system displays a confirmation that the new record was created/added.

3.3.4.3 Functional Requirements

Add.NewItem:	The system shall allow the manager to select an option for adding a new item to the inventory database.
Add.NewItem.Record:	The system shall display a new, blank item record. The manager enters new item information. (See Appendix E, Data Dictionary, for required data fields)
Add.NewItem.Confirm:	The system shall display a confirmation that a new record has been created and saved.

3.4 Sales Representatives Features

3.4.1 Manage Categories

3.4.1.1 Description and Priority

The sales representative adds, edits or deletes a category. Categories are organized hierarchically... Priority = High.

3.4.1.2 Stimulus/Response Sequences

Stimulus:	Actor selects “Manage Categories” from the menu.
Response:	System shows a hierarchical read-only list of the categories.
Stimulus:	Actor selects one of the Categories in the hierarchical list.
Response:	System highlights the selected item
Stimulus:	Actor selects Edit Category
Response:	System shows the category details. The actor can edit the details and either save or cancel his changes.
Stimulus:	Actor Selects Delete Category
Response:	Systems checks if category has subcategories or if items are linked to the category. If not the system queries the actor for confirmation and then deletes the category.
Stimulus:	Actor Selects Add Sub Category
Response:	System checks if an actor has selected a category (which is going to be the parent category of the new sub category). The System collects category details from the actor. The actor can then either commit (save) or cancel the added category.
Stimulus:	Actor Selects Add Category
Response:	The system collects category details from the actor. The actor can then either commit (save) or cancel the added category.

3.4.1.3 Functional Requirements

Categories.Show	The categories are shown in a read-only hierarchical list.
Category.Add	The system shall create a new category and assign a unique id to it. The system shall query the user for the category name according to the Category.Edit requirements
Category.AddSubCategory	The system shall let the user add a sub category to a category. The actor must first have selected a category that will be the parent of the new sub category. The new category must be

	assigned a unique id. The
Category.Edit	The system shall let the actor edit the category details. The actor must first select a category to edit. The system will then show the category detail which can be edited. The Category details consist of the following data: • Name
Category.Edit.Save	The system shall confirm successful save
Category.Edit.Cancel	The system shall query the actor for confirmation.
Category.Delete	The actor must first select a category for deletion. The system shall then check whether or not the current category has subcategories or if items contain a reference to the category. If not the system shall query the actor for confirmation. On positive feedback the system shall delete the category.
Category.Save	

3.4.2 Manage Items

3.4.2.1 Description and Priority

The sales representative can add, delete and update item details. The items can be marked as active or inactive, and item can be moved from one category to another. Priority = High.

3.4.2.2 Stimulus/Response Sequences

Stimulus:	The actor selects “Manage Items” from the menu
Response:	The system shows a read-only list of the items.
Stimulus:	The actor selects an item in the list.
Response:	The system highlights the selected item
Stimulus:	The actor selects “Add”
Response:	The system queries the actor for item details and saves the item to the database.
Stimulus:	The actor selects “Edit”
Response:	The system shows the item details to the actor. The actor can edit the details and either select save or cancel.
Stimulus:	The actor selects delete
Response:	The system

3.4.2.3 Functional Requirements

Items.Show	The system shall show a read-only list of items. The list shall include the item number and the item name
Item.Add	The system shall create a new empty order record and assign a unique id to it. The system shall then continue in the Item.Edit requirement
Item.Edit	The system shall show a screen with the details of the item. Items details /attributes to be editable. See Appendix E, Data dictionary for data fields)
Item.Edit.Save	The system shall confirm successful save
Item.Edit.Cancel	The system shall query the user for confirmation. If the item is a newly created item the system shall continue on the Item.Delete requirement. If not the system shall return to the Items.Show requirement.
Item.Delete	The system shall confirm successful deletion.

3.4.3 Manage Shippers

3.4.3.1 Description and Priority

The system shall support multiple shippers. The customer selects his/her preferred shipper when placing the order. The shippers are added and maintained by the sales representatives. Priority = Medium.

3.4.3.2 Stimulus/Response Sequences

Stimulus:	The actor selects “Manage Shippers” on the main menu
Response:	The system shows a read-only list of all shippers.
Stimulus:	The actor selects “Add”
Response:	The system shows the details of the newly created Shipper
Stimulus:	The actor selects “Edit”
Response:	The system shows the details of the Shipper
Stimulus:	The actor selects “Delete”

3.4.3.3 Functional Requirements

Shippers.Show	The system shall show a read-only list of shippers
Shipper.Add	The system shall create a new Shipper and assign the shipper a unique id. The system shall then continue on the Shipper.Edit requirement.

Shipper.Edit	The system shall show a screen with the shipper details / attributes that are editable. See Appendix E, Data dictionary for data fields.
Shipper.Edit.Save	The system shall confirm successful save
Shipper.Edit.Cancel	The system shall query the actor for confirmation. If the shipper is new the system shall continue on requirement Shipper.Delete
Shipper.Delete	The system shall confirm successful deletion

3.4.4 Manage Vendors

3.4.4.1 Description and Priority

The system shall allow multiple vendors. Each article in the system must be supplied by a vendor. Before an article from a vendor can be created in the system, the vendor must be created in the system. Priority = Medium.

3.4.4.2 Stimulus/Response Sequences

Stimulus:	Actor selects “Manage Vendors”
Response:	System shows a read-only list of the Vendors
Stimulus:	Actor selects a Vendor in the list
Response:	System highlights the selected Vendor
Stimulus:	Actor selects “Add”
Response:	The system shall create a new Vendor and assign it a unique id.
Stimulus:	Actor selects “Edit”
Response:	The system shall show a screen with the editable attributes of the Vendor.
Stimulus:	Actor selects “Delete”
Response:	System shall confirm successful deletion

3.1.1.3 Functional Requirements

Vendors.Show	System shall show a read-only list of Vendors. The list shall contain the following attributes • Vendor name
Vendor.Add	System shall create a new Vendor and assign it a unique id. The system shall continue on requirement Vendor.Edit
Vendor.Edit	The system shall show a screen with the editable attributes of the

	Vendor. See Appendix E, Data dictionary for data fields
Vendor.Edit.Save	The system shall confirm successful save. The system shall continue at requirement Vendors.Show
Vendor.Edit.Cancel	The system shall query the actor for confirmation. The system shall continue at requirement Vendors.Show
Vendor.Delete	The system shall confirm successful deletion. The system shall continue at requirement Vendors.Show

3.4.5 View Inventory Report

3.4.5.1 Description and Priority

The system shall show a report of the current stock levels. The report shall only be available through the management user interface. Priority = High.

3.4.5.2 Stimulus/Response Sequences

Stimulus:	The actor selects “Inventory Report” from the menu
Response:	The system shall collect report criteria and the system shall show a report.
Stimulus:	The actor selects print.
Response:	The system shows the report
Stimulus:	The actor selects export
Response:	The system shall query the actor for desired format and then generate the file which shall then be streamed to the client side.

3.4.5.3 Functional Requirements

Report.Criteria.Collect	The system shall collect report grouping. The following grouping shall be available: • Group • Vendor • None The criteria are mutual exclusive; only one grouping shall be selectable.
Report.Show	The system shall show a report containing the following fields. • Item number • Item name • In stock count • In order count • Gross stock value • Net stock value The data shall be accurate at the time of data retrieval.
Report.Print	The system shall show a dialog for printer selection.
Report.Export	The system shall query the user for the export format. The following formats shall be available • XML (XSD TBD) • Excel/Cylk • PDF • Character delimited (delimiter shall also be collected) The system shall then send the file to the client side where the actor can choose to download or open the file.

3.4.6 View Sales Report

3.4.6.1 Description and Priority

The system shall show a report of the sales for a given period. The report shall only be available through the management user interface. Priority = Low.

3.4.6.2 Stimulus/Response Sequences

Stimulus:	The actor selects the “Sales report” from the menu
Response:	The system queries the actor for report criteria and report grouping and then shows the report.

3.4.6.3 Functional Requirements

Report.Criteria.Collect	The system shall collect report criteria and report grouping. The report criteria shall include single attributes, multiple attributes; attribute range and combinations of the three. Criteria attributes shall include: • Sale date • Item number • Item name • Category • Vendor • Shipper • Customer number • Order number Any combination of the above shall be possible. Criteria grouping shall include: • Sale date • Item number • Item name • Category • Vendor • Shipper • Customer number • Order number Grouping criteria are mutually exclusive, only one can be selected at a time
Report.Show	The system shall show a screen with the report. The report shall contain the following fields: Sale/Item count, sale net price, sale tax, sale price, average sale price, profit
Report.Print	The system shall show a dialog for printer selection.
Report.Export	The system shall query the user for the export format. The following formats shall be available • XML (XSD TBD) • Excel/Cylk • PDF

- Character delimited (delimiter shall also be collected)

The system shall then send the file to the client side where the actor can choose to download or open the file.

3.5 System Administrator Features

3.5.1 Manage Users

3.5.1.1 Description and Priority

Manage Users shall only be available to members of the Administrator profile. The actor can create, delete, deactivate, activate and modify users. The following can be modified on a user basis:

- User name
- User password
- User e-mail

User profile

Priority = Medium

3.5.1.2 Stimulus/Response Sequences

Stimulus:	The actor selects “Manage Users”
Response:	The system shows a read-only list of Users
Stimulus:	The actor selects “Add” user
Response:	The system shows a screen with the editable attributes of the User
Stimulus:	The actor selects Delete
Response:	The system queries the actor for confirmation and deletes the user

3.5.1.3 Functional Requirements

Users.Show	The system shall show a read-only list of all users
User.Add	The system shall create a new user and assign it a unique id
User.Edit	The system shall show a screen with the editable attributes of the User. See Appendix E, Data dictionary for data fields
User.Edit.Deacvtivate	The system shall check if the user has unhandled orders. Before deactivating a customer with unhandled orders the system shall query the actor for confirmation.
User.Edit.Activate	The system shall mark the user as active
User.Edit.Activate.Failed	The system shall notify the actor if the user profile is marked as inactive. User in an inactive profile can not be activated.
User.Edit.Cancel	The user shall query the user for confirmation. If the actor agrees the system shall continue at requirement Users.Show

User.Edit.Save	The system shall query the user for confirmation. After successful save the system shall continue on requirement Users.Show
User.Delete	The system shall confirm successful deletion

3.5.2 Manage User Profiles

3.5.2.1 Description and Priority

The users of the system can be put in different user profiles. Access rights are set per user profile. User categories can either be deactivated, activated, added, modified or deleted. The system contains one default user group, “Administrators” that can not be deleted or deactivated. The profile must also always contain one user, so the last user can not be removed from the profile. Priority = Medium.

3.5.2.2 Stimulus/Response Sequences

Stimulus:	Actor selects “Manage User Profiles” from the Menu.
Response:	The system shows a read-only list of all User profiles
Stimulus:	The user selects Add new User profile
Response:	The system creates a new User profile.
Stimulus:	The user selects a category by clicking on it in the list
Response:	The system highlights the selected profile
Stimulus:	The actor selects “Show Users“
Response:	The system shows a list of the users in the profile
Stimulus:	The actor selects Edit
Response:	The system shows the details of the User profile
Stimulus:	The actor selects Deactivate profile.
Response:	The system marks the profile as deactivated.
Stimulus:	The actor selects activate profile
Response:	The system marks the profile as active
Stimulus:	The actor selects deletes
Response:	The system deletes the profile

3.5.2.3 Functional Requirements

Profiles.Show	The system shall show a read-only list of user profiles
Profile.ShowUsers	The system shall show a read-only list of all users in the Profile.
Profile.Add	The system shall add a new profile and assign it a unique id.
Profile.Edit	The system shall show a screen with the editable properties of the profile. See Appendix E, Data dictionary for data fields
Profile.Edit.Deactivate	The system shall check whether or not any of the users in the profile has unhandled orders. If the profile contains users with unhandled orders the system shall query the user for confirmation. The system shall mark all users in the profile as deactivated.
Profile.Edit.Activate	The system shall query the actor if all users in the profile shall be activated.
Profile.Edit.Cancel	The system shall query the user for conformation. The system shall then continue on requirement Profiles.Show
Profile.Edit.Save	The system shall confirm successful save.
Profile.Delete	The system shall confirm successful deletion

4 External Interface Requirements

4.1 User Interfaces

4.1.2 The existing CSS style sheet will be retained and used across all web pages.

4.1.3 The web pages shall be navigable via keyboard or mouse.

4.1.4 Online Help links shall be visible on every page in the upper right corner of the page.

4.1.5 Online Customer Service links shall be visible on every page in the upper right corner of the page to the immediate left of the Online Help.

4.1.6 The horizontal viewable display width of screen shall be visible in an 800x600 display mode.

4.1.7 All pages will use the en-US code page.

4.2 Hardware Interfaces

4.2.1A scanner will act as a keyboard input in addition to the keyboard input itself in the warehouse. No special programming is needed at this time.

4.3 Software Interfaces

4.3.1 The WebOrder system shall interface with the existing order fulfillment for a one time data import.

4.3.2 The WebOrder system shall interface with the existing inventory management systems for a one time data import.

4.4 Communications Interfaces

4.4.1 The WebOrder system shall use the IIS6 SMTP services located on the same server as the WebOrder UI to send out email messages to customers both internal and external.

5 Quality Attribute Requirements

5.1 Performance Requirements

5.1.1 The WebOrder System shall not take more than 3 seconds for any page to fully display.

5.1.2 The WebOrder System shall return query results in 7 second or less.

5.1.3 The WebOrder System shall display confirmation messages to users within 3 seconds after the user submits information to the system.

5.1.4 The WebOrder system shall be designed to support 2000 concurrent users with estimated average session duration of 30 minutes.

5.2 Safety Requirements

Not Applicable.

5.3 Security Requirements

5.3.1 Access to the WebOrder system shall be based on a secured role based system with encrypted passwords between 7 to 14 characters.

5.3.2 The WebOrder system shall encrypt all transactions that involve customers' personal and financial information.

5.4 Quality Requirements

5.4.1 The WebOrder system shall be available and running 24 hours a day, seven days a week, and 365 days a year.

5.4.2 The WebOrder system shall also enable the customer to recover an incomplete order in case the connection is broken.

5.4.3 The WebOrder system's user interface shall be familiar to users who have used other web applications and Windows desktop applications. Global Inventory Inc. will follow the UI guidelines for naming menus, buttons, and dialog boxes set by ToolCo.

5.4.4 The WebOrder system shall be maintainable by anticipating the types of changes expected, and by carefully documenting our design and implementation.
5.4.5 The WebOrder system shall be upgradeable with no downtime or disruption.
5.4.6 The WebOrder system shall be composed of highly structured programs to allow easier separation of parts for independent testing of system components.

5.4.7 The WebOrder system shall provide tutorials and an online/searchable user help function for all user classes.

6 Other Requirements

6.1 Legal Requirements

6.1.1 Any use of electronic commerce for sale of goods or services through the WebOrder system must comply with all federal ecommerce regulations, directives and guidelines governing the privacy and security of all user information.

6.1.2 Terms and conditions of website use regarding the purchase of all merchandise through the WebOrder system must clearly be displayed to all users of the site.

6.1.3 All customer orders received through the WebOrder system must be acknowledged.

6.1.4 All information regarding price, tax and delivery to buyers must be clearly displayed.

6.1.5 The design of the system shall ensure that transactions are secure from public access including the prohibition of storing any sensitive payment information (i.e. credit card number) on unsecured, local servers.

Appendix A: Glossary

Term	Definition
.Net	.Net is a Microsoft Application and Programming Framework for writing applications, services, and workflows.
ASP.Net	ASP.net is a programming framework, and a subset of the .Net framework, used to develop web-based applications.
Back Order	Product(s) ordered but out of stock; the product(s) will be shipped when they become available.
Backorder	The act of retaining a quantity to ship against an order when other lines have already been shipped in that order. Backorders are usually caused by stock shortages.
Bar Code	A symbol consisting of a series of printed bars representing values.
Bar Code Scanner	A device to read bar codes and communicate data to computer systems.
Browser	A web browser is a software application that enables a user to display and interact with text, images, and other information typically located on a web page at a website on the World Wide Web or a local area network. *(See Web Browser)*
Customer Order	An order from a customer for a particular product or a number of products.
Customer Service	Activities between the buyer and seller that enhance a sale or use of the seller's products or services.
DMZ	Demilitarized Zone is a logical and physical area of network security where external clients are allowed limited access to resources and also servers as a buffer zone between the external network and the internal network. Internal clients are typically allowed access to the resources in the DMZ and in the external network be it the Internet or other external

	networks.
GUI	Graphical User Interface; an output interface used to display images, animation and text.
HTTP and HTTPS	Hyper Text Transport Protocol is a protocol for transferring information across the network over TCP/IP. HTTP also specifies the formatting of such data as it flows. HTTPS is the same but the data is encrypted by virtue of a set of key exchanges that encrypts and decrypts the data. An asymmetric key exchange takes place between the server and client which then includes the symmetric key that is used to encrypt and decrypt the remaining data exchange.
Inventory	The number of units (actual products) held by a company.
IIS	Internet Information Services is a Microsoft Corporation Web Server product included in the base Operating System. It includes a web server, mail server, news server, along with a variety of programming interface extensions.
Order	A request for goods or services (i.e. - a purchase order, sales order, work order, etc.)
Order Picking	Selecting or "picking" the required quantity of specific products for movement to a packaging area (usually in response to one or more customer orders).
Order Processing	Activities associated with filling a customer order.
Our	The usage of the term refers to Global Inventory Inc.
Out Of Stock	Not having inventory at a location and available for distribution or for sell to the consumer; zero inventory.
Packing List	List showing all merchandise packed.
Pick List	A list of items to be picked from stock for the purpose of filling an order.
Picking	Pulling products from warehouse areas to complete a customer order.
Purchase Order (PO)	The purchaser's agreement used to formalize a purchase transaction with a vendor (supplier).

	The physical form or electronic transaction a buyer uses when placing order for items.
QA	Quality Assurance; the process or set of processes or measures used to assure the quality of a product.
Receiving	The physical receipt of goods and supplies and the inspection of the incoming shipment for conformance with the purchase order.
Scan	The action of scanning (reading) bar codes
Scanner	A device to read bar codes and communicate data to computer systems.
Shipper	The company that handles the transportation of goods.
SMTP	Simple Mail Transfer Protocol is a protocol that specifies how transfers of electronic messages are sent and the formatting of messages between client and servers over TCP.
Stock	Goods or supplies on hand.
Supplier	A provider of goods or services. (*See Vendor)*
Tracking	Monitoring shipment movements from origin to destination.
Vendor	A provider of goods or services. (*See Supplier)*
Warehouse	Storage place for products. Warehouse activities include receipt of products, storage, shipment, and order picking.
Web Browser	A web browser is a software application that enables a user to display and interact with text, images, and other information typically located on a web page at a website on the World Wide Web or a local area network. *(See Browser)*
WLBS	Refers to Windows Load Balancing Services included in the MS server product Windows operating system. The purpose and function is able to able to scale out network services, such as HTTP requests, to multiple servers. The service runs on all servers in the cluster and can be one or more servers.
24/7	Referring to operations that are conducted 24 hours a day, 7 days a week.

Appendix B: Use Cases

Customer Use Cases

Use Case ID	**UC 1.1 – Add To Cart**
Goal:	Customer successfully adds an item to his/her cart.
Actor(s):	The customer
Preconditions:	The customer must be on the web site and must be browsing an item **[UC1.2]**.
Trigger:	The customer selects “Add to Cart”.
Main Scenario:	1. System displays an “Item Added to Cart” message and Cart icon updated to show quantity of items in cart.
Alternatives:	
End Conditions:	The cart was updated with the item.

Use Case ID	**UC 1.2 – Browse Items**
Goal:	Customer successfully displays an item
Actor(s):	The customer
Preconditions:	
Trigger:	The customer hits the WebOrder web site.
Main Scenario:	1. System displays main page with categories for browsing. 2. Customer selects a category. 3. Selects category the nth time if subcategories exist. (May be multiple subcategories) 4. Items are displayed for that (sub)category.
Alternatives:	4.1. Customer selects next data page if too many items to fit on one page. 4.2. Another page of items is displayed.
End Conditions:	Items were browsed.

Use Case ID

UC 1.3 – Cancel Order.

Goal: Customer successfully cancels an order.

Actor(s): The customer

Preconditions: The customer must be on the web site. The customer must have an account. The customer has orders.

Trigger: The customer selects “Manage Account”.

Main Scenario:

1. Customer selects “View Order History”
2. System displays orders.
3. The customer selects the order.
4. The customer selects “Cancel Order”.
5. System validates that the order has not been shipped; credits account on record, shows success information, and emails data to customer.

Alternatives:

2.1 The customer is not logged in and is taken to the login screen to login **[UC 1.7]**

2.1.1 The customer is returned to the “Display Orders” screen after a successful login.

5.1 System shows that order has been shipped and displays message on how to contact customer service during normal business hours.

5.2 Credit card can not be credited and displays message on how to contact customer service during normal business hours.

End Conditions: The customer’s order(s) was cancelled.

Use Case ID

UC 1.4 – Change Account Info

Goal: Customer successfully updates account

Actor(s): The customer

Preconditions: The customer must be on the web site and have an existing account

Trigger: The customer selects “Manage Account” from Main Site Menu.

Main Scenario:

1. Customer selects “Change Account Info”
2. System validates Login Status
3. The customer updates any/all account data in the various controls provided.
4. Customer select “Validate Data”
5. System validates personal data according to business rules and credit card data with vendor.
6. System displays information that shows the customer was validated successfully and his/her account number and informs them that an email was sent to primary email of customer account with username, password, and account number attached.

Alternatives:

2.1 System displays a Login Screen **[UC 1.7]** if they are not logged in.

6.1: Data validation fails

6.1.1 System highlights invalid data on page with explanations and instructs customer to correct information or call provided customer service information during working hours.

End Conditions: The customer successfully updated his/her account.

Use Case ID

UC 1.5 – Checkout

Goal: Customer successfully checks out

Actor(s): The customer

Preconditions: The customer must be on the web site. The customer has added items to his/her cart **[UC 1.1]**

Trigger: The customer selects "Check Out

Main Scenario:

1. System displays a Checkout Screen with all items, taxes if applicable, and total.
2. The customer selects the shipping address
3. The customer selects shipping and tracking/confirmation method.
4. The system shows the updated total.
5. The customer selects Credit Card on record as payment method.
6. The customer selects "Finalize Order"
7. The system validates all the information and shows that the transaction was successful and displays Customer Info, Shipping Info, Itemized List of Items, Total, Order Number, and emails the same info to the email address on record for the customer. The system also states to use the browser's print function to print the receipt.

Alternatives:

1.1 The system displays Login Screen and customer logins **[UC 1.7]**

1.1.1 The customer is returned to the check out screen.

2.1 The customer enters an ad hoc shipping address.

4.1 The customer decides to remove items from his/her cart **[UC 1.10]**

4.2 The customer selects a different shipping method.

5.1 The customer enters different credit card data

7.1 Data validation fails, the system shall request corrections to be made and shall provide customer service contact information.

7.1 Customer corrects data (address, credit card, etc.) by going through steps 2-5 and repeats step 6.

End Conditions: The customer checked out successfully.

Use Case ID

UC 1.6 – Create Account

Goal: Customer successfully creates account

Actor(s): The customer

Preconditions: The customer must be on the web site.

Trigger: The customer selects “Create Account” from Main Site Menu.

Main Scenario:

1. System displays a Create Account screen.
2. The customer enters a username in the control provided.
3. The customer enters a password in the control provided.
4. The customer enters the password again in the control provided.
5. The customer enters his/her email addresses (may be multiple) in the controls provided.
6. The customer enters his/her addresses (may be multiple – shipping, billing, contact) (street, city, state, country, territory) in the controls provided.
7. The customer enters his/her phone numbers (may be multiple) in the controls provided.
8. The customer enters his/her Credit Card information in the controls provided.
9. The customer enters his/her password hint information in the control provided.
10. Customer select “Validate Data”
11. System validates personal data according to business rules and credit card data with vendor.
12. System shall display accepted customer account information and shall inform the customer that an email has been sent to the customer including his/her username, password and account number.

Alternatives:

12.1: Data validation fails

12.1.1 System highlights invalid data on page with explanations and instructs customer to correct information or call provided customer service information during working hours.

End Conditions: The customer created a validated account

Use Case ID

UC 1.7 - Login

Goal: Customer successfully logs in to system

Actor(s): The customer, the WebOrder system

Preconditions: The customer must be on the web site. The customer must have an account.

Trigger: The customer selects “Login”.

Main Scenario:

1. System displays a Login screen.
2. The customer enters his/her username in the control provided.
3. The customer enters his/her password in the control provided.
4. The customer selects “Validate Username and Password”
5. System validates username and password.
6. System displays information that shows the customer was validated successfully.

Alternatives:

1.1: Customer does not have an account

1.1.1. User selects “Create Account” from the Login screen [**UC 1.6]**

6.1 Username/Password validation fails for nth time

6.1.1 System displays information that shows validation failed, informs user to try again, displays customer service contact information, and link to reset password.

6.1.1.1 Customer selects “Reset Password” [**UC 1.15]**

6.2 Username/Password validation fails for fifth time.

6.1.1 System displays information that shows validation failed, informs user to try again, displays customer service contact information, and link to reset password.

6.1.1.1 Customer selects “Reset Password” [**UC 1.15]**

6.2.1 System sends email to customer service and security.

End Conditions: The customer was validated.

Use Case ID	**UC 1.8 – Print Invoice**
Goal:	Customer successfully prints the order invoice.
Actor(s):	The customer
Preconditions:	The customer must be on the web site. The customer must have an account. The customer has orders.
Trigger:	The customer selects “Manage Account”.
Main Scenario:	1. Customer selects “View Order History” 2. System displays the orders. 3. The customer selects the order. 4. The customer selects “Print Invoice”. 5. The customer is taken to a printer friendly screen which tells the user to use his/her browser’s print function
Alternatives:	2.1 The customer is not logged in and is taken to the login screen to login **[UC 1.7]** 2.1.1 The customer is returned to the “Display Orders” screen after a successful login.
End Conditions:	The customer printed the invoice.

Use Case ID	**UC 1.10 – Manage Cart**
Goal:	Customer successfully manages cart items
Actor(s):	The customer
Preconditions:	The customer must be on the web site.
Trigger:	The customer selects “Manage Cart”.
Main Scenario:	1. System displays a Manage Cart screen with all items. 2. The customer updates the quantity of the item. 3. The system shows the updated status of the item.
Alternatives:	1.1 The system displays “Cart is Empty” 2.1 Optionally the customer selects “Remove Item” 2.1.1 The system removes the item from the cart.
End Conditions:	The customer was validated.

Use Case ID	**UC 1.11 – Return Order**
Goal:	Customer is given instructions on how to return an order.
Actor(s):	The customer
Preconditions:	The customer must be on the web site. The customer must have an account. The customer must have an order.
Trigger:	The customer selects “Manage Account”.
Main Scenario:	1. Customer selects “View Order History” 2. System displays orders. 3. The customer selects the order. 4. The customer selects “Return Order”. 5. The system instructs the customer to call customer service during normal business hours.
Alternatives:	2.1 The customer is not logged in and is taken to the login screen to login **[UC 1.7]** and then returned after credentials are validated.
End Conditions:	The customer is given instructions to call customer service.

Use Case ID	**UC 1.12 – Track Order**
Goal:	Customer successfully tracks the order
Actor(s):	The customer
Preconditions:	The customer must be on the web site. The customer must have an account. The customer must have an order.
Trigger:	The customer selects “Manage Account”.
Main Scenario:	1. Customer selects “View Order History” 2. System displays orders. 3. The customer selects the order. 4. The system shows the status on that order (Shipped, In-Process, Cancelled, In-Transit, Returned, Delivered) along with all current details about the status. If customer had selected tracking/confirmation when the order was purchased and status is shipped, In-transit, Returned, or Delivered, then all pertinent package tracking data is shown on the status page along with tracking numbers and link to shipper’s website.
Alternatives:	2.1 The customer is not logged in and is taken to the login screen to login **[UC 1.7]** and then returned after credentials are validated.
End Conditions:	The customer tracks the order.

Use Case ID	**UC 1.13 – View Order History**
Goal:	Customer successfully views order history.
Actor(s):	The customer
Preconditions:	The customer must be on the web site. The customer must have an account.
Trigger:	The customer selects “Manage Account”.
Main Scenario:	1. Customer selects “View Order History” 2. System displays orders with summary data.
Alternatives:	2.1 The customer is not logged in and is taken to the login screen to login **[UC 1.7]** and then returned after credentials are validated.
End Conditions:	The customer views order history.

Use Case ID	**UC 1.14 – View Order Status**
Goal:	Customer successfully views order status.
Actor(s):	The customer
Preconditions:	The customer must be on the web site. The customer must have an account. The customer must have an order.
Trigger:	The customer selects “Manage Account”.
Main Scenario:	1. Customer selects “View Order History” 2. System displays orders. 3. The customer selects the order. 4. The system shows the status on that order (Shipped, In-Process, Cancelled, In-Transit, Returned) along with all current details about the status.
Alternatives:	2.1 The customer is not logged in and is taken to the login screen to login **[UC 1.7]** and then returned after credentials are validated.
End Conditions:	The customer viewed the order status.

Use Case ID	**UC 1.15 – Reset Password**
Goal:	Customer successfully resets password
Actor(s):	The customer
Preconditions:	The customer must be on the web site. The customer must have an account.
Trigger:	The customer selects “Reset Password”.
Main Scenario:	1. System displays a “Rest Password” screen. 2. The customer enters his/her username in the control provided. 3. The customer selects “Reset Password Now” 4. System sends new password to primary email account of user and system displays information that shows the customer that the password was sent to the primary email address.
Alternatives:	4.1 Customer does not have an account. 4.1.1 System displays “Invalid Username, please try again or contact customer service during normal business hours” 3.1 Customer selects “Send password hint to my email” 4.0 System sends password hint to primary email account of user and system displays information indicating that the password hint was sent to the primary email address.
End Conditions:	The customer’s password is reset.

Use Case ID

UC 1.16 – Search Items

Goal: Customer successfully displays an item he/she was searching for

Actor(s): The customer

Preconditions: The customer is on the web site.

Trigger: The customer selects “Search for Items”

Main Scenario:

1. System displays search area for searching items.
2. Customer enters search criteria into provided controls
3. Customer select “Search”
4. Items are displayed.

Alternatives:

4.1. Customer selects next data page.

4.1.1. Another page of items are displayed.

4.2. “No items are found” displayed to customer

4.2.1. Customer repeats search routine [UC 1.16] or customer browses items [IC 1.2].

End Conditions: The customer successfully finds his/her items.

Customer Service Use Cases

Use Case ID	**UC 2.1 – Disable Customer Account**
Goal:	Customer service disables user account successfully.
Actor(s):	The customer service rep
Preconditions:	The customer service rep. must be logged into the web site. The customer must have an account and the customer must have provided the rep with his/her account info.
Trigger:	The customer service rep. selects “Disable User Account”.
Main Scenario:	1. Customer service rep select ‘View Customer Account’ 2. Customer service rep enters customer’s user name. 3. System displays user account information. 4. Customer service rep confirms account info with customer. 5. Customer service rep selects “Disable Account” 6. System validates that the account has been disabled and sends a verification email to customer’s email address.
Alternatives:	2.1 System displays “Invalid Username, please try again”. 2.1.1 Customer service rep asks for customer’s telephone number and enters it. 2.1.2 System displays customer information.
End Conditions:	Customer Account is disabled.

Use Case ID

UC 2.2 – Override Pricing

Goal: Provide Customer with discounts.

Actor(s): Customer service manager

Preconditions: Customer service manager must be logged in and have customer info communicated to him/her via phone, fax or email. Customer order must exist.

Trigger: The customer service rep. selects “Pricing”.

Main Scenario:

1. Customer service manager selects “Override Pricing”.
2. Customer service manager enters customer’s order number.
3. System displays customer’s order detail.
4. Customer service manager enters discount amounts and selects ‘Re-Calculate’.
5. System recalculates total amount due and requests verification.
6. Customer service manager selects “Apply discounts”.
7. System applies discounts to the order and informs customer via email.

Alternatives:

3.1 System displays “Order Not Found”

- 3.1.1 Customer service manager requests customer’s telephone number and enters it.
- 3.1.2 System displays customer information.
- 3.1.3 Customer service manager selects “view customer’s order history”.
- 3.1.4 Customer service manager browses orders, selects order.

5.1 System displays “Order total Can Not Be Less Than 0”

End Conditions: Discount is applied to customer’s order.

Use Case ID

UC 2.3 – Refund Order

Goal: Customer gets refund.

Actor(s): The customer service rep

Preconditions: Customer service rep. must be logged in and have customer info communicated to him/her via phone, fax or email. Customer order must exist.

Trigger: The customer service rep. selects “Refund Order”.

Main Scenario:

1. Customer service rep selects “Refund Order”.
2. Customer service rep enters customer’s order number.
3. System displays customer’s order detail.
4. Customer service enters refund amount.
5. Customer service rep selects “Apply Refund ”.
6. System applies refund to the order.
7. System issues credit to customer’s credit card.
8. System sends a verification email to the customer.

Alternatives:

2.1 System displays “Order Not Found”

- 2.1.1 Customer service rep asks for customer’s telephone number and enters it.
- 2.1.2 System displays customer information.
- 2.1.3 Customer service rep. selects “view customer’s order history”.
- 2.1.4 Customer service rep. browses orders, selects order.

7.1 Credit transaction fails.

- 7.1.1 System sends an email to the customer and requests a call from customer to customer service.
- 7.1.2 Use case ends.

End Conditions: Refund is applied to customer’s order.

Use Case ID	**UC 2.4 – Reset User Account**
Goal:	Reset user password.
Actor(s):	The customer service rep
Preconditions:	Customer service rep. must be logged in and have customer on the phone to confirm customer's identity. Customer must have an account.
Trigger:	The customer service rep. selects "Reset User Account" from his/her Menu.
Main Scenario:	1. Customer service rep selects "Reset User Account". 2. Customer service rep enters customer's phone number. 3. System displays customer account information. 4. Customer service rep verifies identity of customer. 5. Customer service rep assigns temporary password. 6. Customer service rep informs customer. 7. Customer logs in with new password.
Alternatives:	2.1 Customer record not found. 2.1.1 Customer service rep informs customer. 2.1.2 Use case ends.
End Conditions:	The customer's password is successfully reset.

Use Case ID

UC 2.5 – Validate System Status

Goal: Verify that the system is up and running.

Actor(s): The customer rep

Preconditions: Inquiry into system status.

Trigger: Customer inquiry.

Main Scenario:

1. The customer accesses the web site.
2. The customer logs into the web site.
3. The system informs the customer of system status.

Alternatives:

1.1 Home Web page crashes.

1.1.1 Customer service rep contacts Tech support.

1.1.2 Tech support provides rep with timeframe.

1.1.3 Customer service rep informs customer to try back in X hours/minutes.

End Conditions: The customer is informed of system status.

Use Case ID

UC 2.6 – View Pending Shipment from Vendor

Goal: Inform customer of upcoming shipment of out of stock item ordered.

Actor(s): The customer service rep

Preconditions: Inquiry made by customer on back ordered item. Order for backorder items must exist.

Trigger: The customer service rep selects “View Pending Shipments”.

Main Scenario:

1. Customer service rep enters order number.
2. System displays order detail.
3. Customer service rep selects back ordered item.
4. System displays item detail.
5. Customer service rep selects ‘View Shipment Status’
6. System displays vendor shipment detail.
7. Customer service rep informs customer of planned shipping date.

Alternatives:

1.1 System displays “Order Not Found”

1.1.1 Customer service rep asks for customer’s telephone number and enters it.

1.1.2 System displays customer information.

1.1.3 Customer service rep. selects “view order history”.

1.1.4 Customer service rep. browses orders, selects order.

End Conditions: The customer is informed of item’s upcoming ship date.

Use Case ID

UC 2.7 – Change Pricing

Goal: Change pricing of item authorized by vendor.

Actor(s): The customer service rep

Preconditions: Vendor special sale. Item must exist in database.

Trigger: The customer service rep selects “Pricing”.

Main Scenario:

1. Customer service rep. Select “Change Pricing”.
2. Customer service rep. Enters item number.
3. System displays item information.
4. Customer service rep enters new price.
5. Customer service rep enters price effective date.
6. Customer service rep enters price expiration date.
7. System requests confirmation of entered information.
8. Customer service rep selects ‘Confirmed’.
9. System updates item information.

Alternatives:

2.1 System displays “item Not Found”

2.1.1 Customer service rep browses items by description.

2.1.2 Customer service rep select item.

End Conditions: Price is updated on item.

Use Case ID

UC 2.8 – Add Adjusted Pricing to Website

Goal: Update item price.

Actor(s): The customer service rep

Preconditions: Request made by Sales department.

Trigger: The customer service rep selects “Pricing”. Item must exist.

Main Scenario:

1. Customer service rep select s “Adjust Pricing”
2. System displays item entry screen.
3. Customer service rep enters item#.
4. System displays item detail.
5. Customer service rep updates item price.
6. System requests confirmation of new price.
7. Customer service rep selects ‘Confirmed’.
8. System update database with new price.

Alternatives:

2.1 System displays “item Not Found”

2.1.1 Customer service rep browses items by description.

2.1.2 Customer service rep select item.

End Conditions: The price of item is successfully adjusted.

Warehouse Use Cases

Use Case ID

UC 3.1 – Generate Pick List

Goal: The Warehouse Worker (Stock Picker) generates a list of items on selected orders, used when pulling stock items for order fulfillment.

Actor(s): Stock Picker

Preconditions:
1. Pending customer orders exist in the system.
2. The Stock Picker is logged into the system.

Trigger: The stock picker chooses the option to view pending customer orders based on selected parameters:
Priority Level
Date/Time Frame
Order Size
Order Status

Main Scenario:
1. The system displays a list of orders based on the stock picker's criteria.
2. The stock picker selects one or more orders.
3. The stock picker selects the option to generate a list of all items on the orders selected. (See Note –N1)
4. The system displays the list. (See Notes –N2)
5. The stock picker selects the option to print the list.
6. The system generates the list along with associated packing slips and shipping labels for each individual order containing items on the list.

Alternatives:

1a. The System Displays Only One Order

1a1. The stock picker selects the displayed order.

1b. No Orders Available

1b1. The system displays a message that no orders are available meeting selection criteria.
1b2. The stock picker selects to view pending customer orders based on different criteria.

5a. The Stock Picker Chooses to Use List without Printing

5a1. The stock picker continues the order fulfillment process by pulling items from the list.
5a2. **See UC: Update Inventory**

End Conditions: A pick list of items for selected orders is available for the stock picker's use during the order fulfillment process.

Notes: **N1:** Regardless of the stock picker's selection criteria (Trigger), backordered items, once restocked, will ALWAYS show up on pick lists after an inventory update has been performed on new shipments received

containing those particular items.

N2: A pick list will display items in an order based on the physical location of the warehouse. Items in the same or approximate area are listed sequentially, followed by the next, closest item or group of items, and so on.

Use Case ID

UC 3.2 – Update Inventory

Goal: The Warehouse Worker (Stock Clerk) updates inventory quantities for stock items that have arrived with a new shipment, or, have been pulled from the warehouse to fill orders (See Note – N1).

Actor(s): Stock Clerk

Preconditions:

1. Inventory item records exist in the system.
2. The Stock Clerk is logged into the system.

Trigger: The Stock Clerk selects the option to update inventory.

Main Scenario:

1. The clerk scans the barcode on one of the new, incoming items.
2. The system displays information on the scanned item. (See Note – N3)
3. The clerk increases the quantity one count for each item scanned.
4. The clerk makes all other necessary updates to the item record (e.g. warehouse location).
5. The clerk repeats steps 1-4 for each new item.
6. The clerk saves the updates.
7. The system confirms the save.

Alternatives:

1a. Scanner Not Used

1a1. The clerk manually enters the barcode number for the item into the system.

1b. New Stock Item Not in Inventory

1b1. **See UC: Add New Inventory Item**

2a. Incorrect Item is Displayed

2a1. The clerk verifies correct information for the displayed item and the new item being scanned. Necessary adjustments are made to the system record(s).

3a. Decrease Quantity

3a1. The clerk decreases the item quantity.

3a2. The system, as needed, automatically generates a reorder request once stock levels falls below designated thresholds for inventory items pulled.

3b. Multiple Counts per Scan

3b1. For each scanned item, the clerk increases the quantity a number matching the total for that particular item received.

End Conditions: Inventory item records have been updated.

Notes:

N1: Regarding “decreasing” the inventory count on stock items,…this is primarily an automated process done when a customer places an order. However, in some instances, the receiving clerk will manually adjust quantities.

N2: Reorder requests automatically generated when stock levels fall below a designated threshold, are consolidated into POs that get forwarded to suppliers.

N3: Item information can include name, description, serial number, product and price code, vendor part number, stock/location number, quantity on hand, stock level threshold and reorder number and location in the warehouse.

Use Case ID

UC 3.3 – Flag Order as Shipped

Goal: The Warehouse Worker (Shipping Clerk) changes a customer order's status to "Shipped".

Actor(s): Shipping Clerk; The Finance System

Preconditions:

1. The clerk verifies all items collected for the order are on the packing slip and packages the items in an appropriate shipping container.
2. The clerk has authorized access to the system's shipping module, which includes information on the order status and requested shipping method of each order.
3. The clerk is logged into the system.

Trigger: The clerk locates the customer order number on the packing slip and enters it into system.

Main Scenario:

1. The system displays the customer order.
2. The clerk verifies that the displayed customer order matches the packing slip.
3. The clerk makes any necessary changes in the system to quantities being shipped and changes the customer order status to "Shipped". (See Notes – N1)
4. The system sends the Finance System the updated order status.
5. The Finance System sends a confirmation back to the system acknowledging the status change and indicating that the customer was charged. (See Notes – N2)
6. The clerk enters into the system, shipment information including the weight, tracking number and shipping status, and, adds the package to the associated shipping company's list for next available regularly scheduled pickup. (See Notes – N3)
7. The system sends the customer an email confirmation of his/her shipping status.

Alternatives:

2a. System Displayed Customer Order and Packing Slip Don't Match
    2a1. The clerk verifies the proper entry of the customer order number. Contact Customer Service.

3a. System Doesn't Accept Changed "Shipped" Status
    3a1. The clerk ensures all necessary criteria required by the system for an order status change has been properly entered.
    7a2. The clerk contacts appropriate support – Technical Support/ Help Desk.

5a. System Error Message Returned from Finance System
    5a1. The clerk contacts appropriate support – Technical Support/

Help Desk.

End Conditions: A customer order status has been changed to “Shipped”; the order has been confirmed, packed and prepared for shipping.

Notes: **N1:** “Necessary changes” include those made by the stock picker and marked accordingly on the pick list.

N2: The Finance System charges the customer (credit card) for items shipped. When placing an order, customer credit cards are authorized for the entire order amount regardless of what is actually shipped. They are only **charged** for what items ship when the order moves to warehouse and the order status has been changed in the system to “Shipped”.

N3: For special orders, express deliveries or air cargo, shipping companies are contacted for scheduled pickup and delivery.

Use Case ID

UC 3.4 – Add New Inventory Item

Goal: The Warehouse Manager updates the inventory database with a new stock item.

Actor(s): Warehouse Manager

Preconditions:

1. A non-stock item, not currently the inventory database, needs to be added to inventory.
2. The Warehouse Manager is logged into the system.
3. The Warehouse Manager has proper authorization to add new stock items.

Trigger: An item is not recognized by the system when updating inventory for restock.

Main Scenario:

1. The manager checks system records to verify the item is from a properly authorized vendor and that the item is something not regularly stocked. (See Notes – N1)
2. The manager selects the option to enter a new stock item.
3. The system displays a blank item record.
4. The manager fills in all appropriate information including the item name, description, serial number, product and price code, vendor part number/UPC code, stock/location number, quantity on hand, stock level threshold and reorder number.
5. The manager saves the entry.
6. The system displays a confirmation that the new record was added.
7. The use case ends.

Alternatives:

1a. Not an Authorized Vendor
    1a1. The manager works with Accounting to contact the vendor, establish authorized vendor status, and update the system record.

5a. System Error Prevents the New Entry from Being Saved
    5a1. The manager re-enters the information.

6a. No Confirmation Received
    6a1. The manager finds/selects the new record to verify proper entry.

End Conditions: A new stock item has been added to inventory.

Notes: **N1:** Business rule to establish validity. System design option may require this information prior to entering a new item.

Use Case ID	**UC 3.5 – Reorder Products (Generate PO)**
Goal:	An email is sent to the vendor when the stock reaches a certain value.
Actor(s):	The WebOrder system
Preconditions:	None
Trigger:	An order is packed that contains an item.
Main Scenario:	1. An order is packed. 2. The system decrements the count in the Inventory table for the product. 3. A trigger on the Inventory table in the database checks stock level and reorders if it is below the threshold value by sending an email to the vendor.
Alternatives:	
End Conditions:	An order is placed for the product.

Sales Use Cases

Use Case ID

UC 4.1 – Manage Categories

Goal: The actor manages one or more item categories

Actor(s): The sales representatives

Preconditions: Actor must be logged on

Trigger: Actor selects “manage categories”

Main Scenario:

1. System shows the category hierarchy
2. Actor selects the category to manage
3. Actor selects “Edit”
4. The system shows Category name
5. Actor selects “Save”
6. System saves changes

Alternatives:

2.1 Actor selects “Add” category

2.1.1 System continues at Main scenario 4

3.1 Actor selects the ”Ad sub category” button

3.1.1 System continues at Main scenario 3

5.1 Actor selects “Discard”

5.1.1 Use case ends

End Conditions: Changes are persisted to the storage

Use Case ID

UC 4.2 – Manage Items

Goal: The actor manage an item

Actor(s): The sales representatives

Preconditions: The actor must be logged on

Trigger: The actor selects “manage items”

Main Scenario:

1. System shows list of items
2. Actor selects the item to manage
3. Actor selects “manage item“
4. The system shows Item details:
   Item name
   Category
   Vendor
5. Actor selects “Save”
6. System saves changes
7. System shows list of items

Alternatives:

2.1. Actor selects “Add Item”

2.1.1. The UC continues at main scenario 4

3.1. Actor selects “Delete Item”

3.1.1. The item is deleted

3.1.2. System shows list of items (Continue at UC main scenario 7)

End Conditions: Changes are persisted to the storage

Use Case ID

UC 4.3 – Manage Shippers

Goal: The actor manages shipper details

Actor(s): The sales representatives

Preconditions: The actor must be logged on

Trigger: The sales representative selects “manage shippers”

Main Scenario:

1. System shows list of shippers
2. Actor selects shipper to manage
3. Sales representative selects “Edit”
4. System shows shipper details:
   Shipper name
   Shipper address
   Shipper phone number
   Shipper e-mail address
5. Actor selects “Save”
6. System shows list of shippers

Alternatives:

2.1. Actor selects “Add”

2.1.1. A unique item is reserved for the item and an empty item is saved to the persistent storage

2.1.2. UC continues at Main scenario 4

3.2. Actor selects delete

3.2.1. The shipper is deleted from the persistent

3.2.2. System shows list of shipper (Main scenario 6)

End Conditions: Changes are persisted to the storage

Use Case ID

UC 4.4 – Manage Vendors

Goal: The actor manages a vendor

Actor(s): The sales representatives

Preconditions: The actor must be logged on

Trigger: The actor selects “manage vendors”

Main Scenario:

1. System shows list of vendors
2. Actor selects shipper to manage
3. Actor selects “Edit”
4. System shows vendor details:
   Vendor name
   Vendor address
   Vendor phone number
   Vendor e-mail address
5. Actor selects “Save
6. System shows list of vendor s

Alternatives:

2.1. Actor selects “Add”

2.1.1. A unique item is reserved for the vendor and an empty vendor is saved to the persistent storage

2.1.2. UC continues at Main scenario 4

3.2. Actor selects delete

3.2.1. The vendor is deleted from the persistent

3.2.2. System shows list of Vendors (Main scenario 6)

End Conditions: Changes are persisted to the storage

Use Case ID

UC 4.5 – View and Print Report

Goal: The actor prints a report

Actor(s): The sales representatives or warehouse manager

Preconditions: The actor must be logged on

Trigger: The actor selects “View report”

Main Scenario:

1. System shows a list of available reports.
2. User selects desired report
3. System shows a list of selection and grouping criteria.
4. System displays a report.
5. User selects print report
6. System prints reports

Alternatives:

End Conditions: System prints report

System Administrator Use Cases

Use Case ID	**UC 6.1 – Manage Users**
Goal:	The system administrator add, changes or deletes a user from the user database
Actor(s):	The system administrator
Preconditions:	The administrator must be logged on
Trigger:	The administrator selects “manage users”
Main Scenario:	1. System shows a list of users 2. Actor selects the user to manage 3. Actor selects “Edit user” 4. The system shows user details User name Password User profile 5. Actor selects “Save”
Alternatives:	5.1 Actor selects “Add” user 5.1.1 System creates an empty user with an unique ID 5.1.2 UC continues at Main scenario step 4 3.2 Actor selects “Delete user” 3.2.1 System deletes user 5.1. Actor selects “Discard changes” 5.1.1. Changes to user are rolled back
End Conditions:	Changes are persisted to the storage

Use Case ID

UC 6.2 – Manage User Profiles

Goal: The actor adds, deletes or modifies a user profile

Actor(s): The system administrator

Preconditions: The actor must be logged on

Trigger: The actor selects “manage user profiles”

Main Scenario:

1. System shows list of user profiles
2. Actor selects the user profile to manage
3. Actor selects “edit user profile”
4. The system shows User profile details:
   Profile name
   Profile rights
5. Actor selects “Save”

Alternatives:

4.1. Actor selects “Add”

4.1.1. System creates an empty user profile with an unique ID

4.1.2. The UC continues at main scenario step 4

3.1. Actor selects “Delete User profile”

3.1.1. The user profile is deleted

5.1. Actor selects “Discard changes”

5.1.1. Changes to user are rolled back

End Conditions: Changes are persisted to the storage

Appendix C: Analysis Models

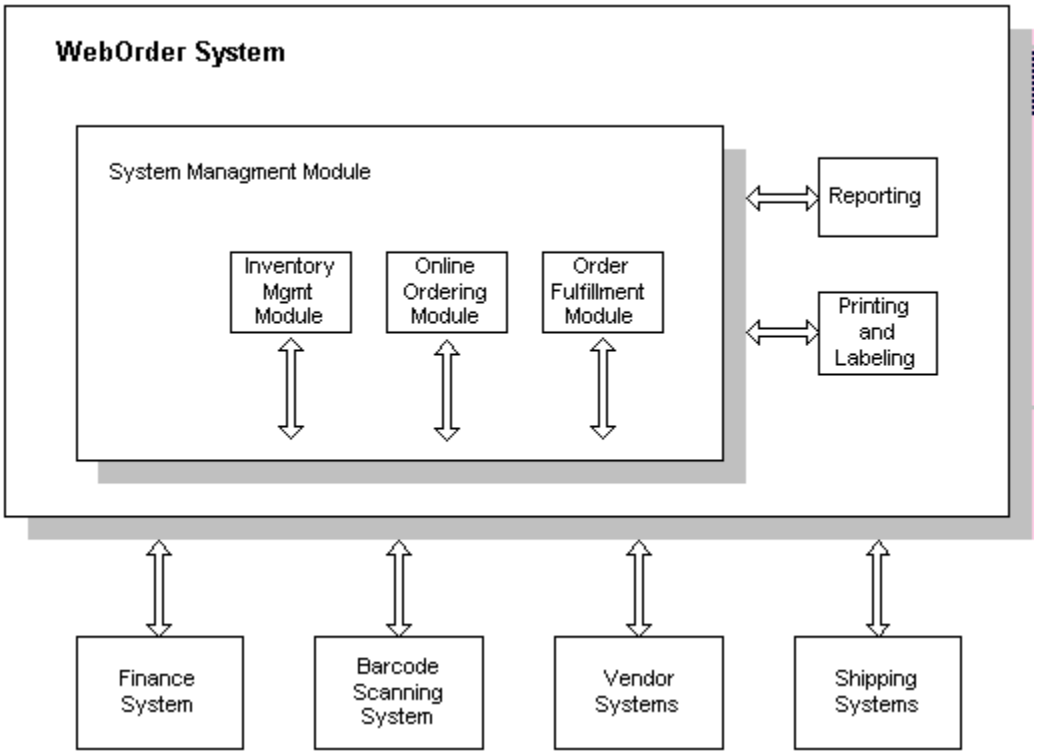

Figure 1: Product Component Diagram

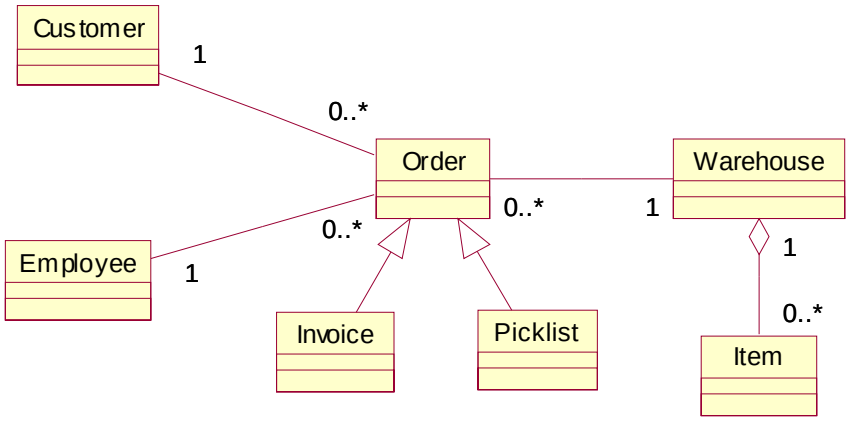

Figure 2: Analysis-level Class Diagram – Structural relationship of the Order class.

Appendix D: Issues List

- Additional requirements may be needed for development of a Transition Plan.
- Operational support requirements during sustainment will be provided in the Maintenance contract.
- It was determined that Windows XP could not handle more than 10 web connections when using IIS5.1 as a web server and so a decision was made early that a server OS would be used, and not a workstation platform, that would not hinder the ability of ToolCo's customers to access the system. The decision was also made with foresight allowing the web application to be horizontally scaled out as the number of web based clients increased. It was also determined, by contacting the vendor, Microsoft, that they did not have a high availability solution for keeping Windows XP up and running 24/7/365 and that that type of availability was only available on a SERVER platform such as Windows 2003.

Appendix E: Data Dictionary

Table	Ordinal	Object Name	Data Type	Length
BIN				
BIN	1	BinID	int	4
BIN	2	Locator	varchar	50
BIN	3	Sizex	int	4
BIN	4	sizey	int	4
BIN	5	sizez	int	4
BIN	6	maxweight	int	4
Categories				
Categories	1	CategoryID	int	4
Categories	2	CategoryName	nvarchar	100
Categories	3	ParentID	int	4
Customers				
Customers	1	CustomerID	int	4
Customers	2	FullName	nvarchar	100
Customers	3	EmailAddress	nvarchar	100
Customers	4	Password	nvarchar	100
Employee				
Employee	1	EmployeeID	int	4
Employee	2	FirstName	varchar	50
Employee	3	LastName	varchar	50
Employee	4	DepartmentID	int	4
Inventory				
Inventory	1	InventoryID	int	4
Inventory	2	ProductID	int	4
Inventory	3	Quantity	int	4
Inventory	4	BINID	int	4
InventoryHistory				
InventoryHistory	1	InventoryID	int	4
InventoryHistory	2	ProductID	int	4

InventoryHistory	3	BinID	int	4
InventoryHistory	4	Quantity	int	4
OrderDetails				
OrderDetails	1	OrderID	int	4
OrderDetails	2	ProductID	int	4
OrderDetails	3	Quantity	int	4
OrderDetails	4	UnitCost	money	8
OrderDetails	5	PickListID	int	4
OrderDetails	6	PackListID	int	4
Orders				
Orders	1	OrderID	int	4
Orders	2	CustomerID	int	4
Orders	3	OrderDate	datetime	8
OrderStatus				
OrderStatus	1	OrderStatusID	int	4
OrderStatus	2	OrderID	int	4
OrderStatus	3	Description	varchar	50
OrderStatusHistory				
OrderStatusHistory	2	OrderStatusID	int	4
OrderStatusHistory	3	OrderID	int	4
OrderStatusHistory	4	Description	varchar	50
PackingTracking				
PackingTracking	1	PackListID	int	4
PackingTracking	2	Status	varchar	50
PackingTracking	3	DateTimeStamp	datetime	8
PackingTracking	4	ShipperComments	varchar	50
PackList				
PackList	1	PackListID	int	4
PackList	2	PackerID	int	4
PackList	3	ShippingMethodID	int	4
PackList	4	ShipperPackageID	varchar	50
PickList				
PickList	1	PickListID	int	4

PickList	2	PickerID	int	4
PickList	3	PickedTotal	int	4
PickList	4	TravelTime	char	10
PickListSequence				
PickListSequence	1	PickListID	int	4
PickListSequence	2	ProductID	int	4
PickListSequence	3	InventoryID	int	4
PickListSequence	4	PickSequence	int	4
PickListSequence	5	BINDID	int	4
Products				
Products	1	ProductID	int	4
Products	2	CategoryID	int	4
Products	3	ModelNumber	nvarchar	100
Products	4	ModelName	nvarchar	100
Products	5	ProductImage	nvarchar	100
Products	6	UnitCost	money	8
Products	7	Description	nvarchar	7600
Products	8	VendorID	int	4
Products	9	ShippingWeight	real	4
Products	10	sizeClass	int	4
Reviews				
Reviews	1	ReviewID	int	4
Reviews	2	ProductID	int	4
Reviews	3	CustomerName	nvarchar	100
Reviews	4	CustomerEmail	nvarchar	100
Reviews	5	Rating	int	4
Reviews	6	Comments	nvarchar	7700
Reviews	7	CustomerID	int	4
Shipper				
Shipper	1	ShipperID	int	4
Shipper	2	ShipperName	varchar	50
Shipper	3	ShipperAddress	varchar	50
ShippingMethod				

ShippingMethod	1	ShippingMethodID	int	4
ShippingMethod	2	ShipperID	int	4
ShippingMethod	3	Description	varchar	50
ShippingMethod	4	CostPerUnit	money	8
ShippingMethod	5	UnitID	int	4
ShoppingCart				
ShoppingCart	1	RecordID	int	4
ShoppingCart	2	CartID	nvarchar	100
ShoppingCart	3	Quantity	int	4
ShoppingCart	4	ProductID	int	4
ShoppingCart	5	DateCreated	datetime	8
Vendor				
Vendor	1	VendorID	int	4
Vendor	2	VendorName	varchar	50
Vendor	3	VendorAddress	varchar	50