**1. Introduction**

***1.1 Purpose of Document***

This is a Requirements Specification document for a new web-based bug tracking system for Simsoft Technologies (India) Pvt. Ltd. Simsoft is a software firm offering complete software solutions for enterprises. The new system will upgrade the current bug tracking and management system to provide customers and employees a customised experience while adding and handling bugs. This document describes the scope, objectives and goal of the new system. In addition to describing non-functional requirements, this document models the functional requirements with use cases, interaction diagrams, and class models. This document is intended to direct the design and implementation of the target system in an object oriented language.

***1.2 Project Summary***

Project Name: Bug Tracking System

Project Manager: Aashay Kulkarni

Project Analyst: Aashay Kulkarni

***1.3 Background***

Simsoft works to provide affordable and indigenous software solutions for the enterprise using the latest technologies available. They are a well-equipped software solutions provider having experience in enterprise solutions, document management systems, workflow systems, CAD solutions, networks & network applications, databases and complete software solutions on the web platform.

Currently the bug tracking system in use is Bugzilla, a web-based general-purpose bug tracking system and testing tool originally developed and used by the Mozilla project, and licensed under the Mozilla Public License. Since it is a general-purpose tool, it can only help meet basic requirements of both users and the development team. To handle specific requirements of certain clients and to aid the development team in dealing with the entire process of dealing with bugs and managing the progress of patches.

Problems with the current system include

·         the criteria available are general purpose and hence restrict the user when they wish to add a new bug with specific features

·         users who need more technical information have difficulty accessing the relevant tags for bugs since the interface is clunky

·         developers that work on a particular bug have to face issues if the users have not followed the firm’s best practices while adding the bugs

The higher management of Simsoft has requested that an analysis be done with a view to reengineering the current bug tracking system. The new system should allow users to add more advanced and specific tags to bugs while also enabling the developers to deal with bugs with ease with all the necessary information being made available to them.

***1.4 Project Scope***

The scope of this project is a web-based system that supports the marketing of SBE products directly to customers as well as through the existing sales agent network. Advertising of products, inventory control, and account billing are not part of this project.

The two current web sites will be replaced by this new system. In addition, changes to the logical and physical design of the current databases are expected. The actual implementation of a new database system is not part of this project. A web search engine and language translator will be obtained as purchased components for the new system. Their internal details are not part of this project. Issues of website security, other than password protection within the site, are not part of this project.

***1.5 System Purpose***

*1.5.1 Users*

Those who will primarily benefit from the new system and those who will be affected by the new system include

Customers:

Upon implementation of the new system, customers will find site navigation, product identification and product ordering easier. Customers will be able to choose whether to buy directly from SBE or work with a sales agent.

Sales Agents:

The new system will provide sales agents with more detailed, accurate and up-to-date product information. They will be informed of potential customers more quickly and they will have faster access to the product owner.

Product Owners:

Product owners will be allowed to maintain the data about their products directly. This will eliminate delays in getting new products or changed product specifications into the system.

Customer Service Department:

The new system should reduce the workload of Customer Service as customers are able to find the information they need from the web-site.

Marketing Department:

Site navigation data could be sent to the Marketing Department. Understanding how a customer uses the web site to make a purchase will result in improvements in getting and keeping customers.

Accounting Department:

Purchase information will be sent directly to Accounting, allowing for more accurate and timely billing.

Shipping Department:

Purchase information will be sent directly to Shipping for inventory control and order processing.

Information Technology Department:

This department will be responsible for implementing the new database, hosting the website and maintaining the system.

*1.5.2 Location*

The system will be available to any potential customer using the Internet. SBE employees may also use the system from any location and will be able to access restricted areas of the site through a password protection scheme.

*1.5.3 Responsibilities*

The primary responsibilities of the new system:

·         provide customers direct access to up-to-date, accurate product information on which they can make a decision to buy

·         customize product offerings to specific users

·         allow differential access to web pages based on type of user

·         allow customers to place an order through the website

·         allow customers to request the assistance of a sales agent

·         provide sales agents improved access to product information and product owners

·         allow product owners to maintain information about their products directly

·         allow access to whitepapers on demand

·         send order information directly to Accounting and Shipping

Other desired features of the new system:

·         a consistent "look and feel" throughout the website

·         full-text searches of the web pages a user has permission to access

·         on-line help in website navigation

·         password protection scheme for non-public web pages

·         translation of a web page to another language

·         The system will not be responsible for account receivables, or inventory control.

*1.5.4 Need*

This system is needed in order to service the expected increase in demand for alternative energy products. Replacement of the current websites will eliminate the shortcomings of those sites. The new system will allow SBE to rapidly increase sales without a large and expensive increase in the number of sales agents and other customer support employees.

*1.6 Overview of Document*

The rest of this document gives the detailed specifications for the new sales system. It is organized as follows:

·         Section 2: Functional Objectives  
 Each objective gives a desired behavior for the system, a business justification, and a measure to determine if the final system has successfully met the objective. These objectives are organized by priority. In order for the new system to be considered successful, all high priority objectives must be met.

·         Section 3: Non-Functional Objectives  
 This section is organized by category. Each objective specifies a technical requirement or constraint on the overall characteristics of the system. Each objective is measurable.

·         Section 4: Context Model  
 This section gives a text description of the goal of the system, and a pictorial description of the scope of the system in a context diagram. Those entities outside the system that interact with the system are described.

·         Section 5: Use Case Model  
 The specific behavioral requirements of the system are detailed in a series of use cases. Each use case accomplishes a business task and shows the interaction between the system and some outside actor. Each use case is described with both text and an interaction diagram. An interface prototype is also shown. The system use case diagram depicts the interactions between all use cases and system actors.

·         Section 6: An appendix containing a glossary that defines terms specific to this project

**2. Functional Objectives**

*2.1 High Priority*

1.       The system shall allow for on-line product ordering by either the customer or the sales agent. For customers, this will eliminate the current delay between their decision to buy and the placement of the order. This will reduce the time a sales agent spends on an order by x%. The cost to process an order will be reduced to $y.

2.       The system shall reflect a new and changed product description within x minutes of the database being updated by the product owner. This will reduce the number of incidents of incorrectly displayed information by x%. This eliminates the current redundant update of information, saving $y dollars annually.

3.       The system shall display information that is customized based on the user's company, job function, application and locale. This feature will improve service by reducing the mean number of web pages a user must navigate per session to x. It should reduce unnecessary phone calls to sales agents and staff by x%.

4.       The system shall allow employees to view the owner of any product. An employee should be able to contact the correct owner in one phone call x% of the time.

5.       The system shall allow a customer to directly contact the nearest sales office in his region. This will improve service by reducing the time to respond to a customer request to no more than x days.

6.       The system shall provide accounting with accurate purchase transaction data. This will improve customer service by reducing billing complaints by x% and save $y in correcting inaccurate accounts.

7.       The system shall provide shipping with accurate order data. This will allow the order to be processed in x days and inventory to be updated within y hours.

*2.2 Medium Priority*

1.       The system shall provide a search facility that will allow full-text searching of all web pages that the user is permitted to access. The system must support the following searches:

a.       find all words specified

b.       find any word specified

c.       find the exact phrase

d.       Boolean search

2.       The system shall make whitepapers available from the product page. This will allow customers to answer product questions themselves, reducing customer support costs by $x annually.

*2.3 Low Priority*

1.       The system shall allow the user's status to be stored for the next time he returns to the web site. This will save the user x minutes per visit by not having to reenter already supplied data.

2.       The system shall provide marketing with customer navigation information. This information will allow marketing to determine what information prompts a purchase and help target potential customers more effectively. This will increase annual revenue by $x in additional sales.

3.       The system shall translate web pages into the languages of the countries where the company's products are available. This will improve customer service and reduce the number of support calls from foreign customers by x%.

**3. Non-Functional Objectives**

*3.1 Reliability*

·         The system shall be completely operational at least x% of the time.

·         Down time after a failure shall not exceed x hours.

*3.2 Usability*

·         A sales agent should be able to use the system in his job after x days of training.

·         A user who already knows what product he is interested in should be able to locate and view that page in x seconds.

·         The number of web pages navigated to access product information from the top page should not exceed x.

*3.3 Performance*

·         The system should be able to support x simultaneous users.

·         The mean time to view a web page over a 56Kbps modem connection shall not exceed x seconds.

·         The mean time to download and view and whitepaper in PDF format for a 56Kbps modem shall not exceed x seconds.

*3.4 Security*

·         The system shall provide password protected access to web pages that are to be viewed only by employees.

·         Transaction data must be transmitted in encrypted form.

*3.5 Supportability*

·         The system should be able to accommodate new products and product lines without major reengineering.

·         The system web site shall be viewable from Internet Explorer 4.0 or later, Netscape Navigator/Communicator 3.0 or later and the America Online web browser version 3.0 or later.

*3.6 Online user Documentation and Help*

·         The system shall provide a web page that explains how to navigate the site. This page should be customized based on what pages that user is allowed to access.

·         This help page should be accessible from all other pages.

*3.7 Purchased Components*

·         A language translation tool from English to French and English to German will be needed.

·         A web site search engine will be needed.

*3.8 Interfaces*

·         The system must interface with

·         The current Oracle database systems for product and order information

·         The current Oracle Financial accounting system

·         The current AccountPro inventory system

·         The acquired language translation tool

·         The acquired web site search engine

**4. The Context Model**

*4.1 Goal Statement*

·         The goal of the system is to increase sales revenue by x% over the next y years with only a z% increase in sales and customer service staff by allowing complete and accurate customer and order information to be captured directly from the customer as well as from sales agents

·         Providing customers and sales agents fast access to up-to-date and accurate product information and whitepapers.

*4.2 Context Diagram*

*4.3 System Externals*

Customer

A customer is any user of the system that has not identified himself as an SBE employee. A customer may search for public product information by keyword, access whitepapers for a particular product, order a product or request assistance from a sales agent. A customer who provides personal information will get search and query results customized to his preferences.

Sales Agent

A sales agent is a user who has been verified as an SBE employee. A sales agent may access all available product information and whitepapers, including the product owner. A sales agent may place an order on behalf of a customer. He will be informed by the system of any customers in his region who have requested assistance.

Product Owner

The product owner is a user who has been verified as an SBE employee. The product owner may update product information and whitepapers for those products for which he is responsible.

Accounting

The Accounting department is responsible for all SBE financial transactions. The Accounting department is informed of all purchases and is responsible for later collection of accounts receivable.

Shipping

The Shipping department is informed of purchases so that it can process the order and update inventory.

Marketing

The Marketing department is responsible for creating demand for SBE products. It will receive website navigation data to use in planning marketing strategies.

**5. The Use Case Model**

*5.1 System Use Case Diagram*

*5.2 Use Case Descriptions (for selected cases)*

Notes:

* For all use cases, the user can cancel the use case at any step that requires user input. This action ends the use case. Any data collected during that use case is lost.
* For all use cases that require a logged in user, the current login session is updated during the use case to reflect the navigation paths through the use case.

**6. Appendix**

Glossary

Whitepaper

Technical paper containing detailed product specifications.