**System Request**: Bug Tracking Software Application

**Business Needs**: A software bug tracking application has been initiated to capture issues within commercially deployed software commonly used within workplaces. In turn this will improve user productivity and the quality of software. It provides a platform where both software developers and users of their software can communicate. Together they can reduce the number of bugs missed during the testing process which often can only be found after considerable usage. The application can also be used by software development companies during development of a new application as a way of finding and tracking bugs.

**Business Requirements:**

The extreme base user of the system is an unregistered guest looking for information on an issue he/she is having with software. A guest can:

* Search the site for reported bugs and view comments.

Once registered, a user becomes a bug reporter. Reporters use Bug Tracker to report issues they encounter while using software. A reporter has the following functionalities available to them:

* Register to gain access to the profile subsystem and Bug Report subsystem. Once registered they will have access via a log-in form.
* Create and edit their profile.
* Report a bug.
* Comment on any bug reported.
* Register to a bug, to receive notifications and updates.
* Gain reputation points for reporting good bugs.
* Search for existing bugs.
* Search for other users of the site and view their comments and reported bugs.

Another type of user is a Reviewer, otherwise known as a tester. Reviewers test applications once they have been updated. Reviewers have the same functionality as Reporters as well as:

* View a list of fixed bugs.
* Record the outcome of testing via comments

Next type of user is a Developer who has all functionality of a Reporter as well as:

* View a list of bugs to fix.
* Check a bug in or out to move it to a new status.
* Ability to communicate with Triagers on the progress of a fix.

A Triager uses the system to monitor the life-cycle of bugs by assigning bugs to developers to fix and creating statistical data on bugs reported. They have all functionality of a Reporter, but can also do the following:

* Assign bugs to developers
* Check for duplicates/invalid bugs
* Produce bug reports
* Edit existing bugs
* View developers current assigned bug list
* Disable/enable a user account.

The Systems Administrator is the super-user and maintains the system. They have all the functionality of a Reporter, as well as:

* Import user profiles
* Add new users
* Remove existing users
* Edit existing user profiles
* Enable/disable user accounts

**Business Value:**

It’s expected Bug Tracker will improve the quality of business software by reducing the number of problems users encounter. This will be particularly noticeable within companies using complex software applications critical to their day-to-day business. Often bugs in commercial software cannot be found until it has been deployed and used in many ways. Conservative predictions show an 80% improvement in the quality of software applications resulting in a 30% increase in work-place productivity and accuracy. The frustration of end users is considerably lower as they have a quick way to report issues.

Software development companies can use it during development stages of a new application. It has been shown to reduce the monthly development time of 10 developers by 340 hrs.

**Estimates of tangible value to a medium sized company using common business software**:

$50,000 yearly reduction in help desk calls related to software bugs.

$100,000 yearly increase in productivity due to faster, better quality software.

**Estimates of tangible value to providers of the Software**:

Specific values of costs for every software provider cannot be captured but in general Software providers will experience the following:

* Cost of finding and fixing bugs after deployment is considerably lower with less returns.
* Reduction in development time for 10 developers can amount to $10,000 per month.
* Reduction in cost of staging many tests with non-technical users interacting with it on different platforms.
* Spend less time discussing bugs with customers and more time fixing them.

**Special Issues or Constraints:**

* If Bug Tracker is used within a company, the system will integrate into their existing IT department and network if they have one and be run by IT management. Otherwise it can be run externally by Bug Tracker staff via a VPN internet connection.

References:

ElementTools, 2016, Take Charge Of Your Projects, viewed on 31 August 2016 at

http://www.elementool.com/contact/bt.html.