Adapting SUGAR CRM for use in Help Desk in IMBAUTO SA Systems Area

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Summary. *The objective of this research focuses on the adaptation of the Sugar CRM application for use in HELP DESK1 in the systems department. The WEB application, a project sponsored by the Imbauto S.A company.*

The application is based on the SugarCRM system as a community version, which is the free version of this application; the system has a MYSQL database and development mostly with PHP and JAVASCRIT, highlighting the use of JQUERY. It may only be used within the intranet Imbauto system.

Keywords

SugarCRM, Help Desk, MySQL, Php, JavaScript, Jquery.

1.Introduction

The following research shows relevant information about the business and the systems department that is the area where the system will be applied.

The User Support additionally is innovative it allows to improve the service and functionality, improves the information processing more appropriately. The difficulty for users to have an immediate response to an event occurred and the cost to the company generates by not having a system that efficiently reduces errors and data loss. Besides applications events on paper are generally not correct mechanisms and technological tools that should be used to register, so the registration and monitoring are done with a very difficult controlling time.

The Help Desk is developed in web languages such as PHP, JAVASCRIPT, HTML and others. It also has a MYSQL database allowing them to have a high reliability in the information. It will allow to all users with computer problems that are classified by type of problem presented and the request priority, a ticket and a technician will be assigned to give a prompt solution.

One advantage is that the Help Desk is based in Sugar CRM; it has a system with many features that help with a better develop, a very efficient at the information process of the user's application.

The system includes modules for creating tickets and respective screens that allows following step by step the solution, which controlled in every step the ticket, plus it has several reports showing all the require information for Help Desk administration.

2.Materials and Methods

2.1 Materials

For the project it was used a web system Sugar CRM Community Edition, software free version that is developed in PHP, HTML, JavaScript languages, and others that allow a great extent on the development and adaptation of the application for use in the Help Desk.

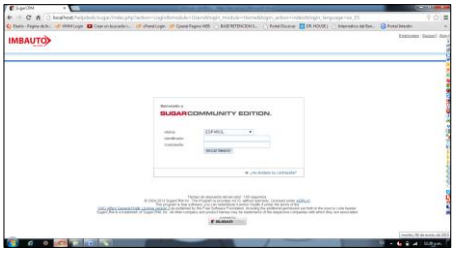


Figure 1. Main Window SugarCRM.
Source: Own.

[1] **HELP DESK:** is a set of technological and human resources, to deliver services with the possibility to manage and resolve all possible incidences comprehensive manner.

Sugar CRM is a management system in the customer relation (CRM) based on LAMP[2], developed by the Sugar CRM Inc. located in Cupertino, California, which allows companies to organize, register and maintain information in all aspects their relationships with customers. **[WEB1]**

Important elements of the application are HTML, PHP, CSS y JAVASCRIPT languages in which the application is developed.

2.2 Methodology

The Help Desk is done through the proposed development methodology, which is a combined methodology, linking XP and SCRUM3. The process is performed as the Flow Diagram (**see figure 2**), which starts when the user through the Help Desk ask for an event.

After receiving the event, is classified and resolved to have the solution, otherwise it is designate to an appropriate staff member for the event solution. After the event a satisfaction survey is sent to the user and the solution is stored in the knowledge base.

At the end of each iteration (module) a meeting with personnel systems Imbauto is performed to demonstrate the functionality of the system, once the iterations are completed, we will proceed to develop the Technical Manual and User Manual, respective in trainings will be held at users and ending with the production software application, performing the respective Imbauto Act of Acceptance.

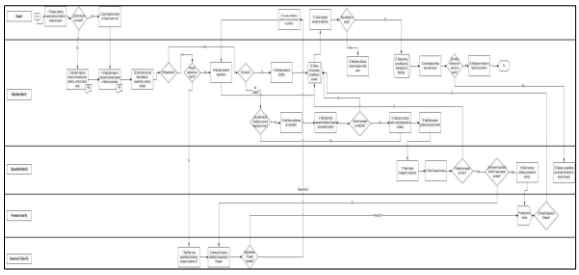


Figure 2. Flowchart.
Source: Own.

The accomplishment of the methodology will be developed in the Help Desk conducted with a group of people who will be directly involved. The development team is as follows:

Name	Description	Rol XP
Adrián Merlo	Boss Systems - Imbauto S.A	TIC Manager
Ing. Byron Pinargote	Process Manager - Imbauto S.A	Software Responsable
Employees	Imbauto staff that use the computer within the Company.	User
Cristian Bastidas Flores	Tesista	Programmer

Table 1. Development Members Help Desk
Source: Own.

Obtaining requirements are made at a meeting between the Imbauto Systems Headmaster and Programmer (Thesis doer), the indispensable and necessary for the development of the "Help Desk" requirements was obtained also agreed at the proofs completion of Modules for the operation of the system is effective and easily understood by the users.

It takes into account user stories that were done. That shows all the information for the correct development of each Help Desk modules, taking into account all the requirements set by users.

Then all user stories performed are listed. Where all requirements for the design and programming iterations of the proposed system are shown and used to describe the functionality of the Help Desk:

- Requirements for using the Help Desk.
- Security and Access Control.
- Enter Event and Create Ticket.
- Classification Ticket – Consultation.
- Classification Ticket – Requirement.
- Classification Ticket – Incident.
- Solution Ticket.
- Knowledgebase and Reports.

2.2.1 System Architecture.

After obtaining the user stories, we proceed to design the system architecture and functional architecture. Each of the modules will be specified in the system and their respective functionality.

The Model, View and Controller is based on the architecture of Sugar CRM, which is the base system in which the Help Desk applies, therefore all the features of the architecture are similar to those of Sugar CRM.

Model: The Help Desk is represented by Sugar Bean, and any subclass Sugar Bean since the system is based on Sugar CRM. Many of the modules also use the Help Desk Sugar Objects class.

View: Based on Sugar View, it is characteristic not limited to HTML files, and allows to send data encoded as part of the view or any other structure that is desired.

[2] **LAMP:** Linux-Apache-MySQL-PHP.
[3] **SCRUM:** It is a process that regularly apply a set of best practices for working collaboratively as a team and get the best possible outcome of a project.

SugarView implements most of the basic logic of sight, as the footer and headers page.

Controller: The Help Desk controller is SugarController, which handles all the basic actions of any module as EditView and DetailView to save a record. It can also use a controller.php for each module to replace the sugarcontroller.

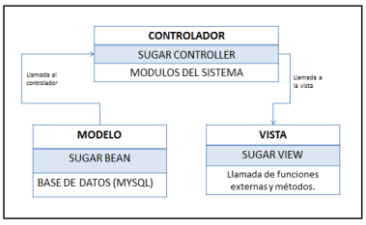


Figure 3: MVC Architecture System
Source: Own

2.2.2 Functional Architecture

The Help Desk will be developed with the Apache web server and Tomcat application server and MySQL database repository. The system will be put into production Linux platform version in Centos; it will have a Tomcat application server Apache and MySQL database. Besides the base of Help Desk is SugarCRM.

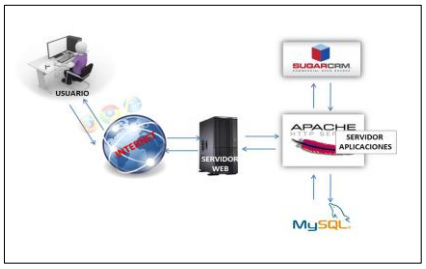


Figure 4: Functional Architecture
Source: Own

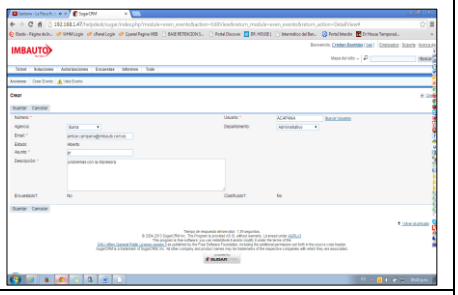
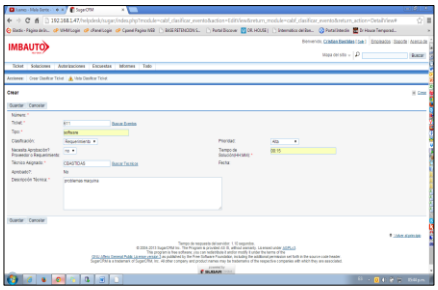
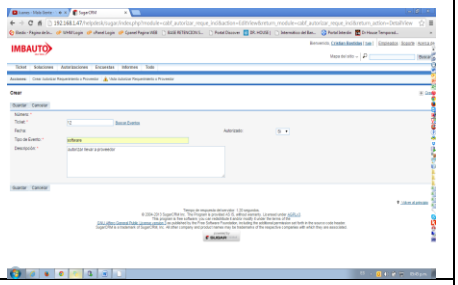
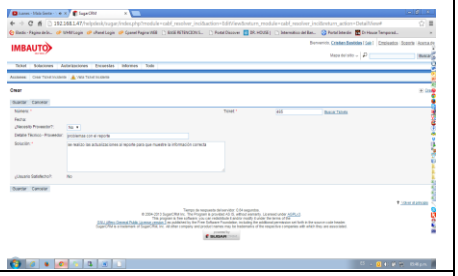
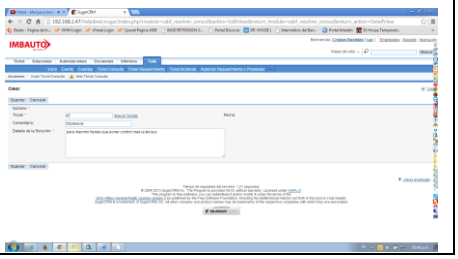
3.Results

Once finished the research is unable to obtain a product of high quality software that meets all the needs expressed early in the development.

The Help Desk implemented effectively increases performance systems department Imbauto SA, improving the resolution of events presented by users and reducing waiting times for its solution.

There has also been a better control and management of events by the Systems Department and increased productivity in addressing them with better service times. And this generates the user satisfaction because they receive prompt attention to their problems and keeps them informed at all times about the status.

The modules created for the application are seen in the following table:

Module	Screenshot
Creating event or ticket.	
Classification Ticket	
Authorization Ticket, type requirement or incident.	
Incident Ticket solution.	
Consultation Ticket solution.	

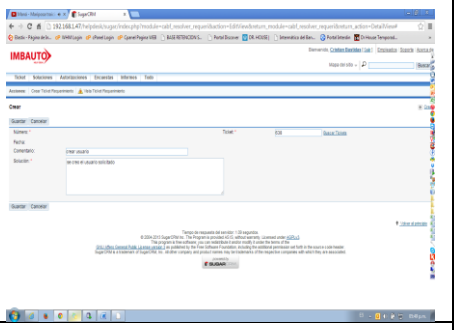
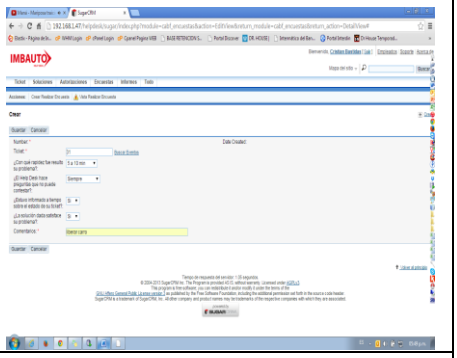
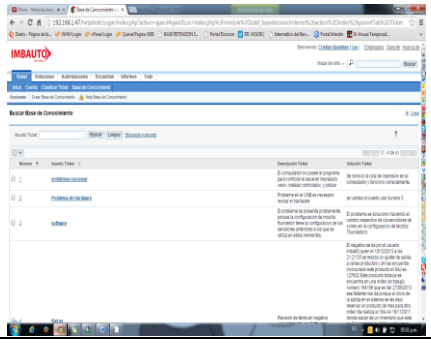
Requirement Ticket solution.	
Poll.	
Knowledge Base.	
Reports.	

Table 2. Modules Help Desk
Source: Own.

4.Conclusions

The Help Desk is the best method that can be used in the systems department or customer service department or client as the case where it is applied.

The SugarCRM system is one of the best CRM in the world, allowing to maximize the Help Desk development, as the two systems are oriented monitoring and performance of a customer in the case of CRM and an event if the Help Desk.

The Help Desk has a great stability and security to be based on SugarCRM which has its well-established structure.

The development of Help Desk will take into information about the events generated by each user every time.

The Web systems provides a variety in the development such as the use of email for all notifications sent by the Help Desk.

The architecture function allows a better understanding with SugarCRM, because it handles n-layers facilitating the adaptation of the system in use as Help Desk.

The development methodology was used and it was very efficient when was being applied in the preparation of this technological system.

By managing user stories can be control at the time of development, and have a system that meets fully the requirements requested.

The Help Desk Reports features allow quick and easy analysis of events, user satisfaction and performance Systems Department Imbauto SA

The use of free tools in the development of the system allowed a very low cost.

It is very important that all users who run the system know the benefits afforded them to use it in a right way and to take advantage of all the support provided to them.

5.Acknowledgements

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Bibliographic References

6.References

Books

Beisse, F. (2009). En F. Beisse, A Guide to Computer User Support for Help Desk and Support Specialists.

Ramez Elmasri, S. B. (2003). En S. B. Ramez Elmasri, Sistemas de Bases de datos Quinta Edición. Western Illinois University.

(2008). En F. Zaninotto, Symfony La Guia Definitiva. Libros Web.

Online Publications

[WEB1]:

SugarCRM. (November 19, 2013). Wikipedia. Retrieved 2013, of SugarCRM: http://es.wikipedia.org/wiki/SugarCRM

[WEB2]:

SugarCRM Editions. (November 20, 2013). SugarCRM. Retrieved 2013, of Support SugarCRM: http://support.sugarcrm.com/02_Documentation/01_Sugar_Editions

[WEB3]:

Support SugarCRM. (November 25, 2013). SugarCRM. Retrieved 2013, of SugarCRM Support: http://support.sugarcrm.com/02_Documentation/04_Sugar_Developer/Sugar_Developer_Guide_6.6/03_Module_Framework/01_MVC/00_Introduction

[WEB4]:

Oracle. (November 27, 2013). Oracle MySQL Resources. Retrieved 2013, of Oracle: http://www.oracle.com/us/products/mysql/resources/index.html

[WEB5]:

Server HTTP Apache. (November 20, 2013). Wikipedia. Retrieved 2013, of Server Apache: http://es.wikipedia.org/wiki/Servidor_HTTP_Apache

[WEB6]:

Tomcat. (November 30, 2013). Wikipedia. Retrieved 2013, of Tomcat: http://es.wikipedia.org/wiki/Tomcat

[WEB7]:

PHP. (November 29, 2013). W3schools. Retrieved 2013, of PHP: http://www.w3schools.com/php/php_intro.asp

[WEB8]:

JavaScript. (November 29, 2013). Wikipedia. Retrieved 2013, of JavaScript: http://es.wikipedia.org/wiki/JavaScript

[WEB9]:

CSS. (November 29, 2013). Wikipedia. Retrieved 2013, of CSS: http://es.wikipedia.org/wiki/JavaScript

[WEB10]:

Jquery. (November 29, 2013). Wikipedia. Retrieved 2013, of Jquery: http://es.wikipedia.org/wiki/JQuery

[WEB11]:

Jquery. (November 29, 2013). Jquery. Retrieved 2013, of Jquery: http://jquery.com/

SUGAR CRM

Plan2.net. (2008). Sugar Community Edition User Guide Version 5.2. [Online] Obtained: http://www.plan2.net/fileadmin/p2net/downloads/SugarCRM_User_Guide/Sugar_CommunityEdition_UserGuide_5.2.pdf [Consulted: April 10, 2013]

SugarCRM. (2013). Duda Estructura y Ejecución de SugarCRM. [Online] Obtained: http://forums.sugarcrm.com/f49/duda-estructura-y-ejecucion-de-sugarcrm-87528/ [Consulted: July 12, 2013]

SugarCRM. (2010). Cuál es el campo del bean que guarda el id de módulo relacionado?. [Online] Obtained: http://forums.sugarcrm.com/f49/cual-es-el-campo-del-bean-que-guarda-el-id-de-modulo-relacionado-57770/ [Consulted: September 09, 2013]

SugarCRM. (2011). Visualizar el campo ID en Oportunidades. [Online] Obtained: http://forums.sugarcrm.com/f49/visualizar-el-campo-id-en-oportunidades-76280/ [Consulted: September 11, 2013]

SugarCRM. (2010). Campo calculado. [Online] Obtained: http://forums.sugarcrm.com/f49/campo-calculado-56901/ [Consulted: October 15, 2013]

Software Apprenticeship. (2012). Enviar correos con sugarcrm desde un script php personalizado. [Online] Obtained: http://softwareapprenticeship.blogspot.com/2012/01/enviar-correos-con-sugarcrm-desde-un.html [Consulted: November 23, 2013]

SugarCRM. (2012). Enviar Correo (mail) mediante un logic hook. [Online] Obtained: http://forums.sugarcrm.com/f49/enviar-correo-mail-mediante-un-logic-hook-78684/ [Consulted: November 17, 2013]

Cheleguanaco. (2009). SugarCRM Customization: Custom Workflow E-mails. [Online] Obtained: http://cheleguanaco.blogspot.com/2009/11/sugarcrm-customization-custom-workflow.html [Consulted: November 17, 2013]

SugarCRM. (2008). Rename and Configure Module Tabs v5. [Online] Obtained: http://media.sugarcrm.com/university/library/hdi_html/HDI_Studio_Module_Tabs_v50.4.1.html[Consulted: December 17, 2013]

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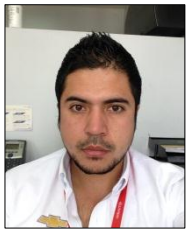
Fernando GARRIDO Born in the city of Quito – Pichincha on March 23, 1964. His superiors studies attended the Universidad Central Ecuador, obtaining the title of Engineer in Computer Science. It also has a degree in "Especialista de gerencia de Proyectos" (UNIANDES), a Diploma in "Gerencia de Marketing" (UNIANDES), Master in "Informática" Universidad Técnica de Ambato and Universidad Técnica del Norte (UTN). He was Director of the Department of Computer Science at the UTN (2007-2011), currently holds the position of Deputy Dean of the Faculty of Engineering in Applied Science UTN.



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