



Service Learning in Computer Science Radio Planting and Development Database

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Introduction

HCJB Global, formerly HCJB World Radio, now has two main divisions, HCJB Global Voice (media) and HCJB Global Hands (healthcare). Together with partners around the globe, HCJB Global has ministries in more than 100 countries with the gospel being aired in more than 120 languages and dialects.

For years HCJB has been planting radio stations around the world. They have established more than 300 radio plants already and plan to keep growing the depth of partnerships and the number of radio plants in the coming years.



Fig. 1 African boy wearing a Sonset Radio.

Under the management of Josh Gee the RPADD System was created to help HCJB Global keep track of their partnering ministries and to help in developing new partnerships with the intent to spread the gospel throughout the world.

Project Background

In September, 2005, Dan Anderson, of HCJB Global, approached Prof. Felix Aguilar about building a Radio Planting and Development Database. Students in SYS 390 (Information Systems Analysis) sections interviewed HCJB personnel to determine needs and created conceptual designs. The following spring, SYS 394 (Information System Design) sections developed working prototypes. Two class members, Tim VanReenen and Nate Todd, served as summer interns with HCJB and developed the first production version. During fall, 2006, we developed rigorous configuration management, testing, and production release procedures in COS 370 (Software Engineering Project I). During J-term, we developed two major modules for RPADD as our senior projects (see Equipment and Project/Notes Subsystem sections, below). This poster describes the work completed during our Senior Project.



Fig. 2 Tim, Joe, Steve and Brandon of the RPADD team.

Technology

Development

The system is an ASP based web application running with a SQL Server 2005 Express DBMS.

The entire project is under SVN source control to allow for multiple development sandboxes and integration of code between all of the developers.

Testing

Browser-level testing is done with the Selenium IDE tool.



Fig. 3 Views of the Testing, Development and Production Websites.

Equipment Subsystem

During the Interterm of 2007, we successfully integrated the equipment tracking subsystem into the HCJB World Radio's RPADD System. It allows Radio Planters at HCJB to enter in equipment then relate it to other equipment, ministry activities, and sites.

As we integrated the new sub-system we found it hard to present the new functionality in a way that did not feel foreign to the user. Time was spent thinking and rethinking the presentation of the material. With the use of AJAX functionality, we were able to provide the look and feel of a normal application while maintaining speed and usability.



Fig. 4 The equipment system uses model windows, images and Ajax technology to make it easy to use and feel like a real application.



Fig. 5 Adding Tabs and images helped simplify the already easy to use interface.

Project Subsystem

The Project subsystem gives HCJB Global the ability to track ongoing projects that are occurring between the mission and their partnering ministries throughout the world. Projects may consist of equipment supply, training and consulting activities. The Project subsystem allows HCJB Global to track and update the current status of projects. Each activity is associated with different information, ranging from start and completion dates, to budget, to specific equipment information. Time was spent to find the clearest way to present the data, because the projects may be quite complex and contain much information.

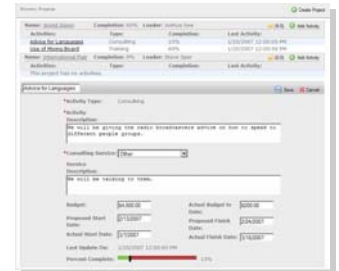


Fig. 6 Editing Activity information is easy to do and keeps the user in the context of what Project they are working with.

Notes Subsystem

A Notes subsystem was also implemented to enhance the communication and usability of the Project subsystem. A user of the system is able to attach a note to a project, giving other users of the system information that does not fit in precisely within the project. Notes can be sent to specific users as well as users from an entire region. The Notes subsystem, while implemented only for projects, has been designed to be easily expanded to many different areas of the system. This portability of the Notes subsystem is one of its key features.

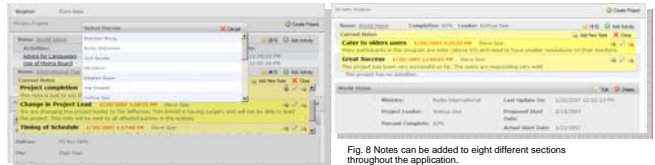


Fig. 7 Notes can be sent to a specific user of the system, giving them access to the event that the note belongs to.