

Project and Program Monitoring System for the Municipality of Los Baños: An OpenLGU Module

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I. INTRODUCTION

A. Background of the Study

Monitoring has been the focus of many institutions to track progress on the set plans and standards nowadays. Project and program monitoring gives the management information about possible problems that may occur during implementation of the activities. Thus, they can immediately find a solution and perform appropriate actions to deal with it. Decision to terminate or continue the operation should have given consideration by the management.

The implementation of project and program monitoring system will directly benefit our Local Government Units (LGUs). Project and program monitoring reports is passing through different sectors manually and usually takes too much time and effort. The municipality of Los Baños is an example of an institution that uses traditional way of passing reports and documents, According to the Municipal Planning and Development Coordinator of Los Baños Ms Twila T. Torres, all necessary reports about the projects and programs of Los Baños go through their office first, which is the planning and development division. After examining the documents, it will pass through different sectors: engineering, accounting, and treasuring division. This kind of process usually takes a long time before reaching the Local Chief Executive for final approval. Such drawback leads in creating a project and program monitoring system for the municipality of Los Baños.

The Project and Program Monitoring System for the Municipality of Los Baños is part of the OpenLGU project consisting of different modules that was started 2012 by Professor Danilo J. Mercado. It aims to help the community of Los Baños by making a system that makes transactions or processes accessible via a web application. This results in a faster processing of reports from one sector to another.

B. Significance of the Study

The municipality of Los Baños is one of the government institutions that do not have enough budget for computer systems. Traditionally, transactions are done manually and it takes a long time to finish a single process or transaction. Such considerations have been the basis for creating a free system that will help the community made every transaction faster and hassle free. An example of which is the web-based project and program monitoring system, a system that will

aid the intended user to check progress and reports about the project and program via web.

With this system, users such as the project and program monitoring committee (PPMC), project implementors, officer-in-charge for the program view and send status reports about the ongoing projects and programs implemented. The Municipal Planning and Development Coordinator will monitor the progress of the activities involved and will be responsible for adding, editing, removing, and updating reports on the database. Moreover, intended user may download and upload reports about a certain projects or programs. Through the computer-generated system, which allows access to relevant and up-to-date information about the projects and programs, transactions are just a click away. This will serve the community better by providing a system in which the public can view and search projects and programs of their municipality. Instead of heading to the government office to check, the normal citizen can visit the web and monitor the projects and programs in their convenience.

C. Objective of the Study

This system aims to implement a web-based application that will provide the users the following:

- 1) An interface that will allow users to look for necessary information about the project and program that are being implemented;
- 2) A system that would monitor the progress of the ongoing project and programs in their municipality; and
- 3) A system that is capable of storing files and reports into a database for future use.

II. REVIEW OF RELATED LITERATURE

The project and program monitoring system is part of the designed OpenLGU module where every transactions or processes in a Local Government Unit (LGU) made available via a web application. There were several studies and implementation in line with monitoring system conducted at the University of the Philippines Los Baños. Victor E. Bien and John Paul M. Ibay, former students of the Institute of Computer Science (ICS) together with their adviser Professor Rodolfo N. Duldulao Jr. developed the Project Monitoring System for Water Service Provider Company. This system aims to help water service companies to monitor the projects done by their concessionaires [1]. Three types of users access the system: the concessionaires, the management, and the administrator. Each user has a permission to view details and progress of the projects of the company. The following tools

were used to develop the system: Google Web Toolkit 2.0.4 for its interface programming, Smart GWT 2.1 as its framework, MySQL 5.0 as its main database management system, and PHP for scripting purposes.

Another monitoring system was the Design and Implementation of the UPLB-OVCRE Research Monitoring System by Jason Paul L. Nisiguchi along with Professor Rodolfo N. Duldulao Jr. and Professor Arian Jacildo. It was mainly for the four entities involved in research monitoring: the researcher, the Office of the Vice Chancellor for Research and Extension (OVCRE), the Office of the Chancellor (OC), and the evaluators. The system records the progress of the researches with only permitted users to view the log [2]. The development tools used were JDK 1.6.0, ZK 3.5.1, Torque 3.1, MySQL Server 5.0 and Apache Tomcat 6.

UPLB OVCRE Research Monitoring System has reached its phase two in which Cyrus Venn Casada attempt to automate processes in monitoring research work first developed by Nisiguchi. It focussed on testing, maintenance and upgrades of the system [3]. The system uses SmartGWT client UI library and runs is Google Web Toolkit.

Monitoring system is widely used in different government agencies. One of which is the Bureau of Plant Industry (BPI) under the Department of Agriculture (DA). Because of large amount of information delivered in and out every day in the administrative support division of BPI, Ma. Clarisse Francesca B. Aquino along with Professor Reinald Adrian Pugoy created Bureau of Plant Industry Los Baños Procurement Transaction Monitoring System (ProTraMS). This was created mainly for the Accounting and Disbursing Units of BPI. ProTraMS is a system that records and keeps track of transactions and documents as it goes through the whole procurement process [4]. A tracking number is assigned to every transaction made. This will make the transaction history easily monitored. The author used the following software in developing the system: XAMPP 1.7, Apache HTTP Server, PHP, CodeIgniter 1.7.2, and MySQL 5.1.33.

III. METHODOLOGY

A. Development Tools

1) *Yii Framework*: Yii is an open source, object-oriented, component-based PHP framework best for developing large-scale web application. It is release under the New Berkeley Software Distribution (BSD) License that allows free use to develop either open-source or proprietary web application. Some features of Yii include the following: Model-View-Controller (MVC) design pattern, error handling and logging, unit and functionality testing based on PHP Unit and Selenium a portable software testing framework for web application that deploys on Windows, Linux and Macintosh platforms. In addition, Yii is carefully designed to work well with third-party code. Code generated by Yii components and command line tools complies to the XHTML standard.

2) *PHP*: PHP is an open-source server-side scripting language that is used to build dynamic web pages. It is embedded in HTML source document. PHP can be deployed on most

web servers such as Apache Web Server, Apache Tomcat, Microsoft Internet Information Services (IIS) Windows Servers, etc.

3) *PostgreSQL*: PostgreSQL is a powerful, open source object-relational database system. It runs on all major operating systems such as Linux, UNIX, and Windows. Its SQL implementation is compliant to ANSI-SQL:2008 standard and is highly customizable operating with various programming languages such as Perl, Java, Python, etc.

4) *UML 2.0*: UML 2.0 is a version of a standard general-purpose modelling language used to aid in designing software systems. It provides tools in order to create visual models following the object-oriented concept.

B. Functional Requirements/System Functionalities

Users in the system can be classified into six types: the constituents, project implementors, officer-in-charge for the program, Project and Program Monitoring Committee (PPMC), Municipal Planning and Development Coordinator, Local Chief Executive and Chairperson (Mayor), and the administrator.

The constituents can:

- 1) View the listings of all the projects sorted from oldest to latest and grouped by category (social development, economics development. Etc.).
- 2) View the listings of ongoing projects.
- 3) View the projects in certain barangays.
- 4) View the following data of a project:
 - a) Project title.
 - b) Brief description of the project, including the objectives and scope.
 - c) Location on where the project is implemented.
 - d) Start date of the project implementation and the estimated date of completion.
- 5) View the listings of all the programs sorted from oldest to latest and grouped by category.
- 6) View the programs in certain barangays.
- 7) View the following data of a project:
 - a) Program title.
 - b) Brief description of the program, including the objectives, scope and stakeholders of the program.
 - c) Location on where the program is implemented.
- 8) Send comments, questions and suggestions to the Coordinator.

The project implementors can:

- 1) View data about the project. Data contains:
 - a) Project Title.
 - b) Brief description of the project including the objective, category (Social, Economic, Cultural, etc) and the stakeholders of the project.
 - c) Status of the project.
 - d) Period of implementation of the project.
 - e) Cost requirement of the project.
 - f) Contractor or the winning bidder for the project.
- 2) Submit initial project report to the PPMC before the project implementation. Reports contain:

- a) Project Title.
 - b) Schedule of the project implementation.
 - c) Financial and physical targets for each project.
- 3) Submit accomplishment report to the PPMC: Reports contain:
- a) Project Title.
 - b) Status of the project prior to the estimated completion date.
 - c) Financial disbursements prior to the latest monitoring date.
- 4) Submit problems/issues report to the PPMC.
- 5) Send questions to the PPMC.
- 6) Edit personal account.

Officer-in-charge for a program can:

- 1) View data about a program. Data contains:
 - a) Program Title.
 - b) Brief description of the program including the objective, category (Social, Economic, Cultural, etc) and the stakeholders of the program.
 - c) Status of the program.
 - d) Period of implementation of the program.
 - e) Cost requirement of the program.
 - f) Officer-in-charge for the program.
- 2) Send status reports to the PPMC. Reports can contain:
 - a) Budget allotted for the program.
 - b) Actual budget used for the program implementation
 - c) List of members assigned for the program implementation.
 - d) List of beneficiaries of the program.
- 3) Send questions to the PPMC.
- 4) Edit Personal account.

The Project and Program Monitoring Committee can:

- 1) View data about a project or a program. Data contains:
 - a) Project or Program Title.
 - b) Brief description of the project or program including the objective, category (Social, Economic, Cultural, etc) and the stakeholders of the project or program.
 - c) Status of the project or program.
 - d) Period of implementation of the project or program.
 - e) Cost requirement of the project or program.
 - f) Contractor or the winning bidder for the project or Officer-in-charge for the program.
- 2) Download reports submitted by the project implementors.
- 3) Download reports submitted by the officers-in-charge for the programs.
- 4) Send feedbacks for the questions from the project implementors and officers in charge for the programs.
- 5) Submit project reports to the Municipal Planning and Development Coordinator. Reports contain:
 - a) Listings of projects.
 - b) Problems encountered during the implementation of each project.
 - c) Current project expenditures.
- 6) Edit personal account.

The Municipal Planning and Development Coordinator (MPDC) can:

- 1) Add project information. Information contains:
 - a) Title of the project
 - b) Brief description of the project
 - c) Objective of the project
 - d) Period of Implementation
 - e) Location or site of each projects
 - f) Quarterly Disbursement of project fund
 - g) Target disbursement or the anticipated expenditures for each project
 - h) Actual disbursement or the actual cumulative expenditures for each project
 - i) Contractor, which refers to the winning bidder who shall undertake the project
- 2) Add program information. Information contains:
 - a) Title of the program
 - b) Brief description of the program
 - c) Objective of the program
 - d) Period of Implementation
 - e) Location or site for the program
 - f) Disbursement of program fund
 - g) Target disbursement or the anticipated expenditures for the program
 - h) Actual disbursement or the actual cumulative expenditures for the program
 - i) Officer-in-charge for the program and members of the body who will conduct the program
 - j) Listings of beneficiaries of the program
- 3) Modify the data previously entered in the system.
- 4) View information about the program.
- 5) Delete information about the program.
- 6) Search a program filtered by category.
- 7) Post announcements on the system
- 8) Send feedback for the questions from the constituents, project implementor, officer-in-charge of the program, and PPMC.
- 9) Download reports from project implementors and officer-in-charge for the program
- 10) Send reports to Local Chief Executive and Chairperson.
- 11) Edit personal account.

The Local Chief Executive and Chairperson can:

- 1) View all information in the system
- 2) Download reports from the MPDC.
- 3) Edit personal accounts.

The administrator can:

- 1) Add user account.
- 2) Edit user account.
- 3) Delete user account.
- 4) Search user account.
- 5) Approve sign-up request.