HUMAN RESOURCE INFORMATION SYSTEM FOR THE EMPLOYEES/FACULTY OF BULACAN STATE UNIVERSITY: A PROJECT MANAGEMENT APPROACH

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Abstract - The Project Management Framework consists of the following processes such as Initiation, Planning, Execution, Monitoring and Controlling and Close out and the Knowledge Areas covers managing Integration, Scope, Time, Cost, Human Resource, Communications, and Risk Management. The development of Human Resource Information System (HRIS) for the employees/faculty of Bulacan State University: A Project Management Approach covers managing all the project activities for the development of Human Resource Information System (HRIS) aligned with Project Management Framework and integrated the Knowledge Areas. The significant features of the Human Resource Information System for the employees/faculty of Bulacan State University are the following: aid in performing the function of the Human Resource department personnel such as file and record management of an employee/faculty from recruitment and hiring. The system also covers the evaluation necessary for promotion of employees/faculty; and generating of reports needed such as personal data sheets and service records. In order to achieved success on the Human Resource Information Systems project, the following objectives was met within the designated time and covers the complete list of systems features which meets budget allocation.The researcher has the over-all responsibility for the execution of the project. The Project Manager managed day to day resources, provided project guidance and monitors and reports on the projects metrics as defined in the Project Management Plan.

Keywords - Close-out, Execution, Human Resource Information System, Initiation Phase, Project Management Framework, Planning Phase

I. INTRODUCTION

The developments in information technologies create impact in the educational settings. Information systems are now used to improve functionality of administrative services. Different colleges and universities are now utilizing the advent of information system in terms of data collection and information retrieval. (Lane, 2006).

Bulacan State University (BulSU) envision itself to be recognized leader for excellence in instruction, research and extension services, a key player in the education and formation of professionally competent, service-oriented, and productive citizens, and a prime mover of the nation's sustainable socioeconomic growth and development. Being true to its mission of providing higher professional, technical, and special instruction for special purposes, and promote research and extension services, advance studies and progressive leadership in agriculture, commerce, education, fishery, forestry, engineering, arts and sciences, law, medicine, public administration, industrial technology and other fields as may be relevant (Sec. 2, R.A. 7665). Hiring of faculty and employees is the duty of the Administration based on the felt need, existing laws and other applicable government policies. Application for employment shall be addressed to the President of the University through the Human Resource Management Officer. Application is open to all, including non-teaching personnel who opt to shift to faculty status. The applicant shall file his application letter at the Human Resource Office along with his documents. Documents of applicants are sent to the dean concerned for pre-selection. Results of the psychological tests, demonstration teaching, and interview shall be collated and ranked in the Human Resource Management Office. The applicant who gets hired shall be notify by the Human Resource Management Office and accomplish pertinent appointment papers and submit the required documents.

The Human Resource Office file system uses the traditional filing cabinet where faculty information are organized and kept. The university puts premium consideration on the growth and development of an individual. The promotion of the faculty shall be given utmost consideration and careful consideration. One way to attain this is through annual performance evaluation of faculty members. The criteria for evaluation covers the teaching performance which is based on the weighted evaluation by the Dean which is 25%, self-evaluation is 25%, peers which is 25% and the students 25%, compliance and observance of the University policies, rules and regulations, cooperation and participation in school activities and functions, affairs, cooperation and participation in committee works and human relation and ability to work harmoniously with peers, superiors and other members of the academe. The Human Resource Management Officer is responsible in giving utmost and careful consideration in terms of the promotion of each employees/faculty and updating and monitoring of each employees/faculty personal data sheet and

employees/faculty evaluation. It does not cover the process of hiring of different applicants for a vacant position and managing of recruitment about the candidate employee. The update of the faculty information takes several hours and stored in a paper filing cabinet. Evaluation Forms will be distributed to students to evaluate each instructor/professor. Manual encoding and computation will be used to determine faculty's over-all performance and rating. All official documents pertaining to a faculty member and their evaluation are stored in electronic spreadsheets.

Through the use of the Human Resource Information System the process of updating employees/faculty information such as Personal Data Sheet (PDS), updating of plantilla positions, request of service record and the process of employees/faculty evaluation will be manage efficiently. The employees/faculty information will be stored in a centralized server which provides better accessibility to faculty/employees profile retrieval. The Human Resource Information System allow storing and viewing employees/faculty records, and employees/faculty evaluation results for promotion.

II. DESCRIPTION OF HRIS

This section provides a listing of all the functions that must be performed or delivered by the system, and a description of each. Screen designs help to visualize the function being discussed. Usually, the functions are based on the menu and toolbar options and the report formats is included in this section.

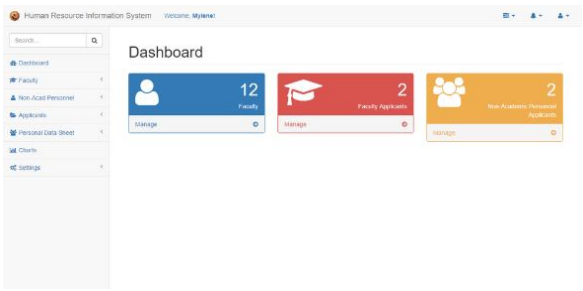

Figure 1 HR Dashboard

As shown in Figure 1 the HR Dashboard displays the quick access link in managing Faculty Page, Faculty Applicant Page and Non-Academic Personnel Applicant Page. It also contains the following menu list such as Faculty which has the sub menu list namely Faculty List, Promotion and Retirement, the Non-Academic menu list also contains the sub menu list for Non-Academic Personnel List, Promotion and Retirement, the Applicants contains also the sub menu list such as Faculty Applicants and Non-Academic Position, the Personal Data Sheet contains the View All sub menu list, Charts menu, and Settings menu list which displays the sub menu list for Accounts, Course, Department, College and Specialization sub menu list.

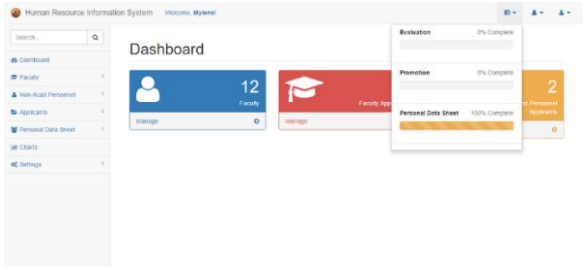

Figure 2 Update Faculty Personal Data Sheet

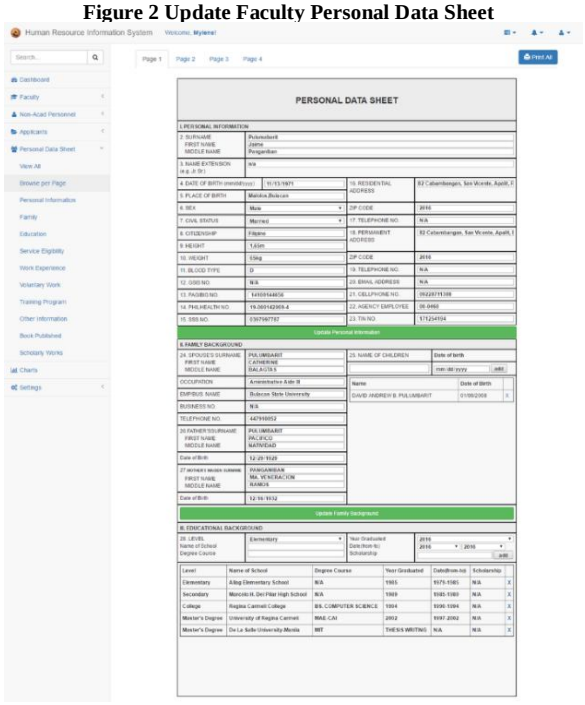

Figure 3 HR Progress Bar

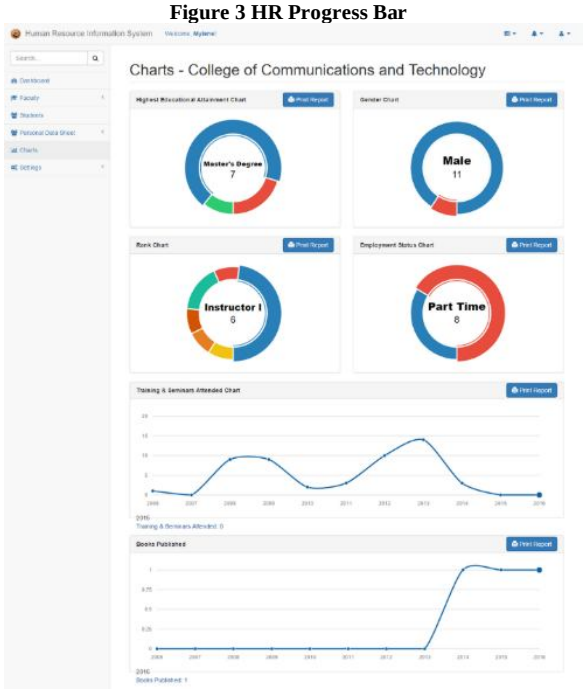

Figure 4 Charts for College of Information and Communications Technology

III. RESEARCH MODEL

The development of Human Resource Information System for employees/faculty of Bulacan State

University covers the following Project Management Phases such as Initiating, Planning, Executing, Monitoring and Controlling, and Close-out.

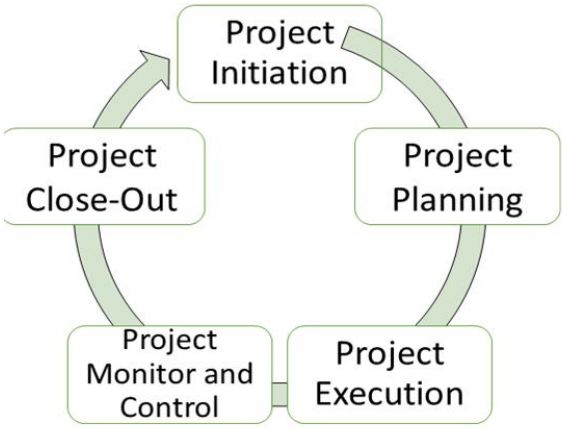

Figure 5Project Management Phases

Each phases integrates the knowledge areas of Project Management such as Project Integration Management, Project Scope Management, Project Time Management, Project Cost Management, Project Human Resource Management, Project Communications Management, and Project Risk Management.

The Project Integration Management involves developing the Business Case and the Project Charter, Project Scope Management covers managing the project scope and the deliverables of this phase includes developing a work breakdown structure and project management plan, Project Time Management involves managing budgeted time and the deliverables includes developing the project Gantt Chart, Project Cost Management involves managing the project cost and savings that represents a significant improvement in the operating costs for the Human Resource Management Office of Bulacan State University and a clear indicator of the benefit the project brought on the institution, Project Human Resource Management covers managing of the project team the deliverables includes staffing management plan and project team roles and responsibility, Project Communications Management involves managing communications plan and the deliverables in this area includes a communication flowchart, and communication escalation process, and lastly Project Risk Management which covers managing critical issues among the deliverables in this area includes risk identification, risk prioritization, mitigation and avoidance.

IV. RESEARCH RESULTS

The research results gives an assessment of what happened in this project and puts the project in context, and includes a discussion of activities performed by the Project Manager and the Project Team and the problems encountered. The mitigation techniques applied and the change management initiatives (where applicable).

4.1 Project Initiation

The Project Manager presents all the work needed to complete the project, including the sequence and the duration. Project Initiation Phase took five (5) days, duration was from 12/07/2015 to 12/11/2015. It encompasses the following sequence of activities such as: Evaluation and Recommendation, Development and Submission of Project Charter, Project Sponsor Reviews of Project Charter and Project Charter Signature/Approval.

Project Planning Phase took 29 days. Duration was from 12/14/2015 to 01/21/2016. It encompasses the following activities such as: Create Preliminary Scope Statement, Determine Project Team, Project Team Kick-off Meeting, Develop Project Plan, and Submit Project Plan for approval.

Project Execution Phase took 153 days. Duration was 01/22/2016 to 08/22/2016. It involves the following sequence of activities such as: Project Team Meeting, Verify & Validate User Requirement and System Design.

Project Monitoring and Controlling Phase took 14 days. Duration was from 09/06/2016 to 09/23/2016. Itcovers the following sequence of activities such as: Review Change Request, Project Status Meetings, Risk Management Assessment and Review Project Management Plan.

The project milestone relative to the project initiation was also being discussed by the Project Manager to the Software Group Lead, Mr. Dennis C. Caba. Project Initiation specified date December 07, 2015, Systems Design date of completion January 25, 2016, Complete Systems Development target date May 23, 2016, Complete Systems Simulation and Testing target date August 22, 2016. The researcher then review and validate the proposed schedule and perform assigned activities to each Software Support Team Member, Mr. Jasper C. Dela Cruz and Mr. Bryan James S. Dela Cruz.

Activities	Problem	Mitigation Change Management Plan	Status	Date
Initiation				**5 days**
Evaluation & Recommendations	-Determine the best way to improve the current processes of Bulacan State University, Human Resource Management Office	-Recommend HRIS	Completed	12/07/2015 – 12/07/2015
Develop Project Charter			Completed	12/08/2015 – 12/08/2015
Deliverable: Submit Project Charter			Completed	12/09/2015 12/09/2015
Project Sponsor Reviews Project Charter			Completed	12/10/2015 – 12/10/2015
Project Charter Signed/Approved	-Budget and Staff for Project Team	-BSU Contract of Service subject for approval by the Board of Regents (BOR).	Completed	12/11/2015 12/11/2015

Table 1: Project Planning Phase

Problem 1:

In the evaluation and recommendation activity, the Project Manager encountered a problem in terms of conducting various options and alternatives in

determining the best way to improve the current processes within Bulacan State University, Human Resource Management Office. The first alternative is to keep the traditional approach (electronic spreadsheet) in place. This alternative will result to unnecessary expenditure of funds for office supplies, continued occurrence of a high number of data errors, poor and untimely reporting and lack of automation. The second alternative is to outsource the implementation of a web-based platform. This option will yield a significantly higher cost, and vendors lack of familiarity with the Bulacan State University Human Resource Management Office internal requirements.

Mitigation 1:

As a mitigation response, the Project Manager recommended the Human Resource Information System to be developed in-house since the system provides the best opportunity to realized benefits for allowing the greatest improvement in efficiency and cost reduction.

Problem 2:

As project requirement and schedule were clearly defined, the Project Manager discussed the Budget allocation for the Software Support. The Project Charter was then approved by HR Officer. The requirement for the disbursement of national fund thru Bulacan State University is subjected to Commission on Audit, Department of Budget Management and Civil Service Rules and Regulations which states that an individual who will received compensation from a Government Funded institution must be an employee of the said government institution.

Mitigation 2:

The Project Manager recommended possible solution to hire Project Team as BSU Contract of Service subject for approval by the Board of Regents (BOR) to disburse Government Funds as compensation for System Programmer, Database Administrator and Quality Assurance position.

4.2 Project Planning

After the WBS has been agreed, the project plan was used to assess the progress of the project throughout the Project Life Cycle. In this phase the Project Manager created the Preliminary Scope Statement dated 12/14/2016 to 12/23/2016. The scope of Human Resource Information Systems project includes the Planning, Design, Development, Testing, and Transition.

Activities	Problem	Mitigation	Change Management Plan	Status	Date
Planning					**29 days**
Create Preliminary Scope Statement				Completed	12/14/2015 – 12/23/2015
Determine Project Team	-Communication	-Project Team Directory, Communication Flowchart		Completed	12/25/2015 – 12/28/2015
Project Team Kick-off Meeting				Completed	12/29/2015 – 12/29/2015
Develop Project Plan				Completed	12/30/2015 – 01/14/2016
Submit Project Plan				Completed	01/15/2016 – 01/19/2016
Milestone: Project Plan Approval				Completed	01/20/2016 – 01/21/2016

Table 2: Project Planning Phase

Problem 1:

The Project Manager is responsible for ensuring that approval is requested and obtained prior to the distribution of any confidential information regarding this project. Difficulty in communicating and distributing the established milestones dated 09/09/2016 System Design and 08/22/2016 Testing Phase was experienced.The Project Team were not able to follow the system design requirements as planned and also confidential informationsuch as evaluation results need to be addressed only to the authorized person directly involved in the project.

Mitigation 1:

As a result, the Project Manager created a Project Team Directory that serves as a guide for communications throughout the project life cycle. A project team directory includes contact information for all stakeholders directly involved in the project. The directory identifies and defines the roles of project team involved in the project. It also includes a communications matrix which maps the communication requirements for Human Resource Information System.

Problem 2:

Due to tight office schedule, the Human Resource Manager disregarded project communications and meetings. The team developed inaccurate expectations (believed that the project will achieve something not in the requirements or plan).

Mitigation 2:

The Project Manager mitigated this risk by asking for specific commitments. Among the specific dates for the monthly project status meetings agreed upon are the following: May 23, 2016, June 21, 2016, July 20, 2016 and August 26, 2016 with the agenda of reporting on the status of the project to project sponsor.

Activities	Problem	Mitigation	Change Management Plan	Status	Date
Execution					
Project Team Meeting				Completed	01/22/2016
Verify and Validate User Requirements				Completed	02/08/2016
System Design	-rejected	-re-baseline and regular checking		Completed	02/09/2016-08/22/2016
Testing	-availability of testing participants	-UAT schedule		Completed	08/22/2016

Table 3: Project Execution Phase

On January 22, 2016, the Project Manager held a Project Team Meeting. The agenda of the meeting is to review the established deadlines for project activities prior to system design activity period from 01/25/2016 to 02/08/2016. On 25/01/2016 user requirements was reviewed by the Project Manager. The following user accounts was established such as HR, Dean, Faculty and Students. The Project Team then converted each user requirements into system design from 09/02/2016 to 22/08/2016 as a result a prototype was developed subject for Testing. The actual Screen Design for subject for evaluation was conducted dated 08/22/2016, user's feedback was necessary to measure the acceptability of the system.

During the evaluation of the system, the researcher distributed questionnaires to the respondents from the Human Resource Employees; College Secretary; College Dean, Students and Faculty. Using the Usability Instrument Form each of the criteria presented the response Passed or Failed was recorded which indicates if functions are appropriate to specifications. Acceptance Testing Action in item 1. Are all fonts, colors, shading and toolbars consistent with standards and project guidelines? Got a highly Passed remark. The respondents agreed that the system presented a user-friendly interface and the interfaces suit beginners and more advanced users.

However, Acceptance Testing Action in item 30. Access to certain application are not allowed unless user is set up as authorized user (as defined in the registered user detail account) was given a feedback as evaluated by the College Dean and a revisions of the system features for Dean Account such as Evaluate Faculty and View Promotion Score was recorded. As per agreed by the pool of College Dean's data of previous faculty evaluation, and history of faculty evaluation conducted by the Human Resource Management Office as basis for faculty promotion must be included in the Dean's Account.

As a whole, the system obtained a Passed rating which indicates that the system was recommended for used in Bulacan State University, Human Resource Management Office.

Problem 1:

The Project Manager reviewed the completion of a project phase of a major milestone such as Completed System Design. The Project manager encountered problem in terms of expectation and requirements. There is always a risk that system design was rejected and require significant rework.

Mitigation 1:

The Project Manager communicated to the project team the impact and changes to these milestones or dates. The Project Manager then re-baseline project schedule in order to get back on track and improving project requirements by conducting regular prototypes checking.

Problem 2:

The Project Manager experienced delay in the Testing Phase due to migrating of filesfrom traditional approach (excel, filling cabinet) to the prototype.

Mitigation 2:

The Project Manager made adjustments to the project schedule. The project team identified and selected additional testing participants available for encoding, review of scenarios/scripts for accuracy, and completeness of the prototype.

4.3 Monitor and Control

The Project Manager ensures that only approved changes are communicated to the Project Team. Last September 9, 2016, the Project Manager and Project Team consider the current status of the project schedule and how the scope change affect the schedule and its resources as the project moves forward.

Activities	Problem	Mitigation	Change Management Plan	Status	Date
Monitor and Control					**14 days**
Review Change Request	-changes to project requirement		-CCB Approval	Completed	09/09/2016 - 09/15/2016
Project Status Meetings				Completed	09/16/2016 – 09/16/2016
Risk Management Assessment				Completed	09/19/2016 – 09/23/2016
Review Project Management Plan				Completed	09/23/2016

Table 4: Project Planning

Project Status meeting was held on 09/16/2016 to continue the monitoring and provide the project team insights into the health of the project and identify any areas requiring additional attention. On 09/19/2016 a Risk Management Assessment was conducted by the Project Team and have managed the risks by identifying and ranking various risks as discussed in the Project Management Framework, Project Planning Phase under Risk Management Approach. The highest impact risks were identified to ensure that the project manager take the necessary steps to implement the mitigation response at the appropriate time during the schedule. On 09/23/2016 the Project manager reviewed the project plan and provided status updates on the identified risks in project team meetings.

Problem 1:

As system design activity was approaching the deadline, a request for change was added to the project plan. This activity has the highest impact probability to trigger the identified risk of developing misinterpreted requirements resulting to rejected prototypes.

Mitigation 1:

Changes to project requirements are carefully considered by the Project Manager due to the impact of the change especially on schedule and scope. The Project Manager provides the Project Status Meetings to see when the risks identified need to be monitored more closely and when to expect the trigger condition for each risk.

The Project Manager considered the request for a change submitted by member of the Project Team for the Human Resource Information System Project. The request number CR0001 includes integrating the system to MIS to gain access to the list of officially enrolled students to be utilized in the Faculty Account in terms of assigning students officially enrolled to a particular subject. The Change Control Board (CCB) reviewed the submitted change requests, based on the impact of the change request in the project scope, the request is determined to exceed boundary conditions. The CCB convened and a vote of three (3) out of five (5) was recorded. The request was disapproved. The Project Manager opted to import the student CSV file.

CONCLUSIONS

The general objective of the study was to managed all the project activities for the development of Human Resource Information System (HRIS) for the employees/faculty of Bulacan State University aligned with Project Management Framework and integrated the Knowledge Areas.

The developed system is intended to improve the current Human Resource Management Office transactions. The development of the system used a free and open source cross-platform web server solution stack package XAMPP consisting mainly with a server-side scripting language PHP and open source database management software MySQL. Through the use of the developed system, easier retrieval of records from the database is possible. The beneficiaries of the system include the students, employees/faculty, College Dean, Human Resource Employees and Human Resource Manager, the Researcher and Future Researchers.

In order to achieved success on the Human Resource Information Systems project, the following objectives was met within the designated time. A complete list of systems features which meets budget allocation within 34 days and achieved complete testing within 153 days. Based on the cost benefit analysis approved by HR Officer, the required funding was allocated by the Project Human Resource Management, The project manager was responsible for communicating on the progress and performance of each project resources. The project team members was consists of Programmer who was responsible for coding and programming for the project. All coding and programming tasks was reviewed prior to implementation. The Programmer was managed by the Project Manager. The Quality Specialist was responsible for assisting the Project Manager in creating quality control and assurance standards. The Quality Specialist was managed by the Project Manager who provided feedback to the project manager for performance evaluations and the Database Administrator responsible for planning, design, and development of new database applications, or major changes to existing applications; and management of an organization's data and metadata. The Project Manager has overall responsibility for the execution of the project. The Project Manager managed day to day resources, provided project guidance and monitors and reports on the projects metrics as defined in the Project Management Plan.

The Human Resource Management Office can greatly benefit by using the developed Human Resource Information System that is specifically configured for the office transactions of Bulacan State University, Human Resource Management Office. However, the release of the final deliverable of the project handed over to the end-user was not achieved. The prototype of the project was in the process of testing and evaluation. As a result, migrating of files was currently being done and the project is subject for revision and the formal close-out.

ACKNOWLEDGEMENT

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