

# Advancing the Efficacy of the College Office Management System of the Bulacan State University through the Implementation of a Network-Based Application

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**Abstract**— The major concern of the research study is the development of a network-based Office Management System for the different colleges of the Bulacan State University that will automate all the transactions done inside the dean's office of each colleges. The beneficiaries of the system includes the deans, college secretaries, student assistants, computer technicians and faculty members of the different colleges. In order to develop a quality system, Iterative Waterfall Model was used. The system was developed using VB.Net and SQL Server as the development tools in developing the system. The Office Management System has the following important features: portability, low maintenance, user-friendliness, scalability, security. The Office Management System was evaluated based on the five acceptability issues with their corresponding computed mean performance which includes reliability, efficiency, accuracy, user friendliness and security of the system. The overall weighted mean is 4.71 with verbal interpretation of "Excellent" shows that the developed system is highly acceptable for implementation.

**Keywords**—Office management, network-based system, office automation, iterative waterfall model, development model, prototype, input-process-output

## INTRODUCTION

It is very evident that the role of Information Technology has a huge impact in every facets of the different industry, as well in the educational institution. Before the birth of pertinent technology, business transactions and operations were done using manual operations such as ledgers and organize files through filling cabinets. This boils down that every task becomes more complicated and the duration of time to complete a task takes longer [1].

Conversely, as computers becomes popular in business institutions, the dispensation of work got more alleviated [2]. These technologies are used in almost all sectors such as financial management and analysis, inventory and transportation control, database management, software development, security control and many other vital fields. The end result of modern computing is increased productivity and quality. Thus modern computing generates in proliferation of quality and productivity.

Through the application and integration of technology performing everyday routine in a usual business environment becomes less burdensome [3]. Management system is describe as an interaction between humans and machines that, together set common objectives, strategies and tactics which is essential to run the totality of an organization [4].

Administering and consolidating the supporting day-to-day activities of the front office commonly describe the definition of office management. This activities is often performed by an office manager [5]. The office manager possible task includes supervision of office workers, responding with customer service, dealing with accounting task, examining sales, hiring process, approval and decision making.

## Background of the Study

Bulacan State University (BulSU) is a state-funded institution of higher learning established in 1904 and converted into a university in 1993 by virtue of Republic Act 7665 [6]. The University in mandated to provide higher professional/technical and special instruction for special purpose and to promote research and extension services, advanced studies and extension services. Through the progressive leadership of the university, it is continuously growing in terms of number of colleges and faculty members skilled in the diversified fields of education. With this increasing number of members its community, office management in each colleges becomes burdensome particularly in the part of the office of the dean where most of the college transactions transpire.

The major clients of the dean's office are the faculty members and students. Faculty mostly creates requests such as requests for barrowing facilities like projectors, rooms, requests for peripherals replacements and for other equipment of the college. In addition, there are some colleges whose faculty members need to submit monthly technical reports on computer rooms and other reportorial requirements of the college. For every request the faculty needs to fill out forms that are filed by the secretary. Problems occur with the file handling of requests and forms and with the scheduling of requests for the equipment and facilities. Figure 1 below shows the current office management process in a particular college.

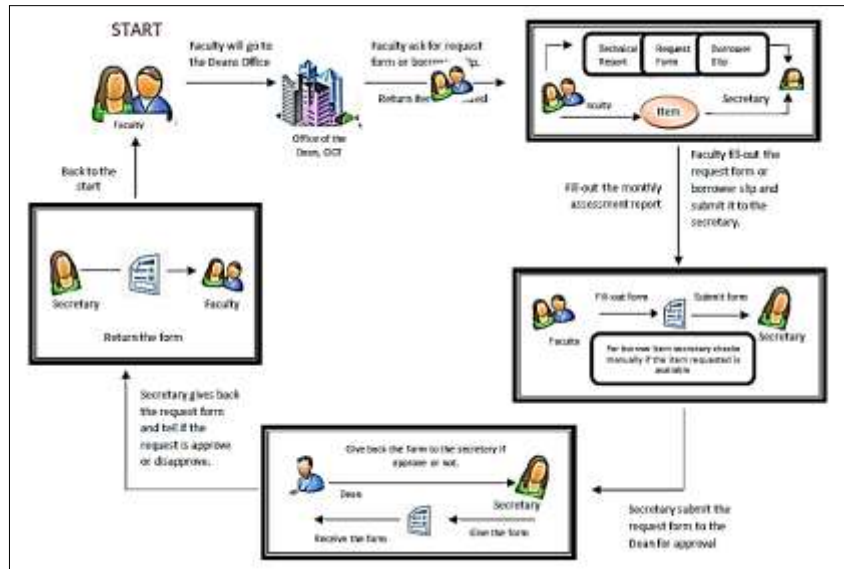


Figure 1. The current office management process

Through the Office Management System, the university will be able to handle the problems mentioned above. The college secretary will be able to keep all records efficiently with the use of the developed system, that is, with less use of papers and log books.

## Research Objectives

The study aims to develop an office management system through network-based application in the different colleges of the Bulacan State University

Specifically, the study sought to

- Design an office management system for each colleges
- Create significant features as designed
- Test and evaluate the acceptability of the office management

## Scope and Delimitations

The system has three major user roles: (1) system administrator; (2) supervisor; and (3) user. In the developed Office Management System, the administrator has the entire access including adding and suspending of users of the system. The Dean will act as the system administrator. Approvals of request and view reports can be done by the administrator. The supervisor's account have the access of approving some requests such as request for facility and encoding of faculty profiles and other minor functions. The college secretary usually acts as the supervisor of the system. The user creates requests, monthly assessment reports and attendance reports. Basically the faculty assumes this role. The system is a LAN-based. Centralized System is used upon the deployment of the system. There is a centralized server where the database resides.

The system does not cover the computation of salary and generation of daily time record (DTR). Any process out of the scope would be the limitation of this study. The system was evaluated by selected deans, faculty members and college secretary of the university

## METHODOLOGY

The study is an applied research wherein a prototype of the system was developed, tested and evaluated using the Iterative Waterfall Model [7, 8, 9]. The development was based on the assumption that the member colleges are equipped with the necessary hardware for network-based application.

### Project Design and Development

In this study, the researcher used diagram that recapitulated the steps on developing the system as presented in Figure 1 as a conceptual model. A system can be modelled using the basic IPO model. The IPO model describes how a process can transform and input to give a desired output [10].

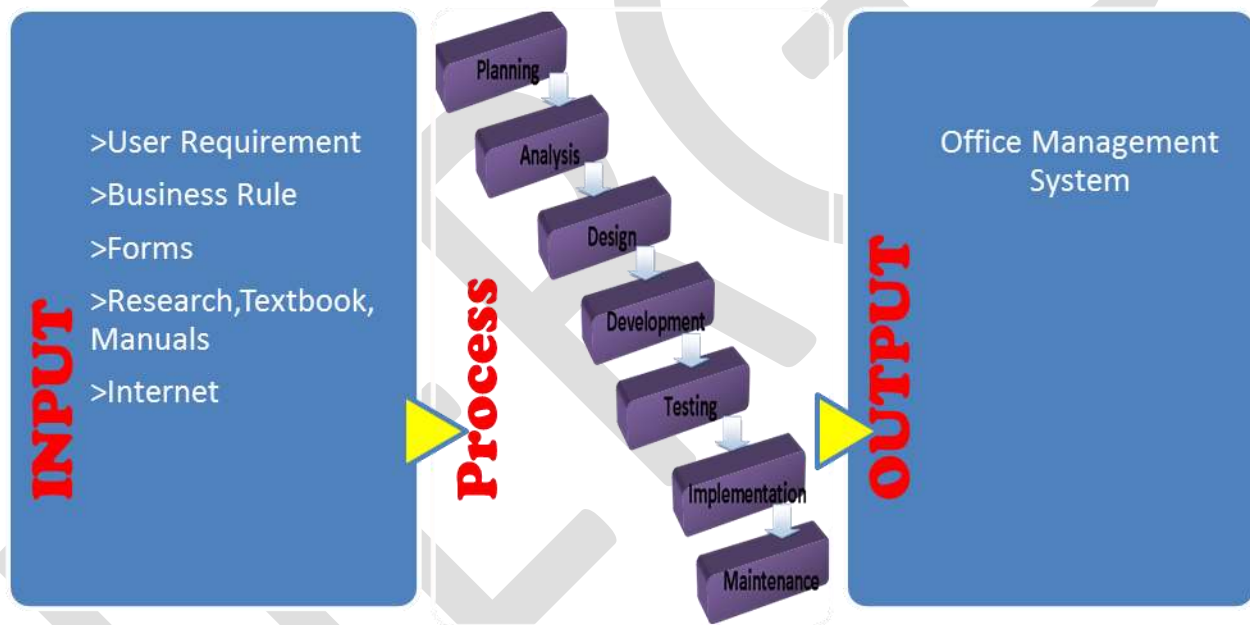


Figure 2. Conceptual model of the college office management system

The first part of the diagram is the input which refers to all raw materials required in the development and producing output. Basically the most common input includes the user requirement, research done by the researchers, forms for the data required to validate and the business rules that will define the system process.

The second part is the processing side which involves different stages. The first stage includes planning and analysis which discusses the analysis of the input and converting into technical aspect resulting of programming and development. During this activity the researcher discovers ambiguities and inconsistencies in the transaction management particularly in the different offices of each colleges. The result of the analysis is a system model annotated with attributes, operations, and associations. The design phase of the study will follow after the analysis, and this includes precisely describing object and subsystem interfaces. Interface of the system is properly layout as what has been planned during the analysis stage. Development stage includes the programming side such as the development of the front-end application and back-end application of the OMS [11, 12]. For better quality, the output testing is being applied under the processing. In this stage, the differences between the system and its model are found by executing the system with the sample input data [13]. During the implementation stage the developed OMS becomes operational. This includes user training and

software installation. The maintenance part will accommodate all necessary enhancement to the system as well as correction of any error encountered.

Upon completing all the stages in the process, the final output will be fully functional office management system for each colleges.

## Testing and Evaluation Procedures

After the system was created, it was tested for functionality and acceptability. It was installed in selected colleges, where different office transactions were made for a span of one semester. The system was tested for its reliability, efficiency, accuracy, user friendliness and security by technical people while selected deans, faculty members and college secretary evaluated the acceptability of the system. The researcher devised an evaluation instrument based on the Software Quality Model following a five-point Likert scale [14].

## Results and Discussions

The office management system is created with the following interfaces. Figure 3 shows the System Log-in which provides gateway to access the system.



Figure 3. The System Login

It requires username and password to access the system. A specific validation is added to make the system secured as follows:

- (a) The user only has given three chances to enter the user credentials properly. Once the user reached the limit the account will be locked.
- (b) The user can only login in one terminal only. The system can checked if the user is currently online to the other terminal.
- (c) The application identifies the role of the user to the system.

Once the user has log-in the system, it will display the Main Menu where you can navigate all the functionality of the system as shown on Figure 4. The College Office Management System Menu.



Figure 4. The Office Management System Main Menu

Each menu and toolbar provides you a quick access in every modules in the system. The user can click the menu or tools in order to navigate within the system.

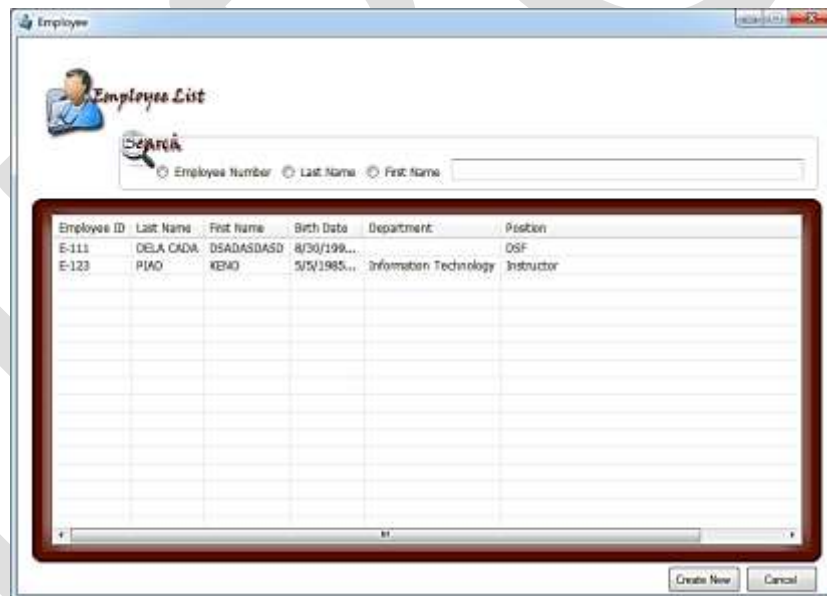


Figure 5. The Employee List

One of the major data needs to add is the list of employee or the faculty member. These faculty is also given an access to the system. In Figure 5, the Employee List displays the list of employee added on the application. It also allow the user to search the record by employee number, last name or first name. To create new employee record, just click the Create New button. Cancel button is used to close the employee list form.

The screenshot shows a software window titled "Create Employee Records". Inside, there is a sub-window titled "Add Employee" with a small icon of a person. The form contains the following fields: "Employee Number:" (text box), "Last Name:" (text box), "First Name:" (text box), "Middle Name:" (text box), "Address:" (text box), "Birth Date:" (calendar icon showing Tuesday, August 30, 2) and "Age:" (text box), "Gender:" (radio buttons for Male and Female), "Email Address:" (text box), "Department:" (dropdown menu), "Position:" (text box), and "Status:" (dropdown menu). There are "Save" and "Cancel" buttons at the bottom right, and a "Browse" button next to the Address field.

Figure 6. Create New Employee Record

Figure 6 is the Create New Employee Record windows that allows the user to create new employee profile. All the fields presented on the forms are required to be filled up. It will be needed in creation of account for a faculty ito access the system.

One of the main features of the system is to create their monthly status report for computer laboratories. Figure 7 illustrates the list of Monthly Status Report for a particular room custodian and technician.

The screenshot shows a software window titled "Computer Status Report". Inside, there is a sub-window titled "Monthly Status Report" with a small icon of a computer monitor. The form contains the following fields: "Room No.:" (text box), "Custodian:" (text box), "Technician:" (text box), and "No. Of Units.:" (text box). There are "Create New" and "Cancel" buttons at the bottom right.

Figure 7. Computer Status Report

A technician can create status report by clicking Create New button. Figure 7 displays the creation of new status report. It shows the list of computer and selection of the status of computer. The user just simply selects the status of computer whether OK, Repaired, Not OK. The User also provides recommendation for those computers with status of not OK.

**Create Make-up Class**

**Make-up Class Details**

Original Schedule Date: Saturday, September 03, 2011 Time:

Make-up Date: Saturday, September 03, 2011 Time:

Subject:

Room No.:

Reasons here ...

Figure 8. Requests for Make-up Class

Once the make-up class filed it will display on the list of make-up class with the status of pending approval. All make-up class should be approved by the Dean of the college. Figure 9, Make-up Class Request List usually displays the list of makeup class prior for approval of the dean.

**Make-up Class List**

Request ID	Requester Name	Subject	Make-up Date	Make-up Time	Room No.	Status
MC-0001	Keno Pad	Computer Programming 1	08/25/2011	9:50-11:50 ...	IT-1	Pending for Approval
MC-0002	Jane Suarez	Computer Programming 2	08/26/2011	9:50-1:00 PM	IT-5	Pending for Approval

Figure 9. Make-up Class Request List

The Office management System also provides requisition of resources by the college. Figure 10, illustrates the creation of request for any specific resources of the college prior for the approval of the dean.



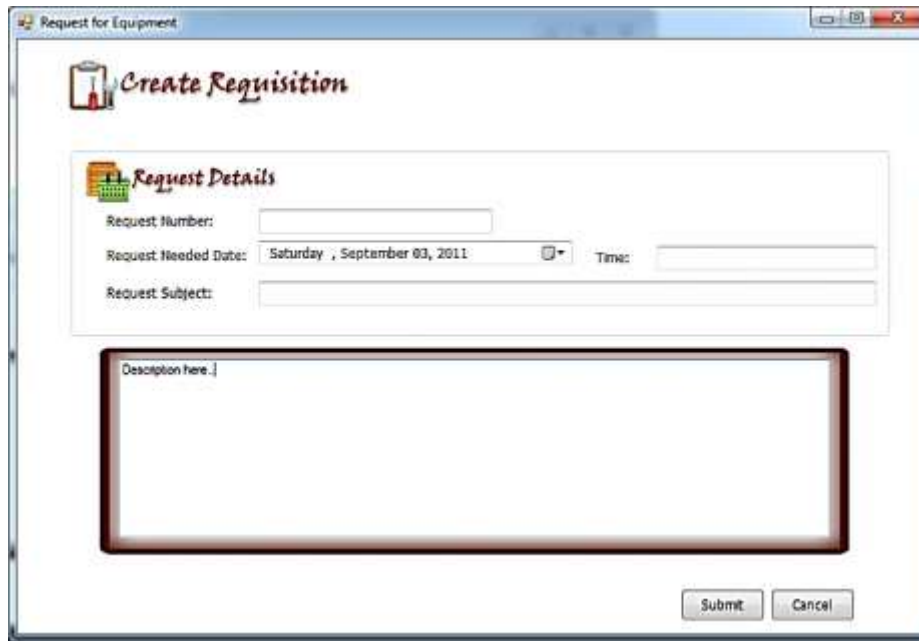


Figure 10. Create Requisition

Instructor needs to fill out and click submit button to save the request. Once the request submitted it will display on the request list and notify the dean that there is a new requisition.

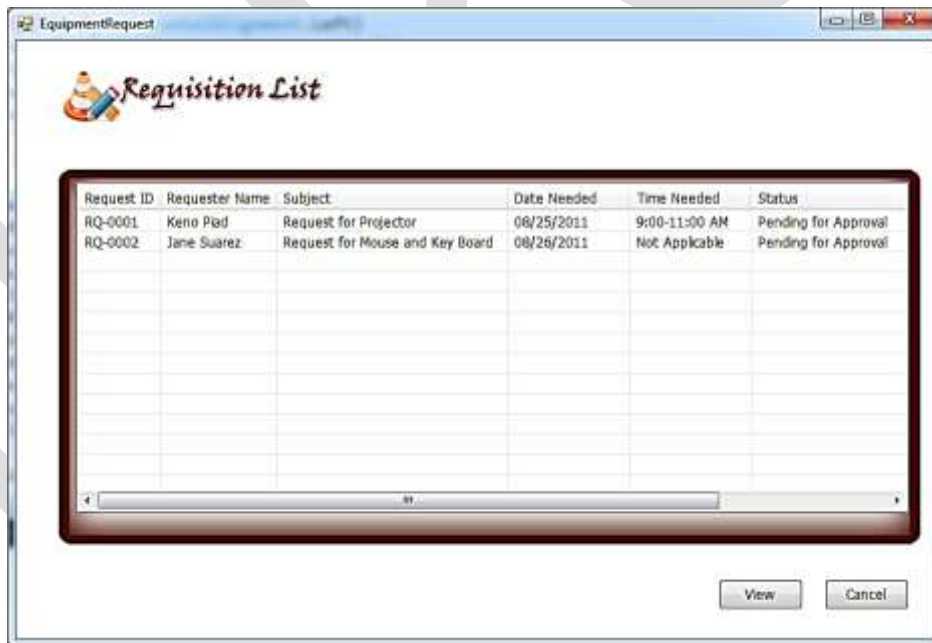


Figure 11. List of Request

Figure 11 displays the list of request with their details and status. User can view the entire details of the request upon clicking the View button.



Computer Number	Status	Recommendation
PC-01	OK	
PC-02	Repaired	Fixed Power Supply
PC-03	Not OK	Mouse and Keyboard
PC-04	Repaired	Reformat
PC-05	OK	
PC-06	Not OK	OS Corrupted
PC-07	Not OK	OS Corrupted
PC-08	OK	
PC-09	OK	
PC-10	OK	

Figure 12. Create New Technical Reports

Each computer in the laboratory is saved on the system. Figure 12. Computer Details Inventory, display the list and detail of every computer assigned on a particular room. It allows the user to add new computer and save the record through clicking Save button.

The system testing was done for a duration of one semester (5 months) to ensure a very satisfactory outcome on its functionality and acceptability. In the selected colleges where initial evaluation was done, they rated the system “Excellent.” The system had an overall rate of “Excellent” on its functionality and “Very Acceptable” on its acceptability.

## ACKNOWLEDGMENT

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## CONCLUSION

Based on the results of the tests and evaluation, it can be concluded that:

1. The Bulacan State University community can greatly benefit by using the developed Office Management System that is specifically configured by network specification for the monitoring of all office transactions of the different colleges.
2. The Office Management System was designed and created with the following features: portability, low maintenance, user-friendliness, scalability, security.
3. The system was tested to be “Excellent” and “Very Acceptable.”

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