**Chapter 1**

**THE PROBLEM AND ITS SCOPE**

**INTRODUCTION**

**Rationale**

Technology is the study, development and application of devices machines and techniques for manufacturing and productive processes. The presence of technology keeps evolving to provide a sustainable technology towards quality education through the delivery and effective learning.

People nowadays spend more time using those technologies: computers, mobile phones, MP3 players and similar devices that are essential for anyone. And these devices are constantly connected among each other, often using the internet as a common medium of communication, eventually creating a large, highly mobile and ubiquitous network.

Technologies show people a more efficient way to do things and these produce a meaningful result. One of it is through messaging; a digital communication between groups of students and between students and teachers has become popular during these decade through various channels: Email, SMS, Facebook groups and Twitter.

Looking at this, specifically from a student’s point of view, without access to any messaging platform, they could not receive and send emails and cannot get latest information directly concerning to their quizzes, exam dates, assignments and organization meetings.

Mobile messaging is even more effective as a way of communication between teachers and students, since a student usually fetch new information when he/she is inside or outside the campus. The type of access to any messaging application in a mobile phone is a way of communicating with students and teachers and can be used as their learning platform too.

Hence, the researchers decided to develop an application that might be useful for the students and instructors of Bohol Island State University (BISU). The main idea we had in mind concerned the possibility for a student to fetch information on his mobile .This idea could be practical for teachers to directly communicate with students, using with a chat system and for students, to easily communicate with their classmates or organization for latest information or events happening in the campus. This app is a free mobile messaging app used for instant messaging, sharing documents, and photos. Eventually, our application focuses these features, summarized below:

* Communication between students to teachers.
* Communication between students to students
* Communication among each organization and section on every course.

The application aims to help the students as well as the teachers in making their communication easier and faster. For a teacher it could be possible to cancel a class shortly before its beginning, or just sending via the platform.

**Literature Background**

Communication is a mean for people to exchange information. The emergence of computer network and telecommunication technologies bears the same objective that is to allow people to communicate. Chatting is a method of using technology to bring people and ideas together despite the geographical barriers. The study is anchored to the following theories and cited applications similar to the proposed project as basis of this study.

The creation of BISU Information Hub App is supported by the Theory of Instant Messaging by Scornavacca, Huff, & Marshall. It encapsulates a huge range of topics related to study, as it deals with the communication and participation between students and instructors.

As applied to the study, Instant Messaging serves as a communication tool in order to collaborate with their students. It may reveal potential for collaborative learning, sharing resources, learning any time, any place, communication between students and teachers, and enhancing students engagement.

The principal of automation is concerned on the findings of efficient computational way to perform human task. Task can be physical, such as doing arithmetic, playing chess, and planning schedules.

**Article XIV, Section 10 of the Philippine Constitution.** States that Science and Technology are essentials for national development and progress. The state shall give priority to research and development, invention, and their utilization; and to science and technology education, training and services (Muñoz, 2002).

**Article XIV, Section 12 of the Philippine Constitution.** "The state shall regulate the transfer and promote the adoption of technology from all sources for the national benefit. It shall encourage the widest participation of the private groups, local government and community based organizations in the generation and utilization of Science and Technology (Bernas, 2009)".

**Theory of Instant Messaging.**(Scornavacca, Huff, & Marshall, 2009)States that students tend to ask more questions and participate via IM system.

**Principle of Automation.**(Grover, 2010) States that human task is done with an accurate machine and in lesser time.

**Structuration Theory by De Sanctis.**It examines how people interact and understand with the new technology.(**Basso, 2008)**

**BISU Information Hub App**

**Characteristics and Features:**

* **Ensures Security**
* **Consumes lesser time and effort**
* **User-Friendly**
* **Easy and fast way to communicate**

Proposed Implementation Plan

**Figure 1. Conceptual and Theoretical Framework**

The Principle tries to emphasis that there is an efficient computational ways to perform human task behavioral acceptance test are used to maintain whether a developed system with human doing the task manually.

Usage of different platforms of Instant Messaging (IM) between faculty and class reveals the following: potential for learning enhancement (Smit, 2012); potential for learners to be active in their studies (Cifuentes& Lents, 2011); informal communication between students (Cifuentes& Lents,2011; Smit, 2012); in-person interaction between students and faculty related to course content and personal issues (Cifuentes& Lents,2011); sense of belonging and community (Doering, Lewis, Veletsianos, & Nichols-Besel, 2008; Sweeny, 2010); breakdown of teacher-student social barriers (Doering et al., 2008); and students tend to take assignments more seriously when they are public in order to impress their peers (Sweeny, 2010).

On the other hand, it is stated in article XIV, Section 10 of the 1897 Philippine Constitution that:

"Science and technology are essential for national development and progress. The State shall give priority to research and technology education, training and services. It shall support indigenous, appropriate, and self-reliant scientific and technological capabilities, and their application to the country’s production systems and national life. (Bernas, 2009).”

Moreover, Article XIV, Section12 of the Philippine Constitution states that:

"The States shall regulate the transfer and promote adoption of technology from all sources for the national benefit. It shall encourage the widest participation of the private groups, local government and community based organization in the generation and utilization of Science and Technology. "

According to the article the State shall give priority to its people who research, develop, and create new systems that can help in the progress of our country. This law encourage people with innovative ideas to foster our country. It is essential for students to be equipped with a strong foundation of technology so that our country will be a technologically oriented nation.

**THE PROBLEM**

**Statement of the Problem**

The study aimed to design and develop BISU Information Hub App that is useful for the Bohol Island State University – Balilihan Campus.

Specifically this study aimed to answer the following questions:

1. How is the current communication process of Bohol Island State University – Balilihan Campus being done between students to teachers and student to student?
2. What processes being used by the students in fetching latest information concerning to their quizzes, exam dates, assignments and organization meetings when they are not inside the campus?
3. What are the processes being used by the instructors in sending out reminders, sharing file document to their students and post new announcements?
4. How to solve the constraints in manual process in terms of the following:
5. System Rules
6. Diagram / Event List;
7. Process Specification;
8. Program Hierarchy;
9. Functional Requirements;
10. Database Design;
11. Technical Requirements;
12. Cost-Benefit Analysis; and
13. User Interface;

5. What proposed action plan should be designed to implement the BISU Information Hub App?

**Significance of Study**

BISU Information Hub App is beneficial to the following group of people.

**Administration**. The result of the study help the administration in delivering latest information, announcements and upcoming events to the teachers and students..

**Instructors.** Help the instructors send out reminders about an upcoming test, issue study guides, give announcements and homework assignments to students.

**Students.**Help the students can easily fetch latest information or events happening in the campus.

**Researchers**. Help the researchers to improve their knowledge and skills in developingnew Technology to the campus.

**RESEARCH METHODOLOGY**

**Research Design**

The researchers used developmental research design in the system development. It is a systematic study of designing and evaluating instructional program process to meet the criteria of internal consistency and effectiveness. It aims to develop an application that will help in management

**Research Environment and Participants**

The locale of this study was the Bohol Island State University- Balilihan Campus located at Magsija, Balilihan, Bohol. The locale was chosen because, accessible by the researchers. The respondents of this study were the instructors, students and administrator.

**Data Gathering Instruments**

Interview and observation were conducted by the researcher to gather the needed data on the software requirements and specifications in terms functionality.

**Interview and Discussion**

It is an excellent and useful tool for gathering information from respondents regarding with the processes and information needed for the study.

**Observation and Documentation Review**

Observation was performed to know the actual activities as how participants actually performed. Different documentation was reviewed to come up with the process needed in the automation including possible input design, process design, and output design and for possible features to be added.

**Research Procedure**

This study used Waterfall SDLC Model which composed of six (6) phases namely:

**Phase I. Requirement Gathering and Analysis.** All the possible requirements of the BISU Information Hub App that is to be developed are captured in this phase and documented in a requirement specification document. Some of these important requirements are: every enrolled student can only have one account; students cannot create their own group. The data must be process wirelessly.

**Phase II. System Design.** The requirement specifications from first phase are studied in this phase and the system design is prepared. Student’s School Id was used as their unique identification. The School ID is use to continue in creating an account.

**Phase III. System Implementation.** The system was first developed in small programs called units, which are integrated in the next phase. The first unit is the friends unit which you can search a user and send, accept or decline friend request. After integrating the friends unit, the messages unit was programmed to start conversations to all connected user. The next unit is the group unit which a user can search a group and send request to a group. Another unit is the announcements which an instructors can attach files.

**Phase IV. System Integration and Testing.** All the units developed in the implementation phase are integrated. The friends unit was first integrated; in this unit a user can send friend request and that request will appear to the friend request tab and can be accepted or declined. In the messages unit, after a user accepted a friend request they are now connected each other and can now start to send and receive messages as well as images. The next is the groups unit which only the instructors can only create a group/s. After the instructors created a group, a user can now search and send request and will appear in the request tab inside the group. In this unit it was tested that only group owner can accept or decline group request. If the group owner accepted your request then that group will appear on your groups tab. And now you can now start to send and receive messages on that particular group. It was also tested that only the group owner can create an announcement and attach files and appear in the group announcement tab. The files that has been attach can be downloaded. Post integration of the entire system was tested by the panelists for any faults and failure.

**Phase V. System Deployment.** After the thorough paneling testing, the system is ready for deployment. First, the database must be host by a server for the exchange of the communication and after that the researchers build an apk and upload it to the play store. Once the functional and non-functional testing is done; the product is ready for deployment.

**Phase VI. System Maintenance.** During the integration and testing the panelist

recommend the following:

* Username will be used in signing in
* Username that was already taken will not be used again
* Batch upload with multiple sheets
* Owner of the group can add group members
* User can comment to the announcements

Maintenance is done to deliver these changes in the customer environment. The researchers worked out and solve those problems and ready for deployment.