Benefits of the Opex Pro Application in Online Project Monitoring and Evaluation at PT. XYZ

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Abstract. Along with the process of globalization, information technology has become an inseparable part of the world of construction services. However, the use of information technology in the field of construction management is not as popular as compared to construction planning especially in the process of project monitoring and evaluation. The contractor must have an integrated information system to be able to support the process of monitoring and evaluation that is true and right so that objectives can be achieved according to plan. PT. XYZ is a contractor that creates an integrated software-based information system called Opex Pro that is used to support project monitoring and evaluation. Opex Pro is used on smartphones and has been implemented for a number of years, but the benefits and positive effects have yet to be measured. This study aims to identify components and analyze the benefits of implementing the Opex Pro application as a means of project monitoring and evaluation. The scope of the problems in this study is limited to the application of the Opex Pro Application in the Building Division of PT. XYZ with a sample project manager. Literature review is focused on construction management, information technology in the world of construction, project monitoring and evaluation, and management of construction resources. The quantitative approach was chosen as the research method and analysis was carried out on all selected samples. It is expected that the application of the Opex Pro application can have a positive impact on the project monitoring and evaluation process at PT. XYZ continuously.

1. Introduction
1.1. Background
The basic function of construction management consists of managing aspects of the scope of work, time, cost, and quality of the project on an ongoing basis (Soeharto, 1999). Properly managing these aspects is the key to project success. But often building construction projects must be completed in a relatively short time while still having good quality and cost efficient. These conditions encourage construction service industry players to continue to innovate in applying a variety of technologies in the field of building construction in order to be able to achieve predetermined targets.

Along with the flow of globalization, information technology continues to develop and enter into various fields including the world of construction services where the use of software can help the process become more effective and efficient. With the help of information technology, large-scale projects with hundreds to thousands of activities can obtain optimal results (Hermawan, 2006). In the last ten years, the use of software in building planning has been very popular to use and the internet has made the building planning process faster, up to date, precise and actual.

On the other hand, the use of information technology in the field of construction management is not as familiar as compared to construction planning. Very few contractors have software in project management, especially in the process of monitoring and evaluating project implementation. In construction projects, there are monitoring and evaluation processes that are carried out regularly.
Therefore, the use of software as a tool can simplify, speed up and speed up the evaluation of construction work. Construction service companies must have an integrated software-based information system that is capable of assisting the process. Application of an integrated software-based information system in project monitoring and evaluation can help the work of project managers and the company's main management to continue to monitor and evaluate project performance on an ongoing basis.

1.2. Problem Formulation
PT. XYZ is a government-owned construction service company that was founded in 1980. PT. XYZ created an integrated software-based information system called Opex Pro to support project monitoring and evaluation efforts. Opex Pro is an Android smartphone-based application that was created as a tool for project managers in monitoring and evaluating projects. The application of this application has been carried out in recent years, but the level of benefits and positive impacts cannot yet be measured. Identification of the benefits and impacts of applying this application is needed for the project monitoring and evaluation effort at PT. XYZ. Based on some of the above, the formulation of the problem in this study is as follows:
1. What are the components and processes in construction project monitoring and evaluation?
2. How the Opex Pro application can help construction project monitoring and evaluation?
3. What benefits are perceived by Opex Pro users in the process of project construction monitoring and evaluation?

1.3. Scope
The scope of this study is limited to the application of the Opex Pro Application Building Division of PT. XYZ by using the existing project population in the division. The document review is based on relevant literature, company regulations PT. XYZ and other regulations that apply in Indonesia. Data obtained from the results of observations, surveys and direct observations in the field as well as the results of measurements, studies of tender documents, planning documents, and from other relevant agencies.

2. Literature Review
2.1. Project Management
Project management is literally built from two words, management and project. According to Haming and Nurnajamuddin (2011) management has two meanings, namely as a position and as a process. As a position, management means a person or group of people who are responsible for conducting studies, analyzing, formulating decisions, and taking initiative for appropriate or best actions within an organization. According to Haming and Nurnajamuddin (2011) "the project is basically the process of making a unique product, either in the form of a new product or running a new type of business that will be completed within a certain time". According to Haming and Nurnajamuddin (2011), project management as an activity of planning, organizing, leading, and controlling company resources to achieve short-term targets that have been determined by using a system and hierarchical approach, both vertical and horizontal.

Construction project management is a method to achieve an outcome in the form of buildings or infrastructure that is limited by time by using existing resources effectively. Basically, construction project management, according to Ervianto (2005), there are two understandings which in its implementation become a unity in achieving project objectives, namely:
1. Construction Technology;
2. Construction Management.
Construction management requires good and directed management because a project has limitations so that the final goal of a construction project can be achieved. The management required includes three things known as the triple constraint, namely cost (cost), quality (scope) and time (schedule). These three boundaries influence each other in the success of a project. B iaya (cost), quality (scope) and time (schedule) as the sides of the equilateral triangle intertwined. Changes on one side will affect the other.
side. Therefore, the management of these three things is needed. In addition to managing costs, quality and time, management is also needed in the form of resource management, environment, risk and information systems. The management activities are realized through the following activities:

1. Planning
2. Organizing
3. Actuating
4. Controlling

2.2. Project Organization
Organizations according to Ranupandojo and Husnan (1990) can be seen as a unit that changes various inputs into the outputs needed. The simplest understanding of organizational forms according to Ervianto (2005) is the unification of the activities of two or more individuals under one coordination, and the function of bringing them together into one goal. The more individuals involved in various activities, the more complex the form of organization. The process of organizing projects according to Suharto (1999) follows the following sequence:

1. Conduct Project Identification and Classification Work.
2. Classifying Jobs.
3. Preparing Parties That Will Handle the Job.
4. Knowing Authority and Responsibility and Doing Work.
5. Develop a Coordination Mechanism.

2.3. Project Control
According to Husen (2009) control can be defined as a systematic effort to determine standards in accordance with the goals and objectives of planning, designing information systems, comparing implementation with established standards, analyzing the possibility of deviations, then taking corrective actions needed for resources can be used effectively and efficiently in order to achieve goals and objectives. In addition to getting a satisfying product, control is also intended to ensure that programs and work rules that have been set can be achieved with the most minimal errors. Control activities are carried out in the form of activities as follows (Husen, 2009):

1. Supervision, which is coordinating supervision in accordance with the authority and responsibilities of the organization that has been determined, so that in its implementation can be carried out jointly by all personnel with supervisory control.
2. Inspection, which is checking the work results with the aim of guaranteeing quality and product specifications as planned.
3. Corrective action, which is to make changes and improvements to the plan that has been determined to adjust to the conditions of implementation.

2.4. Project Information System
The system is a collection of elements that are interrelated and work together to process the input (input) addressed to the device and process the input to produce the desired output. Information is data that is processed into a form that is more useful and more meaningful for those who receive it. Information system is a system within an organization that meets the needs of daily transaction processing, supports the organization and provides certain external parties with the required reports. Understanding the information system is a device that provides information in a way that is beneficial for the recipient (Nurlalela, 2013). Jogiyanto (2007) states that in general information systems three activities occur, namely:

1. Input is a collection of raw data within the organization and outside the organization to be processed in an information system.
2. Processing is the conversion/transfer, manipulation and analysis of raw inputs into a form that is more meaningful to humans.
3. Output is the distribution of information that has been processed to members of the organization where the output will be used.
According to Yasin (2012), a computer system is a network of interrelated procedures, gathered together to carry out an activity or complete a certain goal. According to Sibero (2011) information is a collection of data that has the intent and purpose and can provide accurate information needed in decision making. In terms of computers, information is the result of processing data from computers that are needed by users who have benefits for users. The results of the processing of collections of information that are interconnected between one and another are called Information Systems. Projects are temporary efforts made to create unique products or services. Temporary means that each project has a definite end. Unique means that a product or service is different in some special way compared to similar products or services. Construction projects as a form of service product must be completed within a limited period of time in accordance with the agreement (Aprisa and Monalisa, 2012). A project management information system (project management information system) refers to an automated computer or software that is used by project management as a means of implementing activities listed in the Project Management plan (Badiru, 2008).

2.5. Relevant Research

1) Journal “Persepsi Pengguna Terhadap Kemanfaatan dan Kemudahan Penggunaan Aplikasi Sistem Informasi Baru (Studi Kasus di Sekolah Tinggi Ilmu Ekonomi SBI Yogyakarta)” by Surawan Setyo Budi S.
2) Journal “Evaluasi Penggunaan Aplikasi Office Berbasis Open Source Pada SMKN Kota Palembang Dengan Pendekatan Technology Acceptance Model” by Surahmat dan Alfred Tenggono.
3) Journal “Persepsi Mahasiswa Dalam Penerapan E-Learning Sebagai Aplikasi Peningkatan Kualitas Pendidikan (Studi Kasus Pada Universitas Islam Indonesia)” by Syafiu Muzid dan Mishbahul Munir.
4) Journal “Partisipasi Pengguna dalam Pengembangan Sistem Informasi (Telaah Literatur)” by Priyo Hari Adi.
5) Journal “Pengaruh Partisipasi Pemakai dan Dukungan Atasan Terhadap Kinerja Sistem Informasi Akuntasi Pada Bank Umum Pemerintah” by Wildoms Sahusilawane.

3. Research Process

Assessment is carried out by analyzing and studying a number of research journals associated with the user's perception of the usefulness of software or software in an organization group. This research focuses on the process of literature review as a technique of gathering information in which previous related research is identified and analyzed. In addition, the preparation of literature is also related to the project management information system and the project evaluation monitoring process.

4. Discussion

The Opex Pro application is an Android smartphone -based application that is used for the process of monitoring and evaluation between project managers and the central manager at PT. XYZ. This application has several features such as features to update project information, project financial condition, progress of work, implementation information Quality, Health, Safety, Environment (QHSE), knowledge sharing, company procedures, sending photos, e-mail and chat. The following is an initial appearance of the Opex Pro Application This application has features that must be filled by the Project Manager of each project on a regular basis ie every week.
With the ease of reporting various developments in data and project information carried out by the project manager through the Opex Pro Application, the central manager of PT. XYZ can monitor the development of existing projects in the company environment in real-time, simultaneous, and accurate. If there are problems, they can be immediately resolved through supervision, inspection, and correction by the PT. XYZ on the performance of projects run by project managers.

From the results of the discussion of several related literatures compiled from similar studies, it can be extracted that to answer the problem regarding the benefits of implementing Opex Pro in PT. XYZ as a means of project monitoring and evaluation, it requires a series of analyzes of the user's perception of the software. User perceptions can generally be identified using the Technology Acceptance Model (TAM) approach. TAM is one model that can be used to analyze the factors that influence the receipt of an information system (Chuttur, 2009). There are three factors that influence the use of a system as proposed by Fred Davis (1986). The three factors below can be used as variables in research to determine how user acceptance of a system or information system that you want to build or is already running.

1) **Perceived Usefulness**
2) **Perceived Ease of Use**
3) **Intention to Use**

Various studies have used TAM and show that TAM is a valid model to test the receipt of a system or information system (Park, 2009). Thus, the TAM analysis model is recommended as a research variable if you want to test the acceptance of a system / information system. The TAM model is actually adopted from the TRA model, which is a theory of action that is grounded in the premise that a person's reaction and perception of something will determine the person's attitude and behavior. Reaction and perception of the technology information will affect its position in the acceptance of Technology (alharbi, 2014).
5. Conclusion

According to the literature discussion above, several things can be concluded as follows:

- The process in conducting project monitoring and evaluation through Opex Pro starts from data input and continue with data analysis and display.
- The project manager needs to input the data to the application in a periodical basis, then the application can process and present the data. The result of the data processes can be supervised by the central manager. By looking at the information from Opex Pro, the central manager can monitor and evaluate the project quickly and easily. A proper and a quick decision can be made to improve the project performance.
- The Opex Pro application can help project managers and central managers of PT. XYZ in monitoring and evaluating projects through the application ability to process input data and display data into useful project information.

In addition, to see the extent of the benefits of Opex Pro in supporting the process of monitoring and evaluating building construction projects at PT. XYZ, a more in-depth research is needed on the perceptions of users of the Opex Pro application itself. This needs to be done in order to identify the strengths and weaknesses of Opex Pro and the extent to which Opex Pro is successful in supporting the project management function at PT. XYZ.

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