



**Faculty of Manufacturing Engineering**

**MEASURING THE EFFECTIVENESS OF PROJECT  
MANAGEMENT INFORMATION SYSTEM IN THE DECISION  
MAKING. CASE STUDY IN PEW GROUP**

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**MEASURING THE EFFECTIVENESS OF PROJECT MANAGEMENT  
INFORMATION SYSTEM IN THE DECISION MAKING. CASE STUDY IN PEW  
GROUP**

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in fulfillment of the requirements for the degree of Master of Science  
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## DECLARATION

I declare that this thesis entitled “Measuring the Effectiveness of Project Management Information System in the Decision Making. Case Study In Pew Group” is result of my own research except as cited in the references. The thesis has not been accepted for any degree and is not concurrently submitted in candidature of any other degree.

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Date : .....

## **APPROVAL**

I hereby declare that I have read this report and in my opinion this report is sufficient in terms of scope and quality as a partial fulfillment of Master of Manufacturing Engineering (Industrial Engineering).

Signature : .....

Supervisor Name : Dr. Seri Rahayu binti Kamat

Date : .....

## **DEDICATION**

To the sake of Allah, my Creator and my Master, My great teacher and messenger, Mohammed (May Allah bless and grant him), who taught us the purpose of life. My parents, for their endless love, support and encouragement along my life. My dearest wife, who leads me through the valley of darkness with light of hope and support, My beloved kids: Younus, and Fatimah, My beloved sisters, whom I cannot force myself to stop loving. To all my family, the symbol of love and giving. My friends who encourage and support me. All the people in my life who touch my heart. I dedicate this research.

## **ABSTRACT**

Decision making is considered one of the most important factor in the project management area. It has direct effect on the successful or failure the projects. The researchers approved through their studies the using of project management information system is helping the decision makers to make efficient decision in the critical situations. By using a survey questionnaire methodology from (148) decision makers of Power Engineering Word in Iraq, this study aimed to theorize new conceptual linkages between two popular paradigms of project management research, project management information system (PMIS) and decision making. This study tested for the pragmatic conceptual linkage between the project management information system and decision making. Using correlation, regression and bootstrapping in SPSS, results revealed that project overload and information overload on decision making, effected and controlled with the mediated role of the project management information systems.

## **ABSTRAK**

*Pembuat Keputusan adalah dianggap sebagai salah satu faktor yang paling penting dalam bidang pengurusan projek. Ia mempunyai kesan langsung ke atas kejayaan atau kegagalan projek. Para penyelidik terdahulu telah membuktikan penyelidikan melalui kajian mereka dengan menggunakan sistem maklumat pengurusan projek dapat membantu pembuat keputusan dengan cekap dalam keadaan kritikal. Kaedah soal selidik digunakan kepada semua pembuat keputusan seramai 148 orang di Syarikat Kejuruteraan Power Word di Iraq. Kajian ini bertujuan untuk membuat teori hubungan konsep baru antara dua paradigma popular penyelidikan pengurusan projek, projek sistem maklumat pengurusan (PMIS) dan membuat keputusan. Kajian ini diuji untuk menghubungkan konsep pragmatik antara sistem maklumat pengurusan projek dan membuat keputusan yang menggunakan analisis SPSS, keputusan data menunjukkan bahawa beban projek dan maklumat yang berlebihan pada membuat keputusan dapat dilaksanakan dan dikawal dengan peranan pengantara sistem maklumat pengurusan projek.*

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## **CHAPTER 1**

### **INTRODUCTION**

#### **1.1 Research Background**

Researchers have emphasized that the deployment of project management as a standardized approach and even with 100% attempted time does not induce assurance towards successful completion of a project. According to a report of Phillips, Bothell, and Snead (2002) unsuccessful and poorly managed projects in United States companies and government agencies have encountered an estimated revenue loss of \$145 billion per annum. However, even with the development of Project Management Body with substantial knowledge, which was ascertained to improve and facilitate project performance, the projects were continued to perform sub-optimally or failed. Standish Group (2014) research report results have indicated that around 31.1% of projects would be canceled before their completion; 52.7% of projects would cost 189% of original estimates and the remaining 16.2% of projects only were completed in time and affordable budgets. In larger companies, only 9% of projects completed their tasks in time and affordable budgets. In the largest American companies, only 42% of the originally-proposed features and functions pertaining to projects were completed and only 48% of the executives surveyed felt that there were more project failures when compared to previous five years.



Project management is a unique mechanism which is responsible for delivering information necessary to make strategic business decisions. It is generally acknowledged that the project management plays a vital role towards successful implementation of strategies in business. As companies compete, they employ project management for implementing their strategies.

Over the last 30 years, project management has been recognized as an efficient tool to handle novel or complex activities. Avots (1969) has been suggested that the project management techniques are usually proficient when contrary to conventional management routines to project, for example, Act the parts that are useful in a variety of formal associations of the slope to care for the situation. Procedure for bringing a new business project into the force flow sector request on form societies and requires its own management strategy, required to compete daily operation with the project. In such a situation, the project management system can effectively be implemented, while the organization has a limited, special effort and new. These efforts will call for more options and faster making system to the normal and settled in without doubt by the organization shall be the basis towards a fruitful resolve project. The use of project management has been connected with novel complexes like the novel, which is sure to be called project. Therefore, the performance of project management often has been connected with the final decision about the project. Through the duration, it has exhibits that both the project management and the achievement of the project are not as a matter of course straightforwardly related. Project management and project will fluctuate over its target. Next, the target of project management, for example, the controls of time, cost and advances are supposed not often confused to measure the achievement of the project. There

are many illustrations of projects, which are usually paid off despite not being completed in time or expense's plans (Jarocki, 2011).

In the meantime, decide, decision making and selected option's investigation was the best option in accordance with reason. It is usually considered as a study of subjective because it includes mental thinking and coherent. In decision making, there are different options that would be worth considering. In each case, the interest is generally not focused on the quantity of their own choice instead to distinguish each of the decisions and efficient option is to choose a favorable decision noteworthy the possibility of achieving or best suits a particular objective or target. Decision-making procedures to reduce exposure to any substantial extent. In most decision makings, vulnerability is reduced compared to eliminate (Harris, 2012). Only in few finite cases decisions are made with absolute certainty, which implies that most decision makings involve a certain amount of risk. If there is no uncertainty, then there is no decision.

Project management is the privilege of residing at the correct choice. Experienced project manager with large batches of results, and some of them; Need its own provider who is used to improve the quality in a product? If team members presented to enhance the implementation of improvement? Furthermore, should outsource work or performed by? Although project management, examination results are used as the principal, sorting operation's management and business zone. Analysis of assist system by specifying the Organization and creation of an ideal investigation with instability in expenses, costs and prospects of the investigation. The most critical part of the investigation results of the coordinated project management form in all Regional information. Investigation of potential decisions is a procedure breakdown at every stage in the middle of execution.

Assessment of vulnerability, likewise, is a procedure that a breakdown in the middle of the dangers of project management (Parker et al.,2013).

Urgent parts Manager in an organization is to explain about quick results, dividing the assets that rarely happened with efficient and reliable core interest. The Association will be busy with various projects at the same time usually face various difficulties. Venture supervisors responsible for efforts to change the connection, complexity and of course incident. This can be identified with the item of contention and operating time. Inadequate to adjust assets rarely frequent bring about extra weight at the Association of poor data quality, which prompts spearhead the effort and time again. In addition, certain difficulties occurred in the middle of interdependencies and associations projects and in the middle of the burden of excess data and projects (Patanakul and Milosevic, 2008). The Manager may be overpowered by a measure of information accessible to decision making, the length of the relevant information or become unconscious from a mistake. When all said in done, poor quality of information asked for making poor choices (Blichfeldt and Eskerod, 2008). The uses of the project management information systems (PMIS) are considered as the apparatus for money Director as a result of the commitment required in the decision-making chain and achievements (Raymond and Bergeron, 2008). The usage of PMIS in a multi project environment may fulfill a sensible undertaking task, which is a compelling system amid the management of different activities (Patanakul and Milosevic, 2008). Study about the use of a very broadly PMIS was centered on a project with high properties that multifaceted and as a result. PMIS is respected worthwhile in such situations (Raymond and Bergeron, 2008). Project managers that deal with single projects with less complexity may not be like to entertain with PMIS, because the time they have to

invest in keeping the system up to date may exceed the benefits gained from utilizing the system.

## **1.2 The Role of Decision Science**

What needs to be done to help project managers to make a correct decision? How people are processing huge amount of information? How they evaluate and select alternatives? How they assess and interpret probabilities of potential events or risks? The result of science, such as a piece of General Management Science is attempting to answer this and other question. The result of science is a good control given it is dependent on the top two and seems to be not very all over the Prefectures of learning such as the brain and vision research. The brain research on judgment and choice identified examples of specific mental which individuals it deems certain results. The system can be measured will be used as a piece of analysis results as they guide the most extreme heads for you. At lately, the choice of examination had been made viable apparatus with multiple orders. Organizations routinely their important efforts in the concrete system with aftereffect's analysis results. In addition, several organizations (oil gas or pharmaceuticals) will not pursue real without any thorough investigation official results. For example, if an organization has a wide Outlook, oil analysis results will help the Organization to identify those that should be made in advance by making become attention to potential weaknesses against the estimated oil stores.

The results of the Science used to dissecting mergers and acquisitions, venture capital, restructuring, new thing's progress and other relevant areas. The Government will use the results to build upon the results of their approach. For example, United State Government accepts the decision on the Science system to choose whether stores should be

founded at oil major investigations of the oil supply potential aggravations. Legal Advisor using examination results towards complex corresponded with the results from the evaluation could not be confirmed. The results offer therapy experts to make some help with correcting the findings and recommending the best treatment. A big decision examination includes investigation of danger, which is effectively used as part of a wide range, including project management. Various Associations are trying to build a management process formalized hazard, which turns out to be a very skilled practice (Hughes, 2012).

Different techniques and apparatuses intended to decide to be generally used in project management. It includes the latest efforts and apparatuses and portfolio management system, quantitative and subjective investigation of danger, and in addition the project performance measurement. Still a lot of managements of living new ideas for some of the important decision-making, especially associated with Brain Science considerations and decision-making. If the project manager knows a little nut and latched on human mental procedures, it will help them avoid some of the mental traps and explain about the right decision.

### **1.3 Problem Statement**

In spite of extensive work by Electricity Ministry and the companies in Iraq over the past 10 years and the development of the Project Management Body of Knowledge (PMBOK) that identified five process groups (e.g., initiating, planning, executing, controlling and closing) and nine knowledge areas (e.g., project integration management, project scope management, project time management, project cost management, project quality management, project human-resource management, project communications

management, project risk management and project procurement management) pertaining to successful project practices (PMI, 2004), very high rates of project management failure have been the major hurdle in Iraq, especially in electricity power projects because some of the companies who perform the projects have wrong decisions in the critical situation. That will lead to delaying of the delivery projects, spending more funds, wasting time and lacking in the supplying electricity power to populations.

#### **1.4 The Research Questions**

In order to complete the study and meet out the objectives, a set of questions have raised, which are to be solved and based upon the output of answers for the questions all objectives will be framed. The questions raised are as follows:

- I. What are the factors that can help Power Engineering World (PEW) managers to decide?
- II. What are the factor's priorities that can help the (PEW) managers to take decisions?
- III. How can the (PEW) project managers take decisions?

#### **1.5 Research Objectives**

The objectives of this project are

- I. To identify factors that help project managers to take decisions.
- II. To analyze the importance of the factors in the decision making.
- III. To suggest the Project Management Information System (PMIS) as a working system have efficient decisions in (PEW).

## **1.6 Scope of the Study**

The extent of this quantitative study will be limited to 148 decision makers, who are actively working in the Al-RUMAILA and Al-Qudus power stations that related to Power Engineering World (PEW) Company which situated in central and southern of Iraq. The information required for the study will be gathered from the decision makers (head mangers, assistants, heads of departments, assistants and senior engineers) within the Power Engineering World Company using a questionnaire survey which will be later analyzed by SPSS statistical software.

## **1.7 Significant of Study**

Project management acts as a facilitator towards the successful accomplishment of project completion. As such project management comprehends important management practices, such as communications management and data and information collection and analysis that can be used to support the delivery of projects and executive-level decision-making relative to management of the strategic plan. In order to manage strategic plans executives must have visibility into the operating performance of the projects in their strategic portfolios. Executives need to use information and performance data to make strategic business decisions. Without project performance data and information the possibility exists that inappropriate decisions can be made.

## **1.8 Summary**

This study is organized into 3 chapters. In Chapter 1, the researcher discusses background, problem statement, scope and objective. Chapter 2 presents basic view of project management information system and summary of related works. In Chapter 3, the

research methodology adoption, questionnaire form and statistical techniques using SPSS program are introduced.