

PROJECT INFORMATION COLLABORATION USING P6

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*Dear Allah, for love, peace, happiness and heaven...*

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## **ABSTRACT**

Project collaboration proves to be an effective element for project management. This is due to its proactive role in contributing to project success. As project success is a group work effort, it is important to ensure all team members are well-informed about the procedures in making sure the project is conducted in an orderly manner. Therefore, Primavera P6 is identified to be an effective tool to address many constraints in the conventional project management. The software has been chosen due to its ability in facilitating team-based projects, expediting decision-making and boosting an organization's efficiency. This study explores the concept of Primavera P6 and its implementation in project collaboration in Oil and Gas industries in the country. To establish these elements, interview and questionnaire surveys were conducted among a group of professionals from the industry to access their insights and knowledge of the software. The findings of this study indicate that the software has high potential in supporting the project management system. However, there are some challenges which needed to be addressed for the Primavera P6 implementation. This study also develop a basic interface for project reporting which is able to capture the information from P6 and presented in Microsoft Excel format. The study concluded that the benefits of implementing the software outweighed the disadvantages, and it proves to be the most effective tool in Project Management.

## ABSTRAK

Projek kerjasama dapat dibuktikan sebagai salah satu elemen yang berkesan untuk pengurusan projek. Ini adalah kerana peranannya yang proaktif dalam menyumbang kepada kejayaan sesuatu projek. Kejayaan sesebuah projek bergantung kepada kerjasama dalam kumpulan, pemahaman tentang setiap prosedur oleh semua ahli kumpulan adalah penting bagi memastikan projek dijalankan dengan rapi. Dengan itu, Primavera P6 telah dikenal pasti sebagai satu perisian yang berkesan untuk menangani pelbagai kesulitan dalam pengurusan projek konvensional. Perisian ini dipilih berdasarkan kebolehannya dalam memenuhi keperluan untuk projek berkumpulan, menyingkatkan masa untuk membuat keputusan dan meningkatkan kecekapan sesebuah organisasi. Kajian ini membincangkan konsep Primavera P6 dan perlaksanaannya dalam projek kerjasama ke atas industri gas dan petroleum di negara ini. Bagi menghuraikan elemen-elemen ini, temu bual dan soal selidik telah dijalankan terhadap kumpulan profesional dalam industri ini untuk mendapatkan pandangan dan pengetahuan mereka mengenai perisian ini. Dapatan dalam kajian ini menunjukkan bahawa perisian ini berpotensi tinggi dalam membantu sistem pengurusan projek. Selain itu, terdapat juga beberapa halangan yang perlu diatasi bagi pelaksanaan Primavera P6. Kajian ini juga membangunkan aplikasi asas bagi laporan prestasi projek di mana mampu untuk mengadaptasi maklumat daripada P6 dan dipaparkan dalam format Microsoft Excel. Kajian ini mendapati bahawa jumlah kelebihan menggunakan perisian ini melebihi jumlah kelemahannya, dan membuktikan ia perisian paling berkesan dalam pengurusan projek.

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## LIST OF ABBREVIATION

API	Application Programming Interface
CM	Primavera Contract Manager
CPM	Critical Path Method
DNS	Domain Name System
EA	Energy Australia
EPM	Enterprise Program Management
EPPM	Enterprise Project Portfolio Management
EPS	Enterprise Project Structure
ERP	Enterprise Resource Planning
ICT	Information Communication Technology
IT	Information Technology
KPI	Key Performance Indicators
LAN	Local Area Network
OSV	One Sight View
PHP	PHP : Hypertext Preprocessor
PIC	Project Information Collaboration
PM	Primavera Project Manager
PPM	Project Portfolio Management
SAP	Standard Assessment Procedure
SQL	Structure Query Language
UTM	Universiti Teknologi Malaysia
VPN	Virtual Private Networking
WBS	Work Breakdown Structure

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## **CHAPTER 1**

### **INTRODUCTION**

#### **1.1 Introduction**

The development and modernization has brought about many changes and modifications on how a project is being carried out in many sectors in Malaysia. Organizations nowadays are adopting project management principle across industries due to its proactive role in meeting project goals and objectives. As projects have becoming more complicated, it is reported that organizations are looking for cost-cutting alternatives in order to gather adequate skilled workforce regardless of geographical barriers and time constraint for project success.

Effective project management has been the most critical component in the success of a project in an organization. According to Walker (2007), project management is the use of resources in the company on a certain activity within time, cost and performance. Kerzner (1989) suggested that project management has been traditionally described as managing or controlling company resources on a given activity, within time, within cost and within performance. The definitions above indicate how important the role of project management in managing an organization. The two also indicate that a project management does not only stop at managing company resources alone, but also the three factors aforementioned, which are time, cost and performance as major constraints for a

successful project management which need to be addressed.

The role of project management as a tool to address complexities which might arise in a project task has been acknowledged over 30 years. Avots (1969) has suggested that a project management is more efficient than traditional methods of management, such as the practice of functional divisions in a formal hierarchical organization, for handling such situations. This shows that project management has been easing many quarters of late, as people prefer the way it handles a task as compared to the conservational way. Toney Sisk (2001), who jotted down the early 1960s as the time where businesses and other organizations were blooming and starting to see the advantages of organizing work project as well as comprehending the critical need to communicate and integrate work across multiple departments and professions. In the 1950's and 1960's project management techniques initiated by the U.S defense and aerospace sector became a core competency for most industries (Morris P.W.G, 2001). It has been said that organizations and firms around the world had gradually started to realize the importance of project management techniques, which greatly assisted them in completing their projects efficiently and effectively.

In Malaysia, project management principles are applicable in many industries throughout the country. It has in fact been the main driver for project success in most organizations to stand out in the highly competitive world. Employers would be exposed to at least a basic understanding of a project management under their belt to help them in being more effective while handling any given tasks. This is also to prepare them for change management due to development and customers' preferences which surfaced from time to time.

As project management is bound to face vary problems and complications every day, in which each structured to different solutions, organizations have started to venture into another alternative to address the constraints. Most projects require appearance of multiple skilled workforce to contribute and discuss ideas and solutions to the arising problems at one time. While it is almost impossible to gather the experts and gave face-to-face meetings every day of the week, it is important for organizations to look into a tool as an alternative to virtually address the problem, in parallel with the all rounded development in information and communication technology (ICT) today. The project managers would



not only need to develop their practical competence with the subject matter, but also need to have their fingers on the pulse on any recent changes or development pertaining to the use of the tool.

Effective Management is the extent to which a manager achieves the output requirements of his position (Reddin and W.J, 1970). This shows that a project manager has responsibilities on his or her shoulder to ensure a project would meet its objectives and goals for successful project management. Although project management has been the main drive for many organizations in reaching their goals, the techniques and principles are also bound to fail, due to certain factors and indicators.

Avots (1969) suggested many factors which contribute to failure of an effective project management, in which among all was lack of commitment to project. The factor suggested that successful project management requires commitment of all parties involved in making sure a project is defined accurately. As most projects require ideas from a group of high-skilled people, whom most are geographically diverse, it has always been an arduous task to assemble them to discuss ideas in the flesh. Organisations have been scouting for a tool to provide a solution to the problem, while keeping the project on schedule and improving project profitability all at the same time. This could be accomplished with the application of Primavera which acts as a cost-effective catalyst in ensuring a flexible planning system with effective workgroup collaboration.

Highly recognized for its role in supporting platform on the Project Management, Primavera has been a sought-after software packages among organizations nowadays. The software has become a clear choice of project professionals across industry verticals due to its capability in allowing a number of participants with unlimited users, subjected to the number of license deployed on the server from any workplace to work on the same playground.

According to Wikipedia the Free Encyclopedia website, Primavera is a brand name under which a range of software packages that collectively forms a comprehensive Enterprise Project Portfolio Management (EPPM) solution is marketed. Launched in 1983 by Primavera Systems Inc, the software is published by Oracle Corporation and has benefited organizations in effectively managing their array of projects. Apart from

providing end-to-end and real-time visibility of corporate information to inform portfolio management decisions, Primavera has also been used to ensure project team members would be able to exhibit the appropriate skills in completing any given project with correct resources.

Industries like Engineering, Construction, Architecture, Utilities, Energy, Power, Defense and Telecom just to name a few in the country have started investing on Primavera as a tool in supporting their project management due to its capability in multi-tasking as well as its accessibility through internet or Virtual Private Network (VPN). This has resulted to users be able to adopt different task simultaneously. This includes work on project monitoring, scheduling updating, document management, issue tracking and risk assessment without the need for users to face each other on 24 hour-basis.

Primavera also enables an organization to have employees or from all over the country to interact and work at the same time regardless of barriers. For an instance, a company would be able to arrange for a top management team at headquarters in Malaysia to communicate and discuss issues with an Engineering Team in Paris, an Installation Team in Dubai and a Fabrication Team in China as well as possessing stakeholders all over the world to participate in a project without any geographical barriers or time constraint. The team players would be able to capture the latest updated information to ensure any issues surfaced could be discussed and resolved in the community within the required time. Such an arrangement has been a practice adopted in some mega project by organizations as it required a simple yet efficient, fast and accurate database in the running of their project.

Primavera has also evolved over the years due to development and preferences. The software enables organizations to make use of their human resources by engaging with the employers in gaining optimal results when it comes to project management. In order to obtain results at a speed of light, organizations have to find the right people while forming cross-departmental teams to resolve complex problems. In such a circumstance, a problem such as a limited number of skilled people to do the required tasks is bound to surface. Most organizations get to the solution by optimizing their processes for staffing teams as well as outsourcing. In this case, the expertise of people from different region to assist project management play a crucial role to assure that the projects would be completed successfully.

It is paramount importance to study Primavera as an effective tool in project management as it would assist organizations in meeting their project goals and objectives within the required time. The software has the capability in helping organizations to allocate the right people at the right time, while balancing resource capacity and project demand. The organizations' resource request and staffing would also be able to be shelved accordingly. Employers would be able to identify and track employees with appropriate skills and experience to be promoted and placed at appropriate departments. In order to ensure effective project management, Primavera should be used as a tool to gather high-skilled people in achieving project goals or objectives. Consideration should also be given to work team to ensure their steadfast support and cooperation in collaborating to meet the project goal.

The study outlined the application of Primavera P6 Version 7, with the prior concern given to its role in Project Information Collaboration (PIC). For the purpose of the study, professionals from different oil and gas business segments, consisting of onshore, offshore, subsea and drilling and exploration, with above 15 years of experience were taken as samples to see their expectation of P6, due to their familiarity in PIC. This study could be very beneficial for the project team managers particularly, as to discover the potential of Primavera in facilitating PIC and thus increase their awareness in integrating its use while handling any projects in the future.

## **1.2 Problem Statement**

Local industries largely at present do not keep tabs much on the development of Primavera as there has been lack of exposure on its feature and enhancement of late. Although it is applicable in many industries here, most of the users are however still looking at the software as a tool to operate in planning and scheduling to support Project Management alone, without knowing its capability to the full swing.

Construction is often the largest source of employment in any country (Bust et al, 2008). Majority of construction industries are still heavily dependent on traditional means of communication such as face-to-face meetings and the exchange of paper documents in the form of technical drawings, specifications and site instructions (Baldwin et. al, 1999). There are two major issues to date which are rampant in the present local construction industries. The first issue is in manipulating the true potential of Primavera as a platform to support project management. This is caused by the lack of knowledge and publication on how to fully utilise the software to its full extend. Apart from that, a huge initial capital is required in operating the full scale system implementation. This shortfall lead to failure for the industries involved in meeting the cost, which would result to failing in implementing the software to its actual function.

The second issue surfaced is on how to generate a comprehensive Project Report Layout with OSV capability which could meet the Project Team needs on preferable easy understand layout format with minimal cost. This problem is widespread in the present situation on the local construction industries, in which most of the reports are written in Microsoft Word format after extracting final results from the Primavera software with a multi type presentation and a thick report which led to misinterpretation and slow action taken only current problem. Primavera Web Base Dashboard has the capabilities in generating any preferable reporting layout automatically based on user's parameter input but it would require each project team to acquire the license which led to huge additional project expenditure.

This study is to introduce the application of Primavera, particularly P6 Version 7, as well as to exhibit its importance and benefits as a supporting tool platform in PIC. The study is also meant to address the role of Primavera in developing Project Reporting Layout Tools in order to overcome the second problem aforementioned. The software, which has been widely used in Oil and Gas businesses, has been proved to help a project to go smooth, without a hitch while overcoming constraints like time and geographical factors. There is however less exposure on the software at large for other industries to take into examples in adopting it into their projects. It is hoped that this study would encourage the use of the software to its function in the whole area of project management across industries in the country.

Therefore, the statement of the problems for this research to be highlighted here is whether P6 could serve as a solution to problems faced by many organizations when conducting a project. In line with this, I have taken the PIC to be integrated with Primavera to be put into study.

### **1.3 Aim and Objective**

The aim of this study is to explore the potential of using Primavera as a platform to support PIC in construction industry. To achieve the aim, the following objectives have been identified:

- i. To evaluate the importance of PIC in managing construction project.
- ii. To evaluate the potential of using P6 as a platform to support the Project Management System.
- iii. To evaluate the preferable information required in Project Reporting Layout.
- iv. To develop a conceptual Project Reporting Layout with OSV capability using preferable application based on Primavera database using Microsoft Excel with Dynamic data manipulating.

It is expected that this study will help to uncover the potential of P6 Version 7 of Primavera for project success of an organisation. The framework of this research is heavily dependent on the features of Primavera, which would facilitate PIC and greatly contribute to project success when utilised at the full swing. This dictates how Primavera should be carried out and the team members' expectation on its capability in doing the aforementioned roles. The research would look closely on how the software could facilitate a project with its unique features. This is also to ensure projects are conducted in succession.

#### **1.4 Research Scope and Limitation.**

To achieve the objectives of the study, the scopes of the study was limited in four ways:

i. The feature of Primavera

The study has undertaken P6 version of Primavera to be put into study. It was based on its features and characteristics, which was listed in the literature review of the study. The Information generated by Primavera will be based on hypothetical project created for this project. This study is limited to Primavera P6 Version 7, which will be used in this study in attempts to propose the method to create the Project Reporting Layout using Microsoft Excel which can fit in with the construction requirements. This study also is limited to the design of Project Reporting Layout with OSV capabilities through Microsoft Excel using dynamic data manipulating and demographic output method.

ii. Time

The time frame of this study was subjected to the one stipulated by the time table of the taught course of Master Degree programme by UTM. It was spread over two semesters.

iii. Location

The study was focused to uncover the potential of Primavera P6 in oil and gas industries in which selected organizations in Kuala Lumpur were chosen.

iv. Data collection

The data were collected by utilizing the feedback obtained from a group of professionals and experts in the oil and gas industries. The questionnaire used for measuring the potential of P6 was suitable for use of the groups in the selected companies only.

This study is confined to 5 professionals of Oil and Gas companies in Kuala Lumpur, who had a vast experience of above 15 years in conducting a project at the respective organizations for expert interview and 30 respondents from various oil and gas business segment for questionnaire Survey.

As this study is conducted to only on a limited number of respondents, there would be some clear distinctions in terms of responds received to be put into comparison in particular questions. This is because certain respondents may answer certain questions according to their own experience and preferences, in which would generate different answers accordingly. This would be difficult to determine if P6 has the mentioned potential in contributing to project success as it is beyond the control of the researcher.

However, this study can be used as a base for further investigations on the effectiveness of the software to be integrated in PIC in organizations, with a strong emphasis on its unique features to serve as solutions to many complications in a project.

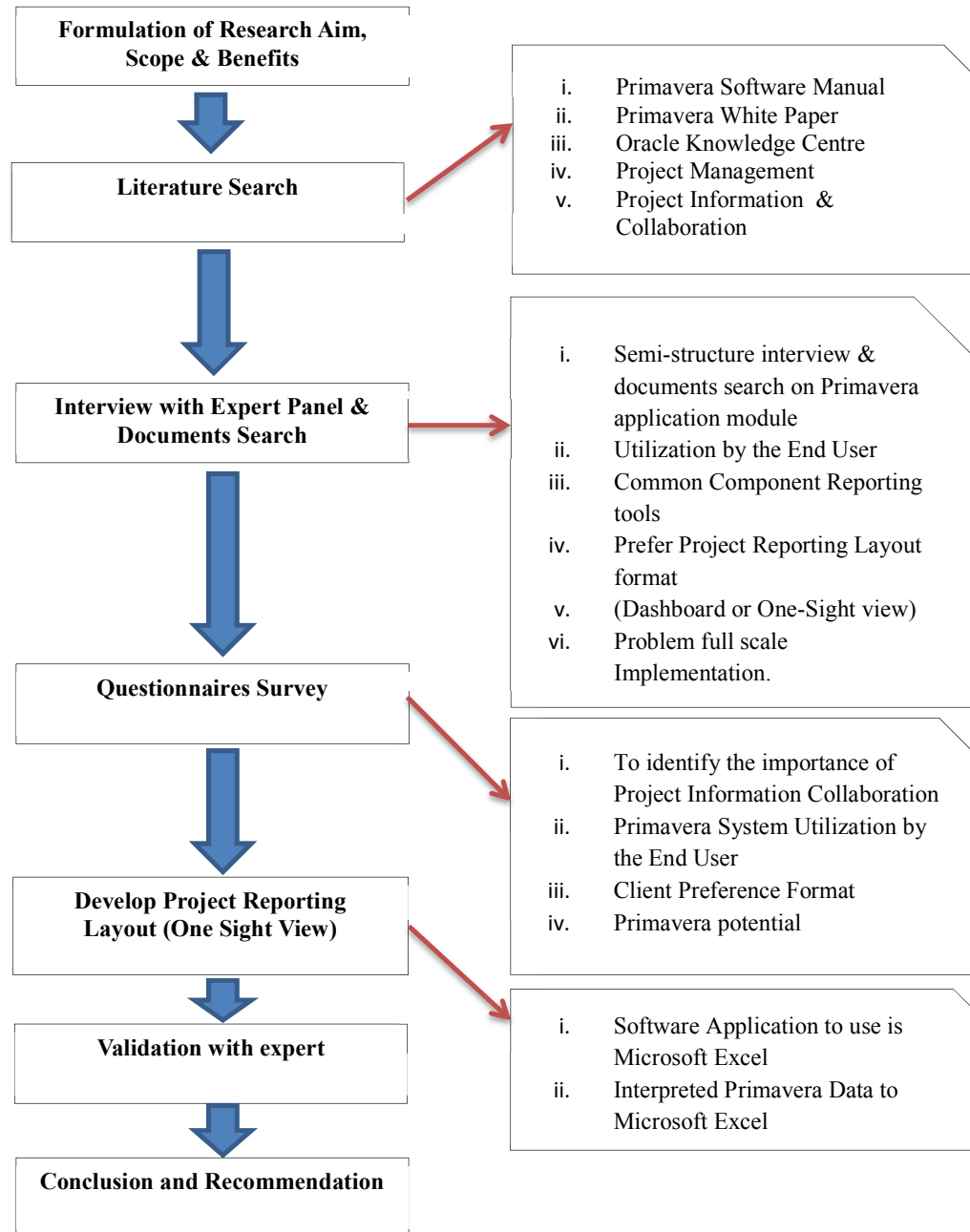
The study is also limited because of the fact that the respondents have to provide general answers on certain questions in compliance with the organization's policy. Such limitation does not allow the respondents to be straight forward in their responds as some curtailments are drawn in the organization's policy.

## **1.5 Project Importance**

This project study has showed the importance of Primavera P6 as a tool to support Project Management and Microsoft Excel as the preferable alternative on Project Reporting Layout with OSV capabilities.

## 1.6 Brief Research Methodology

The research methodology is briefly presented by the flow chart as shown in Figure 1.1 below. Detail of the methodology will be further explained in Chapter 4.



**Figure 1.1** Brief of research methodology



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