

THE ISSUE OF DELAY IN CONSTRUCTION PROJECT

¹Seng Hock Sing, ²Saw Hoay Ping, ³Tan Poh See, Mohd Nasrun Mohd Nawi, Wan Nadzri Osman

¹College of Arts and Science, Faculty of Quantitative Science,

^{2,3}College of Arts and Science, Faculty of Technology Management and Logistic,
Universiti Utara Malaysia, 06010, Sintok, Kedah, Malaysia.

Email: ¹s204285@student.uum.edu.my, ²s207234@student.uum.edu.my,

³s207247@student.uum.edu.my

ABSTRACT

The lack of completed and effective work schedule in the construction project causes conflicts at construction progress. As a result, project to be delayed. In Malaysia, the majorities attitudes of contractors are less emphasize to prepare work schedule. Thus, projects involved will over commit construction materials and human resources. From issue above, there is a need to study the techniques of work schedule for monitoring progress. With a case study provided, its findings focus on the necessity of prepare work schedule. After there has an adding work schedule, many construction phases run smoothly and construction resource also to be used wisely.

Keywords

conflicts, project to be delayed, attitudes of the contractors, prepare work schedule, over commit resource

scheduling manually because its systematic features enable individual to insert many different activities data and then process it significantly with less of conflicts. There are a variety of scheduling techniques, such as Gantt charts and network method. The technique used depends on the size, complexity and duration of the project. It also depends on the client requirements.

The use of an effective job scheduling in construction projects could ensure the construction project goes smoothly. Contractors have this schedule plan making; it could be the basis for monitoring process and controlling activities in a construction project. The relationship between duration of the project and the costs involved are included in the job scheduling. It directly helps project managers to monitor and control the project not to exceed a predetermined period of time and avoid cost increases which are delayed or error work done. With this monitor, it can show the effectiveness of the work schedule made.

1.0 INTRODUCTION

Basically, the construction projects will be delayed either it occurs on a job or on the whole project. It happens as a result of time frame problem. It can lead the construction project to be delayed seriously and as a major problem in completing the project. Therefore, work schedule should be arranged carefully and involved all relevant factors, such as lack of workers, late arrival of building material, work errors, poor management and so on in order to ensure the project finished according to what has planned.

Nowadays, work scheduling techniques are more easily made by some software in preparation of the work schedule. For example, Microsoft Project and Primavera Project Planner are popular recommendations in the construction industry. There can facilitate individual arranges many works efficiently in scheduling process and also can produce a better report when utilize it well. The use of computerized scheduling is much easier than

2.0 LITERATURE REVIEW

Job scheduling is an important aspect in the management of construction projects. In the interest of job scheduling is to provide assurance to the client that the project could be completed in the time available as agreed in addition to providing insight into the work done. Work schedules are also covering the entire activities involved in the success of the project. With this activity, the project objectives will be better understood and the target can be made to produce a better quality work.

By providing work schedule will ensure that only the work involved just to do and avoid things that are uncertain. In addition, the scheduling provided it can make more efficient the operation is due to the presence of management resources efficiently. With that, cost control can be done easily. The availability of this work schedule, monitor and

control projects can be done more easily in ensuring they reach the intended target.

In managing a construction project, there will be problems occurred during the project. Problems could cause delay in the completion of the project. Delay is a big thing in a construction project; it involves the whole of the project. There are six factors that cause delays in the project is the construction material resources, human resources, equipment and machinery, financial resources, subcontractors and project management (Ryan Fyfe, 2010).

All construction projects to be built have work scheduling at an early date, but delays still occur as well. Planning, scheduling, monitoring and control are basic things that needed to be reviewed and acted upon in the preparation of job scheduling and make sure it can be done (William, 2002).

Method and arrangement of activities in work schedule must follow logically and methodically. Failure to provide paper work schedules causes smooth ride that are not working and could delays in completing the projects. Impact of these delays can cause changes to the work schedule, changes in work activities, on-site extension of the use of equipment. All these problems increase the cost of project and burden the client in the additional cost.

Good scheduling must be accompanied by regular monitoring. Fail to monitor the progress of the work on site can cause many problem. The problems that occur at the site cannot be detected and resolved quickly if monitoring is not made, this causes delay and disruption of the work schedule has been made. The lack of monitoring can lead to errors in doing the work, this error can also change the work schedule , in which the work had to be made and corrective interferes with others and increase the time required. With the availability of the monitoring work schedule has been made, it helps contractor to plan the resources required during the project such as the supply of building materials, labor requirements and the use of plant and machinery. Indirectly, it can help in achieving the goals of the project

3.0 METHODOLOGY

3.1 Data Analysis By Gantt Chart

Gantt chart can execute various functions for planning and executing projects. It uses the time scale shows the activities or tasks done from the beginning until the end of activities. This Gantt chart can be understood by all levels of

management for the project construction. However, this Gantt chart technique cannot be used for complex projects and a lot of activities. This is because the technique is not able to show a relationship between one activity to another activity. Of course, in every construction activities are related to each other. This technique may also be used as a blueprint but not as a detailed plan for each activity.

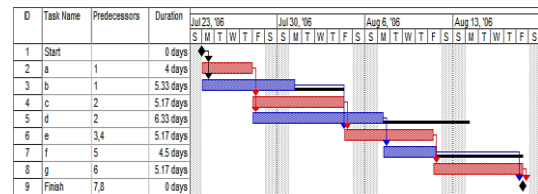


Figure 1: Gantt chart uses the time scale shows the progress of each task.

The most important information will show on the top of Gantt chart. Thus, there is no standard format to do a Gantt chart. Insides the Gantt chat, it will concludes period of contract, starting date for each operation, period of time for each operation, aim of operation, number of worker is needed for the main type of work, logy mechanical is needed, date of delivery of the materials, date drawings and information required to perform the work, sub-contractors involvement, holiday time, the main work item quantities, progress, important dates and client requirements. Gantt chart is a communication tool because it can give a clear picture of the project and is easy to use and easy to understand. The elements in Gantt chart can be used to show progress. Besides, it also can be used for human resource planning, ordering and scheduling. Thus, it can be used to produce a budget.

3.2 Data Analysis By Network Method (CPM)

In the preparation of this network method technique, we simplify more complex in monitoring activities. This technique is also easy to be associated with the planning of construction resources. By using computer software such as Microsoft Project and Primavera, these techniques have been making the scheduling become easier. Through using network method, contractors can make decisions quickly. Among the techniques that can be used chain is as Critical Path Method (CPM). It is easier and more flexible than the first time it is used. Construction process take a step at a time and split and projected into sub-sections or activities to be carried out. Each plan is to make every activity carried out in accordance with the correct sequence and make it more systematic. According to Nishadha Silva (2011), the basic steps in preparing a CPM schedule includes individual to identify basic tasks or activities that must be performed to

complete project and estimates the time required for each of the activities involved such as table 1 below.

Table 1: Project Data in Maintenance Activities

Activity	Preceded	Followed	Contingent Time (Week)
A	NO	B, C, D, E	2
B	A	F	3
C	A	F	5
D	A	G	4
E	A	H	7
F	B,C	J	8
G	D	K	9
H	E	K	4
I	K	L	12
J	F	L	10
K	G, H	I	8
L	J, I	M	4
M	L	NO	3

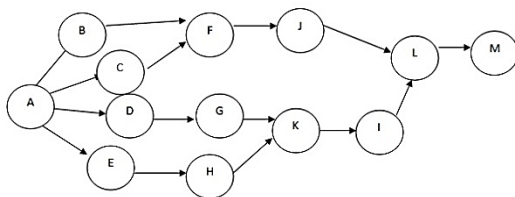


Figure 2: Critical Path Method (CPM)

Critical path (figure 2) is the sequential activities from start to the end of a project. Although many projects have only one critical path, some projects may have more than one critical path depending on the flow logic used in the project. If there is a delay in any of the activities under the critical path, there will be a delay of the project deliverables. Most of the times, if such delay is occurred, project acceleration or re-sequencing is done in order to achieve the deadlines. The activities that have a direct impact on the completion date of the project. For example, task A is a start point and it should be take part before task B, C, D and E happens. While tasks B, C, D and E should be complete at the same time as this task. Task F, G and H should happen immediately after tasks B, C, D and E. After that follow by task I, J, K and L and lastly end at the end of task M.

4.0 FINDINGS (CASE STUDY)

Project : Luxury Flats Gurney Heights
Proposed Construction

Luxury Apartment 2 Blocks 22 and 23 Storey (163 Units)
Block 1 Clubhouse Recreation, Swimming Pool, Kindergarten, and Office of Management
3 Level Basement Parking Space Rumah Pangsa Mewah Gurney Heights
In 1D Sector For 1071 And Lot 1371, Jalan Bukit Keramat, Mukim Setapak, Kuala Lumpur City.

Contractor : Modular PJIC Sdn. Bhd.

Contract value : RM 20,000,000.00

Inception Date : October 1, 1998

Project Period : 20 Weeks

Completion date : 30 April 1999

(Source: <http://www.efka.utm.my/thesis/IMAGES/3PSM/2000/JSBP1/yewmeiyee4.pdf>)

Luxury Flats construction projects Gurney Heights consists of 2 phases. This project selected as case studies due to the application of project management concepts in the construction of this project. The two phases of this project also faced problems from the start. Phase 1 of the project should be completed in August 1997 but was Rube delayed for 22 months until 30 April 1999. During this period, there were four main contractor has taken over this project. The four main contractors are terminated (terminated) by the owner for some reason.

Delay is the main cause of this project. By the early planning of the project, the project completion date supposed to fell on August 1997 but with the change of contractors on site, much time has been wasted in such things like the bidding process, the preparation of the contract, the interval between the old contract and the contractor left the site just entering the site, and the action slows down the work by the contractor. The main cause of the delay was due to the change of the number of contractors too much over the life of the project. Each time of the contractor was ordered to stop work, the construction site will be left for the time being to allow the assessment and legal action will be taken. Once the settlement is reached, reopened construction project will then up for bid and it is time for a job offer and a new contractor selection. The next work is the preparation of contract documents after the parties negotiate and reach an agreement.

Ready notified that any further because all the contractors of this project were laid off from work due to delay in completion of the work. Usually a deliberate act of delaying the contractor's work

continued for some time before action is taken by the contractor to stop the work selector. During this period, much time has been wasted crops is futile. Owner party suffered heavy losses in the delay faced by the project.

5.0 DISCUSSION

This study was conducted for the purpose of identifying and monitoring scheduling method works at the construction site that is used to ensure that projects run smoothly and be completed in the stipulated time. This study will also identify the technical problems that occur during the execution of the work schedule has been made for the guide and emphasized the importance that should be taken into account for each contractor in the performance of work and complete their projects. It was hoped that an effective job scheduling system, it can reduce delays that often occur to Malaysian contractors, especially in completing the construction.

In preparing the work scheduling, various techniques can be used. Selection techniques used must be able to understand and can be interpreted by all parties involved, especially the owner or client. The proprietor or his own client will instruct the contractor to use a technique that can be used. There are various techniques that can be applied in the use of techniques which include Gantt charts and network method techniques.

6.0 CONCLUSION

During the life of a construction project, there are many problems and conflicts that inevitably occur frequently. The problems and conflicts will affect the smooth running of the project and leave the side effects that may lead to project failure. Project delayed is often a major problem that faced by the construction industry. Effect of delay on the project

is due to rise by inflation costs, management expenses, additional interest rate loans, financing infrastructures costs such as electricity and so on. These negative effects can disable execution of the project. Therefore, the parties involved, especially the project manager Foresight is essential in identifying the problems that may occur and to formulate strategies to deal with it early.

REFERENCES

- Efka.utm.my.com. [PDF] *Kes Kajian Kelewatan Pembinaan Rumah*. Retrieved April 16, 2013 from <http://www.efka.utm.my/thesis/IMAGES/3PSM/2000/JSBP1/yewmeiyee4.pdf>
- Efka.utm.my.com. [PDF] *Article Of Kelewatan Pembinaan Rumah*. Retrieved April 16, 2013 from <http://www.efka.utm.my/thesis/IMAGES/3PSM/2010/JSB4/muhammadadamba070079d10ttp.pdf>
- Nishadha Silva. (2011). *Critical Path Method In Project Planning*. Retrieved from <http://creatly.com/blog/diagrams/critical-path-methid-projects/>
- Ryan Fyfe. (2010). *How To Stop The Most Common Scheduling Conflicts*. Retrieved from <http://www.shiftplanning.com/articles/how-to-stop-the-most-common-scheduling-conflicts.html>.
- William C. Last, Jr. (2002). *The Use of A Construction Schedule To Analyze a Delay*. Retrieved from <http://www.lhfconstructlaw.com/Articles/The-Use-Of-A-Construction-Schedule-To-Analyze-A-Delay.shtml>