

APPLICATION OF FAST TRACKING TECHNIQUES TO OVERCOME TIME & COST OVERRUNS IN CONSTRUCTION

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ABSTRACT

Construction technology includes a nice potential to enhance productivity and reduce project period. Delay happens in several construction activities, delays will cause wide negative effects like loss of productivity and revenue, and contract termination. Additionally, the paper presents the connection between new technology and time overrun in those projects. In India the amount of road development activities is increasing from time to time. However, it becomes tough to finish project within the allotted cost and time. Taking this into thought, time and price overrun is one among the most important issues in Indian road project. The foremost necessary causes for overrun were delay to furnish and deliver the location, financial issues and improper designing. Whereas the foremost necessary causes of cost overrun were found to be delay in construction, inadequate provide of raw materials and Instruments by contractors, improper planning, incomplete design. Therefore, this analysis was administered to know such issues and to resolve such overrun of time and cost by implementing fast tracking techniques. Fast tracking is one of project management methodology. It has a very important use and purpose - to deliver on time, on budget activities even once one or additional limiting constraints substitute the method of success. Fast tracking could be a specialized management approach - to be used whenever you're asked to deliver over existing capabilities enable and you would like a regular way to place things back in balance.

Keyword: - Project Management, Time overrun, Cost overrun, fast Tracking, etc.

1. INTRODUCTION

The construction industry is actually the engine of the financial system of a nation. Through that the overall of physical development is achieved. The construction business may be an important component of the economy and includes a vital result on the potency and productivity of different business sectors. "One cannot consider widespread investment in producing, agriculture, or service sectors unless the industry results of infrastructure facilities will be in situ. In a number of the developing countries, the expansion rate of construction activity outstrips that of the population and of gross domestic product".

The aim of this analysis, time overrun is outlined because of the time distinction between the particular completion time and also the estimated completion time, in agreement by and between the consumer and also the contractor throughout signing of the contract. And cost overrun is that the price distinction between the particular completion cost and also the estimated completion cost.

1.1 Meaning of time and cost overruns

Time Overrun is Inability to complete a project either by the initial planned time or budget, or both, ultimately leads to project delay. The social and economic prices of delay may be surprisingly high and to a precise extent can't be absorbed by the business. Once a delay will no longer be absorbed by the costumer, it'll lead to the project being abandoned. Thus, it's vital to predict and establish issues within the early stages of construction and

diagnose the most causes and implement the foremost applicable and economical solutions to stop additional negative impacts of delay.

Cost overrun is that the quantity by which actual prices exceeds the baseline or approved prices. For the need of this analysis cost overrun is outlined as positive distinction between the final or actual price of a construction project at completion and therefore the contract quantity in agreement by the customer and therefore the contractor throughout signing of the contract.

1.2 Causes of cost overruns

Cost overrun could be a quite common development and also the majority of projects within the construction sector face this issues. This issue is kind of serious and more study on this issue is required to cut back the issues. There will be some factors that contribute to cost overrun within the industry that is found from the researchers study. The main factors that are listed as follow:

1. Inaccurate or Poor Estimation of Original value
2. Inflation of Project prices
3. Poor designing
4. Poor Project Management
5. Lack of expertise
6. Obsolete or Unsuitable Construction Equipment's and ways
7. Unforeseen construction area Conditions
8. Mistake in design
9. deficient Fund
10. Poor Contract Management
11. High Cost of Machineries.

1.3 Causes of time overruns

Many studies are conducted in several countries to check the factors which can affect time overrun in construction industry. PMI conducted a study in Kuwait to check the causes of duration and cost overrun in construction plans. They came to a conclusion that the most causes of delays will be modify orders owners' monetary constraints, and owners' lack of experience. They said these are recommendation to the customers so as to reduce time delays:

- i. Project owners will need the supply of adequate funds,
- ii. Allocation of required time and cash at the planning section,
- iii. choice of a competent authority and reliable contractor to execute the work.

1.4 Introduction about Fast tracking

When it involves managing the project schedule, quick pursuit is a longtime technique, wont to shorten the time it'd otherwise desire complete a given project. Within the simplest sense, a quick tracked project schedule necessitates "doing several things at once". This text examines all the risks and edges, showing you ways to form the foremost out of each "fast tracking" chance.

The list below summarizes the usual circumstances

- To notice maximized productivity for project programing and resource utilization.
- To complete the project among the shortest time doable to satisfy specific priorities.
- To complete the project previous expected as a result of dynamic circumstances.
- To compose for lost time and/or alternative deficiencies.

FT is employed like every alternative PM methodology - to set up, define, govern, administer and shut comes during a structured, standardized manner. it's a lifecycle, with phases and steps to be told, adapt and apply. FT additionally has its own series of optimizing techniques, providing the suggests that to specialize in priorities and build the foremost of obtainable resources.

These techniques are elaborated additional within the approaching sections, however are summarized below

- The FT analysis is employed to analyze project conditions and to work out whether or not strategic quick chase is suitable for a given project.
- The "resizing" technique is employed to analyze project "demands" and establish the foremost viable wants and relevant priorities.
- The "negotiation framework" is employed to collaborate and hash out with project stakeholders to create the "stakeholder meeting of the minds" and establish shared expectations.
- Standardized "definition criteria" are accustomed specify the project scope and work effort so the project may be properly planned and executed.

2. METHEDOLOGY

2.1 Project Time management

PMBOK's (1996) defines project time management because the effective and economical use of your time to facilitate the execution of project that starts from designing, programing and dominant the project to realize the time objectives. Deggoft and economic expert define project time management because the development of a project time schedule, to manage that schedule, and to confirm the project completes among the approved time schedule. Therefore, schedule is vital to manage time that involves process project activities, sequencing the activities, developing the schedule, capital punishment the schedule and dominant the plans throughout project execution.

Project time management includes the processes needed to confirm timely completion of the project.

Overviews of the key processes in project time management will as follows:

- o Activity definition: distinguishing the precise activities that has to be performed to provide the assorted project deliverables.
- o Activity sequencing: distinguishing and documenting interactivity dependencies.
- o Activity period estimating: estimating the quantity of works periods which can be required to complete individual activities
- o Schedule development: analyzing activity sequences, activity durations, and resources necessities to make the project schedule.
- o Schedule control: dominant changes to the project schedule.

2.2 Project cost management

In PMBOK defines project price management as the method of crucial the entire price of the project, to manage that price, and to make sure that the project is completed at intervals the approved budget or price. Keeping at intervals the budget, and knowing once and wherever prices will be deviating the keys to economical and effective cost management and profitable operations.

2.3 Project fast tracking theory

Fast tracking of the project schedule is suitable and even essential underneath variety of key conditions and circumstances. But, within the globe, fast-tracking could be a nuanced method. As a schedule is fast tracked, antecedently serial tasks (one finishes, successive begins) will be rearranged to permit for multiprogramming (when dependencies allow), thereby shortening the general project timeline.

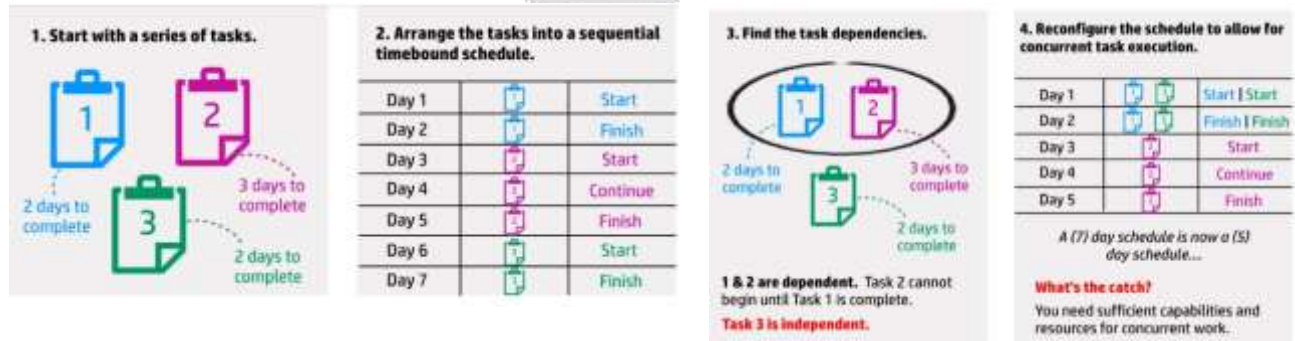


Fig -1: Schematic diagram showing Fast Tracking.

2.4 Fast-track planning process

- o Verify Your "Fast Tracking" Goals and Capabilities
- o Examine the Project Schedule to spot Dependencies
- o Realize "Fast Track" Opportunities within the Project Timeline
- o Establish all the Viable Alternatives to create Schedule changes
- o Create knowledgeable selections (Based on known Alternatives)
- o Ask for agreement for all fast tracking choices
- o Monitor Progress and Track issues

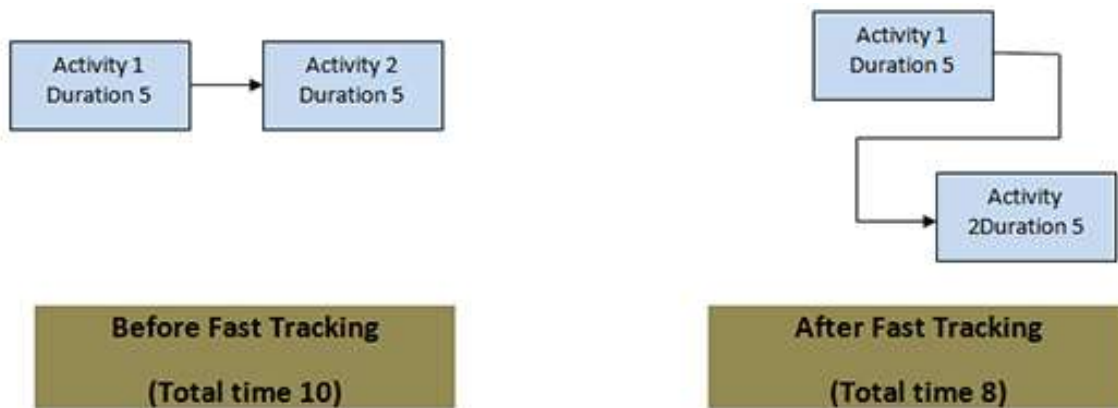


Fig -2: Working of Fast Tracking theory.

2.5 Managing Fast-tracked schedules

Fast-tracked schedules need nimble, skillful project management. If things will be moving quicker, potential issues have to be compelled to be known and corrected additional quickly. Otherwise, once unexpected changes occur, it should be too late to avoid remodeling the planning. Using old finish-to-start logic, easy changes at intervals one discipline don't usually impact down-stream disciplines. However flipping to finish-to-finish logic will turn this on its head. Changes that were once among the scope of once discipline currently have to be compelled to be evaluated by all the fast-tracking partners, and want to be evaluated quickly. That's as a result of parallel execution means that all the disciplines risk having their work redefined by changes outside their management.

The burden of managing fast-tracked schedules falls in many places. Of course, it falls on the project managers, however conjointly on the project managements – integrated amendment control, and configuration management. The amendment system needs to react a lot of quickly to a lower threshold of amendment, and it's to handle and quickly assess an accumulated range of plan changes. Configuration management is required to observe the merchandise closely, particularly wherever the disciplines move, inflicting product specifications to be quickly reworked. Additionally, additional communication is needed to manage fast tracking. This typically leads to additional conferences, additional emails, additional phone calls, and a usually higher level of management oversight and disaster management.

2.6 Important points which gets ignored about Fast Tracking

- o Fast tracking isn't done blindly by ever-changing schedule to own activities running in parallel. Rather activities will be analyzed to parallel work and extent of it.
- o There is relevance "at least some of their period." In definition. This suggests full activity/activities don't seem to be needed to be tired parallel. parts are often done and most of the time its parts solely
- o In a scenario wherever schedule compression is needed, this method is explored initially
- o Any schedule compression technique is applied on the activities of vital path activities else we have a tendency to might find yourself owning risk with none tangible output of it
- o Fast tracking will solely be done to some limits once that if continuing might solely add risk and work on and not schedule compression. Ultimately you have got to attend for concrete to settle before begin of painting.

3. RESULT

A State Highway road Project is taken as a case study and implemented fast tracking techniques on its Microsoft Project Program activities. And it will show Gantt chart of scheduled, fast tracked programme prepared for the case study considered. From the programme it was seen that by using Fast Tracking technique there was decrease in project completion Time from 39 months to 30 months which was 23% of total project completion time.

4. CONCLUSION



The conclusion of the study is that the effects of cost and time overruns in road construction have been terribly manifold and there is no easy way to how to improvise the dependability of the project cost and time estimates. In order to remain among the given budget frame, the designers will use many cost and time management and designing strategies, like the fast tracking. This thesis examined the relevancy and usefulness these management techniques and designing strategies from the designer's perspective. Found potential development in overcoming by cost and time overruns.

Fast-tracked schedules need nimble, skillful project management. If things will be moving quicker, potential issues got to be known and corrected additional quickly. Otherwise, once unexpected changes occur, it's going to be too late to avoid remodeling the planning. Exploitation ancient finish-to-start logic, easy changes among one discipline don't unremarkably impact down-stream disciplines. However flipping to finish-to-finish logic will turn this on its head.

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BIOGRAPHIES

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