

ADAPTIVE PROJECT MANAGEMENT

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ABSTRACT

Conventional project management is not effective in the situations of high uncertainties. Project manager, who is fully responsible for timely completion of the project, having no additional tools for successfully completion of project in case of predictive project management. Conventional or predictive project management is liner in nature having defined scope of work and requirements. In adaptive project management entire project breaks into the smaller component over an undefined timeline and allow to gradually improving your decisions and practices, by learning from outcomes of the decisions that you took at previous stages in the project. In this paper adaptive project management has been discussed. Benefits of adaptive project management over predictive project management have been discussed to reduce time and cost overrun during execution of the project. It has also been observed that adaptive project management having better time response over conventional project management.

Keywords: Adaptive Control,, Project Management, Project Manager, Project Life Cycle, Time Overrun, Cost Overrun.

I. INTRODUCTION

Adaptive system has a technique where it adjust the changes in real time to maintain desire performance of system with dynamic variation in system parameters. Adaptive control plays a vital role human life, industries and in management system. Now a day's human, machinery, infect whole system of universes is being driven by controlled input to achieve desire output/ goal. For achieving excellent result, optimum utilization of resources with better feedback is required to reduce the time and cost. In management system, 4M (Men, Machinery, Material & Money) is to be managed to achieve the desired goal. Adaptive project management is part of management, where we deal with the adaptive project life cycle in context of management in real time analysis. In Project Management system vision of the higher management is converted in reality in specified project life cycle. Based on the feasibility of the project, utilizing the adaptive project management system, we analyze the same in real time analysis to achieve desire output/goal.

Adaptive means having the ability to adapt to different situations. Every system, machinery, Societies need to develop highly adaptive behavioral for survival. Adaptive revolution allow any system for fittest with their own existent. Normal, liner or non adaptive system are ease for implementation [1]. Nonlinear process is difficult to control with fixed parameter controller. Adaptive system is best tool to improve the performance of the system.

Adaptive controller is a technique of applying some system identification to obtain the desired result [2]. In Project management system, we convert vision into the reality. In other words, we can say that in project management system desire result can be obtained by utilizing skill, tools, knowledge and technique to project activities [3]. The project may achieve some good result for an organization in a controlled and structured manner [4]. comprehensive definitions which state that projects are having series of activities i.e project life cycle and task with specified goal to be executed in stipulated time and cost [5], [6]. Sometimes it has been observed that dynamic behavior like change in environment, economic growth, political scenario, change in technology etc comes into the picture of project management. In this case execution team must have readiness to adapt such dynamic changes, these dynamic and non-liner minutes changes can have major changes in goal of project resulting time and cost overrun [7]. The most important characteristics of complex adaptive systems are non-linearity, dynamic behavior, emergence and self-organization [8].

Adaptive law is also applicable for project management, in this paper adaptive project management & conventional/predictive project management been discussed and advantage of adaptive over predictive project management wrt time and cost overrun been also discussed and it has been conclude that adaptive project management is better option to reduce the time and cost overrun.

II. CONVENTIONAL/PREDICTIVE PROJECT MANAGEMENT

Conventional or predictive project management deals with entire life cycle of the project. In predictive project management scope of work and requirements for the project are clearly mentioned, accordingly planning is done and project is executed. Sometimes it has been observed that during final stage of project, desired result is not achieving and project got failure. The predictive project management we mainly discuss or focused on initialization, planning, execution, monitoring & closure of the project with anticipated risk. It is also known as waterfall project management.

The life cycle of the project is from initialization to closing of project. It is nothing but basic framework for managing the project process. Irrespective of project size and complexity, projects are categorized in following life cycle.

- a) **Initialization Process of Project** : Based on the market demand, new modernized unit or addition, modification, replacement in existing unit is considered. In this process new project or new phase conceived by obtaining authorization from higher management.
- b) **Planning Process of Project** : In planning process phase, we define the objective of project, scope of work, time schedule, cost of project, human resources, Quality, appointment of consultant, stakeholder, risk management, course of action to achieve the project objective. This part of project life cycle play important role for any project. We planned project having own advantage for timely completion of the project without any risk.
- c) **Execution Process of Project** : In execution process, project is executed as per defined plan of project management. During execution of project, it may be possible that some unforeseen nature (risk) of job comes into the picture that may cause of time overrun and cost overrun of the project. If project is not being executed as per approved plan of management, plan may be reviewed. Sometime re-planning is done to achieve the desire objective of the project. Execution process also involves coordinating people and resources, as well as integrating and performing the activities of the project in accordance with the project plan.
- d) **Monitoring and Controlling Process of Project** : In Monitoring and Controlling, project is monitored based on the approved plan. For timely completion of the project, it is required to track, review, and regulate the progress and performance of project. Monitoring and Controlling Process of Project, we also control the scope, schedule, cost & quality of the project. Any such changes like scope, cost, time etc of project is monitored and controlled in this cycle.
- e) **Closing Process of Project** : After completion of project, in closing process we compare the actual benefit with benefit envisaged during the planning of project. We also calculate the financial aspects of the project in terms of IRR, NPV, payback period etc.

The above five cycle are independent and no any cycle begins until the prior cycle is complete, and each cycle completion is terminal, does not allow you to return to a previous cycle. The only way to revisit a phase is to start over at phase. This is also called as waterfall project management system.

III. ADAPTIVE PROJECT MANAGEMENT

Project is time variant dynamic system, it is implemented in real time in specified project life cycle. Project life cycle having five phases i.e initiating process, planning process, execution process, monitoring & controlling process and closing process. Project management system may be considered as multiple input and single out time variant dynamic system.

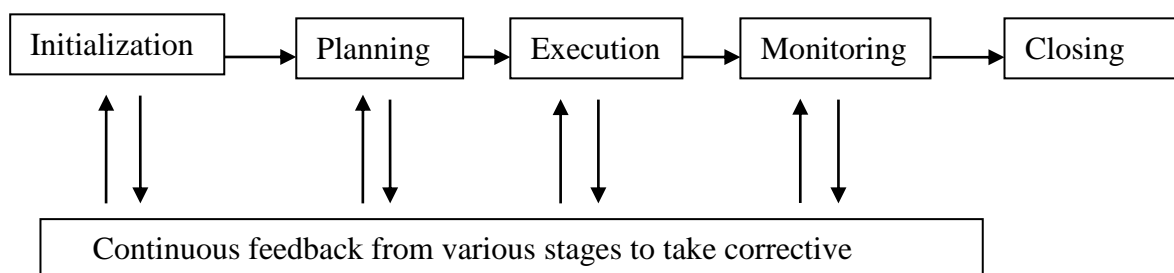
In ideal case of project management system, we assume that there is no delay and project is implemented in real time with optimum utilizing of recourses to avoid cost overrun. But in many cases it has been observed that project is getting delayed due to various reasons attributed to the contractor, consultant or employer. These delays may be controlled by controlling the dynamic behavior of the project parameter, which is getting changed due to some internal or external changes occurred in the system. Delay in any project having time over run and cost overrun and these overruns directly impact on project management system. To avoid such delayed, dynamic of the project which has caused the delay has to be monitored in regular manner and a

system to be developed to record and nullify such delay to avoid cost and time over run and complete the project in stipulated time frame.

Adaptive project management is a powerful framework for project management having continuously a vision to improve the decision and practices learnt from the outcomes of previous decision for structured and systematic system[9]. The advantage of Adaptive Project Management is thus that it provides a framework for better management since the project team can systematically test assumptions and strategies.

IV. ADAPTIVE PROJECT MANAGEMENT MODEL

In current world business scenario due to change in business climate, where needs are frequently changing and project team is not ready to adapt unwanted changes. So, in order to sustain in the global market, it is necessary to adapt such unwanted changes by project team to achieve desire goal. Adaptive project management is the tool, where we can easily cope of such changes to achieve desired goal.



Adaptive project management (APM) adapt the changes occurred due to unknown factors and prepare the project team to avoid any risk. Project team learns from the output of project cycle and accordingly changes are made in any stage of project cycle to achieve desired goal. Frequent feedback not only helps to achieve the desire goal but also its help to reduce the time and cost overrun.

V. ADVANRAGE OF ADAPTIVE PROJECT MANAGEMENT OVER CONVENTIONAL PROJECT MANAGEMENT

- Plan is picked and changed as per current iteration.
- Minimize the risks.
- Minimize the time & cost overrun.
- Applicable for non liner system.
- Involvement of customer is in entire project cycle.
- Customer satisfaction Index is maximum.
- Overlapping of project life cycle is possible.
- Increase the team productivity.
- Improve the decision making capacity of the entire project team.
- Better working environment to execute the project.
- Improve chances to achieve desire result.

VI. CONCLUSION

Vision of industries is getting changes as per global market scenario. Now a day's sustainability of the companies in the market depends upon customer satisfaction and their product. Demand of the products is also getting changes as per requirement and these changes force company to set up new unit with new vision. Project management is nothing just its convert such vision in real time and met the market demand. Predictive project management help to introduce new idea met market demand. Predictive project management sequential in nature and unable to take feedback in each stage of project cycle, causing time and cost overrun but in adaptive project management having advantage to take feedback from project life cycle and mitigate the unwanted risks. Adaptive project management is better option to minimize the risk and reduce the time and cost overrun resulting better response in Industries..

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