

Critical Analysis of Project Planning and Execution in EPC (Engineering Procurement And Construction)Projects

Scholar Kapa Lakshmikantha Reddy,
 Registrar Professor Dr G. R. Selokar, (Supervision)
 Department of Mechanical Engineering, Sri Satya Sai University of Technology & Medical Sciences
 Sehore, Bhopal, M.P, India,
 Enrollment No: SSSME1523

Abstract- The other complicating factor is that the largest portion of an EPC project (construction) is also the riskiest. Engineering and procurement have their risks, but they cannot begin to compare with the magnitude of uncertainties that frequently characterize construction projects. Even with the best outlook for events that may impact a construction project, there are often areas of risks that cannot be envisioned or fully quantified. These “soft” areas can lead to significant cost and schedule impacts in the middle of construction. A high potential for unforeseen problems exists, and costs can vary according to conditions. The remoteness or small footprint of construction sites can also be challenging. In addition, construction schedules are often getting tighter. This is due to the need to bring a project online as soon as possible, along with the overall project schedule being over-expanded during the engineering and procurement phases.

Keywords:- Project Performance;EPC projects; triple constraints; TQM etc.

I. INTRODUCTION

One of these patterns is gotten from the Toyota Production System (TPS) that is searching for waste minimization, exertion amplification, and secure benefit to end clients. TPS has started from the methodology which is called Lean Production (LP). The universal gathering for lean construction distinguished lean construction(LC) to characterize a technique to design and actualizing construction exercises to limit squander in construction industry as far as time, cost, and quality [13].

Not with standing LC, there have been different methodologies towards better management of construction projects including selection of Total Quality Management(TQM) ,which is a management hypo thesis concentrated on improving an associati on's capacity to convey quality to its clients on a consistently improving premise. Six Sigma and ISO 9001:2000 can likewise upgrade the association's proficiency by decreasing the quantity of deformities

interconnections between engineering disciplines are described, and the fundamentals of project procurement management and administration, logistics, bidding and contracting are reviewed. In the interim, the prioritization of these components and their association with project execution have likewise not been examined. In this way, this examination means to recognize and organize the components that influence construction project management triangle (CPMT) concerning project stages (EPC)in developing expansive scale private structures.

Project Phases					
	Pre-project	Development	Construction	Testing	Operation
Time period	Variable	2-3 years	1-5 years	1-6 months	Up to 20 years or more
Activities	Initial development	Feasibility study Partner search	Site work Fabrication	Start up, Testing Provisional acceptance	Commercial operations
	Identify a project	Form project co Financing negotiations	Erection		Punch list Final acceptance
	Request for authorisation	Designs			Maintenance
	Go ahead approval	Bid, procurement			Transfer Liquidation
Costs	Pre-development cost	Development cost and expenses Financing costs	Construction costs	Commissioning adjustments	Operating expenses Fuel Maintenance
Revenues	None	Receiv from partner?	Development fees	Operating revenues	Operating revenues Equity sell down

Fig 1. Phases Involved in a Power Project.

The assets look fundamentally to the money streams from the project as the wellspring of assets to support their advances and give the arrival of and an arrival on their value put resources into the project". Project account(or project financing) includes playing out a lot of security courses of action to diminish hazard in vast infrastructural ventures. It is a sound method that has made an achievement of running capital concentrated.

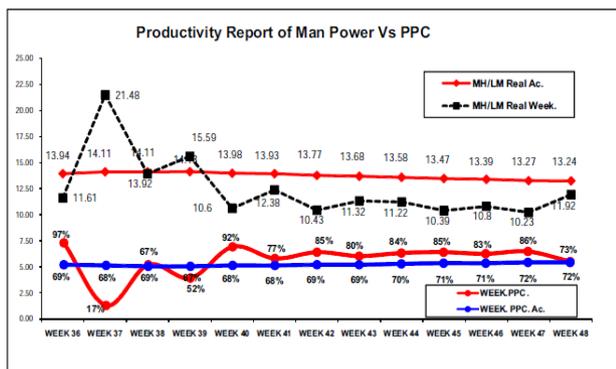


Fig 2. Correlation between Production Reliability and Labor Productivity.

A business will be done in the event that it doesn't roll out any improvements in its approaches as indicated by market necessities. Thus, it is important for an association to realize what sort of changes are going on in the market; with the goal that it can like wise adjust as indicated by the changing condition and endure.

TOPSIS is a successful technique for investigating and positioning choices and utilizations the Net Concordance(NC) esteem from the best arrangement and Net Discordance(ND) esteem from the most exceedingly terrible arrangement. TOPSIS simultaneously considers both NC and ND separations.

II. LITERATURE REVIEW

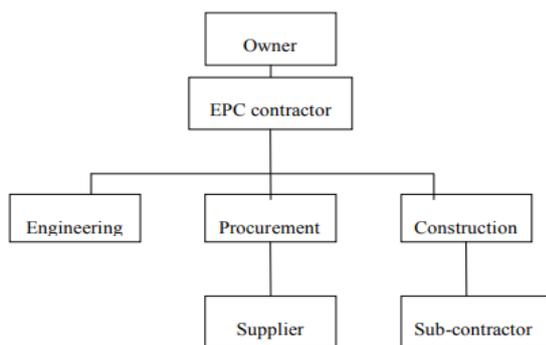


Fig 3. Engineering – Procurement – Construction.

This framework has for some time been utilized in the West, and it has been grown well. So it was called Traditional Approach. In the mean time the project is separated into little individual parts for construction.

To common open tender projects, the construction contract usually goes through two main phases: the establishment of the contract and the implementation phase of the contract. The establishment of the contract phase has two processes. These processes are bidding and contract negotiations. The implementation phase of the contract also has two phases.

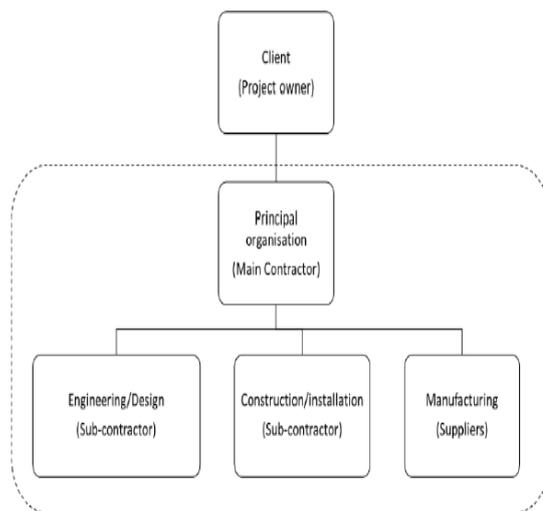


Fig 4. General EPC organization.

EPC-projects to all the more likely comprehend the specific circumstance. Also, is the expression "guarantee" displayed and characterized, together with unique excellence of significant terms and idea, trailed by research around case management and issues identified with case management.

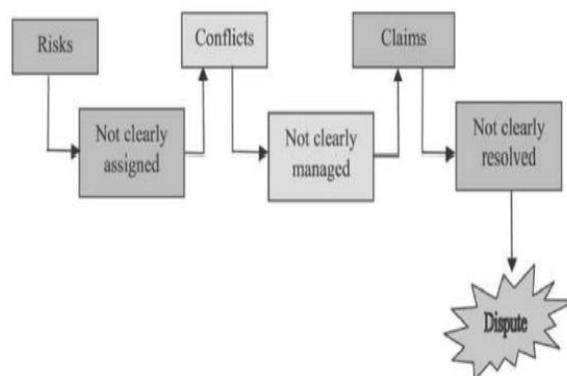


Fig 5. Risk, conflict, claim and dispute continuum model.

III. OBJECTIVES OF RESEARCH

The business has been accusing the 'arrangement loss of motion's of the administration services for back off of different projects. The real bottlenecks experienced by the business are the issues relating to project take-off credited to arrive obtaining and ecological clearances, delays because of administrative changes, uncertainties and so forth.

IV. RESEARCH METHODOLOGY

There is tremendous literature on project management as a rule/and on modern reject management specifically, in India and Sudan. Accentuation in this area will be made on the most pertinent material. Different references, in any case, might be alluded to in ensuing parts at whatever point felt fundamental, Utilizing fluffy guess and organization, the connections between hazard sources and the results on project execution measures can be recognized and evaluated reliably.

S.Ebrahimnejad et al. recognized the note worthy dangers in construction industry projects and presented some powerful criteria and properties utilized for hazard assessment in the construction business. Fluffy TOPSIS (Technique for Order Preference by Similarity to Ideal Solution) and fluffy LINMAP (Linear Programming Technique for Multidimensional Analysis of Preference) strategies are introduced to assess the high dangers in the projects.

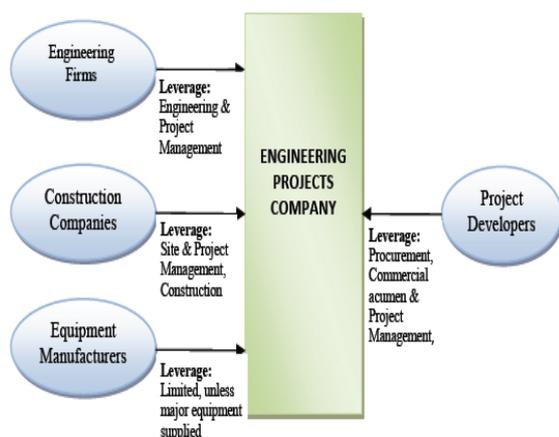


Fig 6. Expansion routes to projects industry.

Proposal for the most part applies a subjective system, yet additionally utilizing components from quan

titative research, it could be seen joining the two techniques. The technique for this postulation could along these lines be considered as a blended strategies inquire about. Blended techniques look into is inquire about that joins strategies from both subjective and quantitative methodologies.

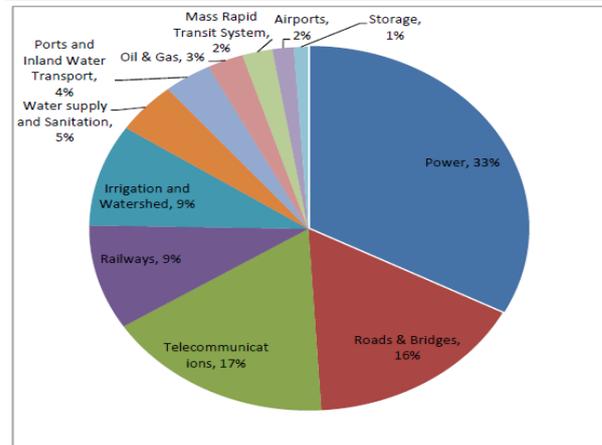


Fig 7. Planned Investments in Infrastructure in the 12th Five Year.

The medium size organizations thusly, get the genuine work helped out through littler sub-sub contractual workers who further disseminate the work to little work temporary workers offering explicit aptitudes at neighborhood level.

Recreation or arranging comes closer from Operations Research, for example, asset compelled project booking with the outstanding asset obliged project booking issue(RCPSP) incorporating the booking just as asset assignment process, speak to a suitable option in contrast to arranging strategies, for example, CPM, MPM and PERT.

V. DATA ANALYSIS AND VALIDATION

Arrangement methodology for the RCPSP and its augmentations are isolated into careful calculations, and heuristic methodologies. Since the RCPSP has a place with the class of NP-difficult problems¹⁴, careful calculations are generally created to produce benchmark answers for issue cases past true applications. In correlation, heuristic systems focus on giving a productive strategy to ascertain an acceptably decent arrangement inside a sensible computational time. For the most part, heuristic methods contain need rule based heuristics, meta heuristics (e.g. reproduced toughening, tabu hunt and hereditary calculations), just as different heuristics,

for example, truncated branch-and-bound techniques and disjunctive curve based strategies. The proposed arrangement methods in writing are most ordinarily connected and tentatively examined dependent on a lot of benchmark test occasions, for example from a project booking library (PSPLIB)

VI. RESULTS

Accordingly, a mix of the RCPSP and its expansions together with project arranging techniques, for example, CPM, MPM or PERT could fundamentally build the execution of construction projects. To fittingly coordinate asset obliged project arranging into current project arranging systems in construction, a various leveled project arranging approach was created.

In the proposed progressive arranging approach the goal of strategic project arranging is time situated; I.e. centers around the early project complete and can be sought after with basic arranging approaches. Conversely, the RCPSP is reasonable for an increasing lively gritty anticipating.

The operational premise of the project and its sub projects considering different particularities and various goals relying upon the setting of the project, for example for construction projects.

This agreement is like the first aside from that a similar contractual worker will do the two stages. On the fruition of the essential structure bundle, the proprietor and contractual worker arrange the contracting approach for the execution of resulting stages. Globalization of the construction business has brought remarkable issues and difficulties, for example, mix of project groups from various nations.

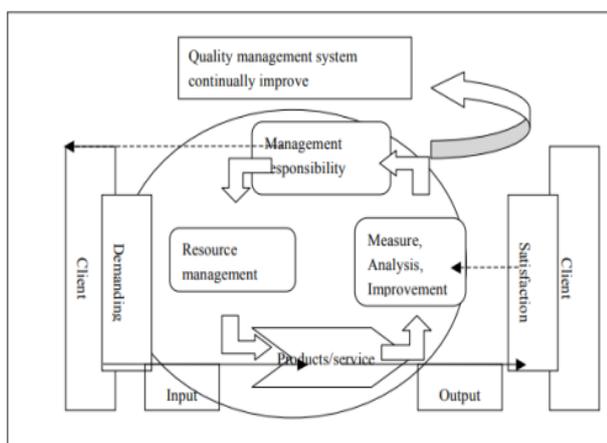


Fig 8. Quality management system.

VII. CONCLUSION

The two gatherings receive rewards; the panel will almost certainly complete the project and temporary worker can remove a size able measure of cash as benefit.

In the event that the recipient council did not turn to this technique, the project will stay deficient for a significant lot of time. Hence forth, to maintain a strategic distance from this danger ,unwinding ought to be made in the laws concerning the qualification of the convener of the recipient advisory group, particularly among the more fragile segments of the general public.

Thus clear directions must be given by the legislature to the panchayats in such manner. Legitimate preparing must be given to the general population occupied with the readiness of projects each year.

The most significant part of planning. Be that as it may, one of the principle explanations behind the overflow of projects is the deformities of the actualizing office. Subsequently legitimate consideration ought to be taken by the panchayat before taking a choice on the executing office of the project.

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