Turkish Online Journal of Qualitative Inquiry (TOJQI)
Volume 12, Issue 9, August 2021:1027-1036

AN IN-DEPTH ASSESSMENT OF PROJECT MANAGEMENT SUCCESS FACTORS USING TOOLS AND TECHNIQUES

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ABSTRACT

The purpose of the suggested article is to look at project release factors, as well as project management methods, and see whether they are connected. Discoveries reveal certain pieces of information when instruments and methods are used. Directly related to the amount of effort invested on the board apparatuses and the number of danger instruments was the number of variables studied. Assembled in this way, it is OK to utilize devices from one of these characterizations as a means of reporting, while instruments from the other classification should be used as a guide. When the use of project management tools was compared with the use of data correspondence innovation tools and risk management tools, the amount of unpredictability exhibited was smaller. Investigation concludes that project supervisors and the association need to know about project success criteria, decide on the most appropriate tools, and then integrate them into project papers/specifications and requirements, no matter where these documents are. In other words, research has shown that having consistent support for these behaviors across subsystems, along with better outcomes, are connected. The team developed a subjective approach to determine which tools are often seen as crucial for development, and the following formed an essential component. contingency plans, progress reports, quality plans/inspections.

Keywords: Project Management Company, tools and techniques, project success

1. INTRODUCTION

Project achievement, is worried about decisions about the results of a project, and project management (PM) achievement is about the effective delivery of a project. In any case, decisions about the achievement of an individual project are not really the equivalent across the two viewpoints. A project viewed also managed may neglect to convey the expected results and an ineffectively managed project can at present be equipped for conveying achievement, however quite often at a cost. It is likewise the situation that diverse project partners may have shifting (even polar) sees on levels of achievement and that their impressions of

accomplishment may change after some time. This is nothing unexpected given judgments about progress and disappointment fuse objective and abstract execution segments and incorporates explicit and dubious results.

The discoveries of two earlier examinations will be reached out to investigate enlightening and correlation measurable practices and related connections between project achievement factors, PM tools, PM software, and PM methods in the conviction that find out about PM methods, techniques and tools can assist associations with being increasingly fruitful in project delivery. We recognize that these are fundamental measurable discoveries on the grounds that the first review tended to various parts of the connections between progress factors and tools, software and methods. Furthermore, the little example size restricts the specialists from leading multivariate investigations.

We start with a writing audit on project achievement, methods, tools, and techniques, just as participation and control rehearses. At that point we layout our measurable examination approach as applied to the Fortune et al., informational collection (2011) to expand those overview discoveries of "real world" encounters of experts in PM.

The subtleties gave in writing propose that a well-created PM gives a different advantages. The PM was seen as more powerful than the conventional management works yet just set number of confirmations is accessible to demonstrate its advantages. The Project Management Institute (PMI) plays out a profound learning in PM, for a range of 4 years by including the contextual analysis of 65 associations from 14 distinct nations. This investigation was performed to distinguish the worth conveyed by the PM to an association. The worth recognized by the PMI was seen as a culture subordinate, its execution procedure should 'fit' with the necessities of an association, and various inquiries were raised in regards to its supportability. This investigation demonstrates that both generous and pitiful advantages were created by PM. This proposal was concurred by countless scientists, yet the PM esteem was different for a few works.

2. RELATED WORK

A lot of studies and exploration materials were created regarding the matter of progress with an extension to inspect the exact connection among's prosperity and the influencers of accomplishment. For instance, a relationship was built up between venture achievement and the authoritative structure of the association conveying the task (Gray et al 1990) – for example useful, network, projectized (Gobeli &Larson 1985). Undertaking achievement has likewise been tried against the presence of some specific administration structures inside the association, for example, the presence of a controlling board of trustees that deals with the procedure and adjusts assets to ventures in like manner (Lechler and Dvir 2010). Different

examinations connected accomplishment to the capability of the hierarchical obtainment systems (Morledge et al 2006). Furthermore, some others, like the extent of this paper, connected it to the effective usage,andthe authoritative help, for the best possible task the board apparatuses and procedures (White and Fortune 2002; Besner and Hobbs 2006; Besner and Hobbs 2008).

The system of this writing audit follows on Besner and Hobbs (2006) research, which overviewed and explored a huge example of venture directors and the apparent estimation of undertaking the board practices to extend achievement. The example of his exploration included 753 undertaking administrators working in different ventures andof a different task sizes. Table 1 sums up the 70 devices and methods utilized in Benser and Hobbs (2006) concentrate in a plummeting request contingent upon their normal use and impression of their significance. These 70 things have been generally gathered from the PMBOK Guide in its different releases.

Table1 : Project management tools

From Limited to Extensive Use	From Very Limited to Limited Use	Less than Very Limited Use
Progress report	Contingency plans	Life Cycle Cost ("LCC")
Kick-off meeting	Re-baselining	Database of contractual commitment data
PM software for task scheduling	Cost/ benefit analysis	Probabilistic duration estimate (PERT)
Gantt chart	Critical path method and analysis	Quality function deployment
Scope statement	Bottom up estimating	Value analysis
Milestone planning	Team member performance appraisal	Database of risks
Change request	Team building event	Trend chart of S-Curve
Requirement analysis	Work authorization	Control charts
Work Breakdown Structure	Self-directed work teams	Decision tree
Statement of work	Ranking of risks	Cause and effect diagram
Activity list	Financial measurement tools	Critical chain method and analysis
PM software for monitoring of schedule	Quality plan	Pareto diagram
Lesson learned/ post-mortem	Bid documents	PM software for simulation
Baseline plan	Feasibility study	Monte-Carlo analysis
Client acceptance form	Configuration review	
Quality inspection	Stakeholder analysis	
PM software for resource scheduling	PM software for resource leveling	
Project charter	PM software for monitoring of cost	
Responsibility assignment matrix	Network diagram	
Customer satisfaction survey	Project communication room (war room)	
Communication plan	Project website	
Top-down estimating	Bid/seller evaluation	
Risk management documents	Database of historical data	
	PM software multi project scheduling/leveling	
	Earned value	
	PM software for cost estimating	
	Database for cost estimating	
	Database for lessons learned	
	Product Breakdown Structure	
	Bidders conferences	
	Learning curve	
	Parametric estimating	
	Graphic presentation of risk information	

3. PROBLEM STATEMENT

So as to improve the odds of accomplishment, associations will in general put vigorously in some venture the executives devices. They consider that this speculation goes towards guaranteeing supportability and helped development for the association. Undertaking administrators then again, may not matter these apparatuses suitably and utilize these practices (when joined with methods) on impromptu premise. They appear to not completely understand the connection among devices and achievement. Subsequently venture chiefs burn through their – and their assets' – time and direct the association into putting their interests in an inappropriate pockets of devices. A dashboard that is generally introduced to the executives may help with guaranteeing the best possible and ideal use of the significant and chose devices.

4. PROJECT MANAGEMENT TOOLS

The PM tools are introduced to perform the planning process effectively. These items were viewed to plan, monitor, progress, determining critical paths, and smooth execution of projects.

a) Network diagram:

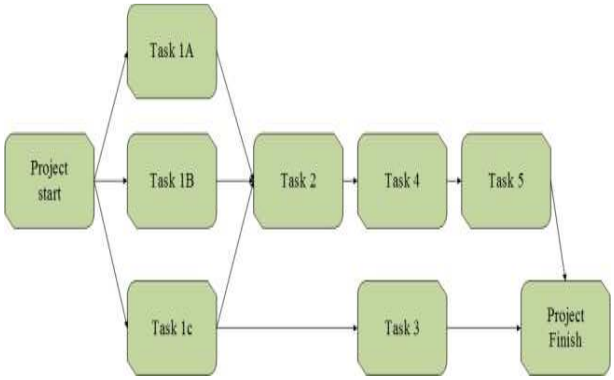

Figure 2: Network diagram

The most important PM tool used by project manager for planning process was network diagrams [29]. This network diagram was also represented as an “Arrow” diagram because the actions performed by the teams were connected by arrows.

b) Critical Path Method (CPM)

The important planning tool used by project manager was CPM or Critical Path method. It was used to observe the project development to make confirmation regarding the projects schedule [30]. The project manager has the right to divert the resources from other critical path independent actions into the critical path activity to make sure that there was no delay in the entire project.

c) Program (or Project) Evaluation and Review Technique (PERT)

The abbreviation for the Program (or Project) Evaluation and Review Technique was PERT. This PERT is a kind of Network Diagram PM Tool [31]. The PERT identifies the projects critical path. The

Network Diagram includes one estimate but PERT contains almost three kinds of evaluates for each activity duration.

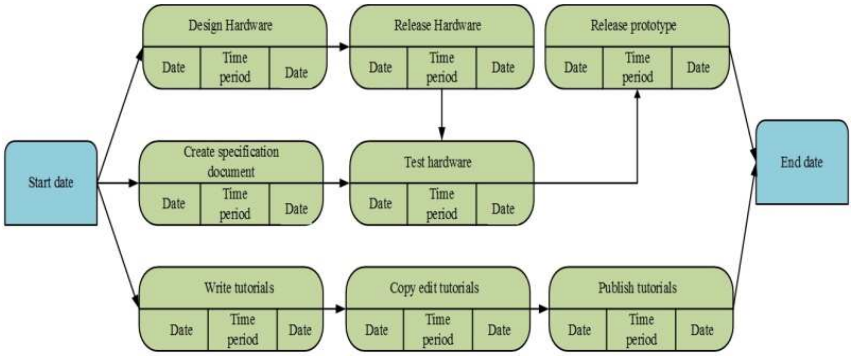

Figure 3: Analysis of Program (or Project) Evaluation and Review Technique (PERT)

The first estimate of PERT was an optimistic estimate and it was pronounced as T-O. In order to perform the task in favor of activity, all the factors that affect the activity should be considered by an optimistic estimate.

The second estimate was “most likely” estimate which was pronounced as T-M. The final estimate obtained by PERT was “pessimistic” estimate (T-P) and it was represented as tp. This estimate does not worry about the mistakes that obtained during the execution process.

d) Project management Gantt chart

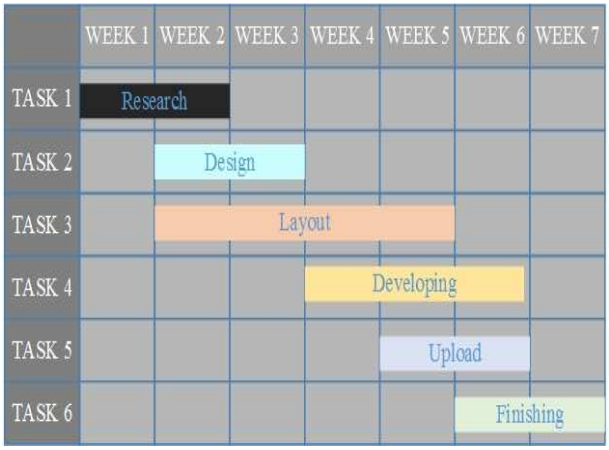

Figure 4: Project management Gantt chart

The Gantt chart was first introduced by Henry Laurence Gantt in 1910 [20]. The planning and controlling process of project, and the various activities performed to develop the projects were scheduled in this Gantt chart. The Gantt chart was considered as a best planning tool for project as it uses the bar chart to represent the project schedule.

e) Work Breakdown Structure

Work breakdown structure or WBS, was a delivery oriented hierarchical breakdown of work. It was also used as a planning tool for project to describe the entire range and also, the essential deliverables needed for the project was identified [32]. The stakeholders can understand the project scope, after getting the detailed information provided by WBS regarding the project deliverables. The project team performs the task with this available project deliverable information.

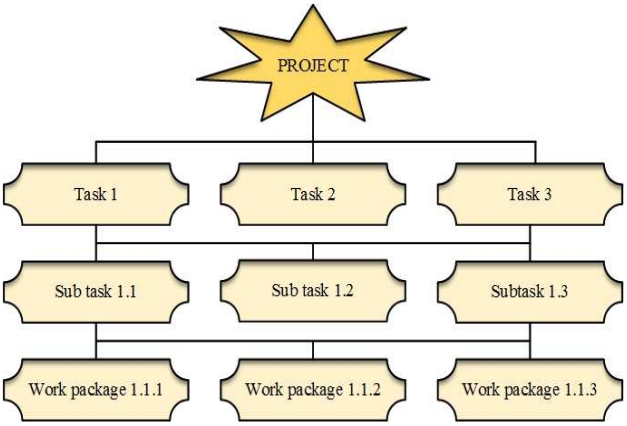

Figure 5: Simple work breakdown structure

Table 2: Analysis of tools in project Management

References	Technique used	Outcome	Advantages	Disadvantages
Browning TR, (2014) [33]	Process architecture framework (PAF) with additional three views called concern-view alignment (CVA) Allocation Map	This work provides Deliverable (Work Product) Inspector Form, Activity Inspector Form and Resource	1. CVA directly indicate the alignment of the project 2. There is no parsimony for views 3. It does not require sophisticated algorithms to automate its display	Synchronization is needed across the organization, to see and support their decisions.
Yang S (2014) [34]	A multi-project schedule method based on task priority, evidence reasoning (ER) and critical chain (CC) approach.	It composed of a decision model, an organization model and two axioms.	1. Eliminate multitasking problem 2. Control the uncertainty of multi-project 3. According to task priority, it can resolve the problem of resource competition in multi-project 4. Efficiency of resource utilization has improved 5. It helps to finish the projects of multi-project within a short span of time	Multi-project resource scheduling cause bottleneck due to the insert of new projects having different delay priority
Dao B, (2016) [35]	Excel-based "Complexity Measurement Matrix"	This comprises of the indicators that are statistically significant to project complexity	1. Easily distinguishes the projects based on its complexity using a set of complexity indicators 2. It provides the strategies to manage a project's complexity during execution	The complexity indicators needs to be verified statistically

5. TOOLS STUDY ANALYSIS

The four super apparatuses saw as both broadly utilized and with high natural worth (to improve venture achievement) were programming for task booking, scope articulations, prerequisites examination, and exercises learned/post-mortems.

Devices and practices that got high scores for use however that did not have the possibility to improve venture achievement included advancement reports, kick off gatherings, Gantt outlines, and change demands. Besner and Hobbs deciphered this as a sign that these devices and practices were as often as possible utilized and had arrived at their maximum capacity.

While a few apparatuses and practices were considered to have a low inherent incentive to improve venture achievement and were under utilized, the ones esteemed to can possibly improve venture achievement included programming for recreations, basic chain strategies, esteem examinations, and quality capacity sending.

Under-used devices with a high capability of upgrading venture achievement included databases for exercises scholarly, chronicled information, chance, quotes, and agreements, multi venture planning programming, and cost observing programming.

6. CASE STUDY RESULTS ANALYSIS

Five PMP certified project managers' with 15 years of experience, as a minimum criterion, in managing engineering projects were interviewed. The set of semi-structured questions which was developed as part of the literature and the methodological framework was used during the interviews. Each interview lasted for one to one and a half hours. The interviewees were given the full opportunity to expound regarding the matter inquiries, give models and express their own emotions dependent on their experience towards any inquiry thing.

Project Manager PM2 had an intriguing definition for venture achievement, which exuded from his "knowledge the executives" foundation. He estimated the advancement in the group abilities and skills during and in the wake of accomplishing the venture results, thinking about it as a piece of task achievement. Such information, as he guarantees, will help the group in executing future comparative undertakings and will fortify the association's key situation in the commercial center, and will ensure future victories and bring customers back.

The triple limitations of cost, time and extension have been concurred on by all exploration members as the prime proportions of the momentary venture achievement. Concerning the drawn out venture achievement; a large portion of the undertaking administrators connected it with the general accomplishment of the association, its development and advancement. Project Manager PM1 included that venture achievement rules ought to be resolved at the beginning of the task, he underlined that such measures ought to be conceptualized with the undertaking group and partners. The result of this meeting to generate new ideas "will decide the best possible achievement rules for the venture being talked about, the undertaking chief will at that point need to conform to it whether it ought to incorporate long haul benefits for the association or not".

7. DISCUSSIONS

Present moment and long haul venture achievement measures are not fundamentally unrelated, as guaranteed by Project Manager PM4. Albeit each has various devices and procedures to accomplish, it has been declared by this member that venture transient achievement may influence the drawn out progress and the other way around. The instruments and methods that can influence venture execution over the long haul are: partner investigation, venture sanction, information base of evaluations and plausibility concentrate as concurred between PM2, 3 and 4. PM 5 added to them exercises educated and customer acknowledgment frames as they can be utilized for showcasing purposes and to use the relationship with other planned customers.

Hierarchical help for venture the executives devices and procedures is great yet not an unquestionable requirement to ensure the accomplishment of its tasks. Task Manager PM1 anyway didn't concur with the association's need to help basic apparatuses to improve achievement guaranteeing that such devices are anything but difficult to make, and, as in this manner, can be bolstered by any accomplished undertaking supervisor. Other venture administrators demanded that an undertaking chief ought to continue a base measure of involvement with request to help those required apparatuses without the help of the association.

8. CONCLUSIONS AND FUTURE RESEARCH:

The PM's triple T method was enhanced by numerous evaluation process with changes in focuses, approaches, and perspectives. The extraordinary performers in PM's field were gathered as a group for policy-making and parliamentary. After that, these particular persons from the corresponding industry and academy were selected by researchers. This review provides a proper clarification regarding the variations that acquired between the PM's triple T. The Tools Assessment (TA) performs its evaluation process by utilizing the techniques of both analytic and integrated impact approach. The multifaceted and more holistic research methodologies were employed by TA's policy formulation method, but the private sector apply the existing operational methods.

One of the most developing areas in PM was TA, because an enormous amount of challenges and issues were applied to the researchers by TA. It made the researchers explore a numerous TA studies to invent new methods for TA. This review also enhances the triple T approach by developing new methods for development and modification.

Future Research: Our review realizes a large number of restrictions due to the creation of a team in an educational environment. The upcoming research was performed on Emergent Theory to analyze its application in "real world" projects. For example, the standard organization policies limit the collection of a various tools. These limitations were taken into consideration by the researchers to perform the "real world "projects.

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