

Agile Project Management: Feasible Methodology in Construction Industry

Aakanksha Ingle

Abstract- *The business characteristics in the construction environment has changed considerably over the previous 2 years because of rapid changes in info and construction technology, changes in market conditions, improved consumer needs (i.e. fast response, lower fees, greater customization etc.), item proliferation with uncertain and shorter life cycles, intensified off shoring and outsourcing methods, and improved competition from local to worldwide arena. This paper research on AM is actually centered on improving the systematic methodologies to study. The Scrum method designed for software development sector has to be defined to comply with construction business first. Artifacts, events, and the roles of scrum framework shall be connected to the stakeholders, group meetings, and documents applying in the construction business. The developed model then supported to the conduct the case study. The study was conducted to the donor funded task that is sealed the time and project budget with its top limit.*

Index Terms: *Keywords: Agile, technology, Management, construction, industry, etc.*

I. INTRODUCTION

Agile task techniques and construction work management may look an odd couple. The Agile development which began in the application business spun around always checking and adjusting the expectations to changes in the business. Without the same constraints as physical constructions (there is actually no gravity inside computer systems, for example), the program could be built up and built out with extensive flexibility. Construction should still follow much more strict methods, like just constructing the third floor once the 2nd floor is completely solid.

- **People and associations** over procedures and devices: Customer and group correspondence are a higher priority than having the procedures and instruments characterize the work process of Agile.
- **Working software over comprehensive documentation:** Rather than concentrating predominantly on documentation, accentuation is moved to the output of the project

The construction work regularly includes various all around arranged stages executed consecutively. In spite of the fact that by and large, Waterfall approach is the best, it neither leaves room that is much for steady improvement nor compelling change in the construction industry. By

Revised Manuscript Received on December 22, 2018.

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executing Agile system directly from the arrangement stage can help spare cost and time in the long haul. Regardless of whether it's anticipating materials, enlisting work, getting plans endorsed and testing for quality confirmation, disseminating the work program into dashes with characterized excesses is really a viable strategy to kick start some development venture.

An article relating Agile with development venture the executives that a week by week work program in development has a lot of similarities to a cycle or perhaps run in the Agile structure. It organizes and plan tasks, measure and screen progress, with persistent improvement for future usage. He further includes that the week after week work program is additionally equivalent with reference to day by day scrum gatherings and customer inclusion in website review.

Aside from characterizing how you can separate exercises and make time interims for project completion, Agile task executives devises jobs to supervise the procedure. These jobs involve: Product Owner, The advancement and scrum Master group. The strength of Agile lays in its capacity and flexibility capacity to change different parts of work designs in some different systems into those of Agile.

II. OBJECTIVES

- To establish the applicability of scrum meeting in construction project management.
- To establish the applicability of scrum roles in construction project management

III. LITERATURE REVIEW

Pareliya, Maulik. (2018) At present, project management is actually a really discussed topic. The way of project management methodology hasn't changed significantly from 60's. In various sectors, construction sector, technology, and the way project are actually procured today has changed. This scenario leads to a problem, in which a managerial perspective and the way in which construction projects are actually executed have a big gap in between. This the cause to change and searching for new project management approaches in future. Essentially, the agile project management strategy is actually used from IT department, from in which it's grown through empirical processes. It's primarily suited for complex tasks, where it's tough to specify requirement and final deliverables in advance. It's used by as many industries other IT department, where are in the position to identify the issues by continuous improvements and repeated tests.

Blessie John (2018) despite the fact that the Construction project management is slowly building up, the construction business with the particular attributes of its is really facing the time cost overwhelmed during the execution Through literature feedback, it's been discovered that delay in design documents & change orders during construction are actually ranked high in causing delays. Agile Management that is also known as 'Change management' with its principles belonging to IT industry is actually launched into construction's execution phase. Unstructured interviews and information collection is done to recognize the perspective of different professionals in this particular area. With an ultimate goal of supplying tasks on time, within estimated price and approved work orders, an Agile's framework for execution phase is actually established. Also as in IT business, the framework of Sprint meeting is put together to relieve the performance to get successful outcomes in the construction project management discipline.

Roy S. Moriel (2017) has found that essential changes have occurred in execution, arranging, and task improvement, for example different task the agile approach to deliver things, as opposed to utilizing the traditional approach. Utilizing agile has been fruitful as a major part of the IT world includes incorporated it inside the organizations of theirs.

IV. RESEARCH METHODOLOGY

Application of agile management is actually unusual or perhaps no in the construction business. The word nimble management is additionally a new word to the construction business. The stakeholders aren't been in a position to share the point of theirs of view on scrum and agile. Therefore the direct information sourcing is not sensible from construction industry regarding scrum method. The Scrum method designed for software development sector has to be defined to comply with construction business first. Artifacts, events, or the roles of scrum framework shall be connected to the stakeholders, group meetings, and documents applying in the construction business A researcher is able to choose a mono method, Mixed method or maybe Multi method from above in order to achieve his/her objective

V. DATA ANALYSIS

The intended expectation of this section is usually to determine the connection between scrum method's pieces and the case study's activity. As literature explained the scrum version has 3 parts called Artifacts, Events, and Roles. The stakeholders, group meetings, and documents referred in the case study are almost akin to those scrum components as describe in following paragraphs.

Artifacts

As per literature scrum has 5 major Artifacts known as Product Backlog, Sprint task, Sprint Backlog, Sprint burn down Product and chart burn down chart. The case study project was in a position to handle 3 major similar artifacts as shown in Table 1.

Table 1: Relationship

Scrum Artifact	Project Artifact
Product Backlog	Construction prioritized list
Sprint Backlog	Element to implement
Sprint Task	BOQ Element to complete

As discussed in the scrum roles presently there are actually the product owner, Scrum team and Scrum Master. The client, Consultant, and contractor had been the main 3 parties of the case study project. The contractor appointed a project manager to represent him. The senior technical officer from the urban council was appointed as a prospect representative and consultant staff was there. The appointed stakeholders are agreeable with scrum roles though the job of appointed stakeholder appears to be changed at the various circumstance of the project.

VI. RESULT ANALYSIS

This subsection is actually centered on analyzing the information collected from a questionnaire survey and covers the results obtained. There's seventeen respondents reply to the questionnaire via 3 responding means of internet survey web facility, Emails and on table discussion. The very first areas of the questionnaire are showing the participant's private details to verify the appropriateness to perceive the ideas of theirs to our survey. The examination isn't needed for those data. All of the respondents presented their academic and professional qualification as per the following table.

Table 3: The Respondents summary

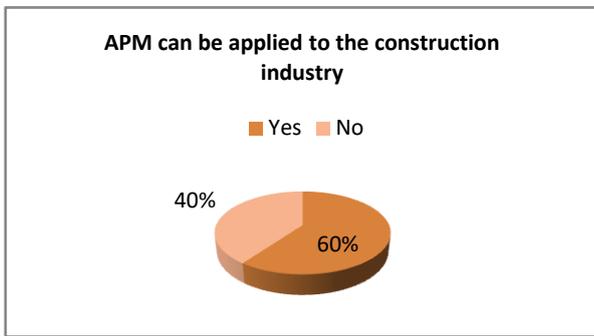
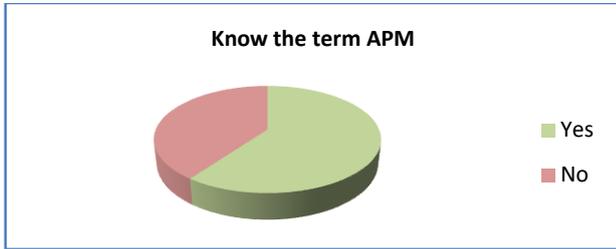
Academic Qualification	Diploma	Bachelor Degree	Master Degree	Doctoral Degree	Other
Professional Qualification					
Chartered Engineer	-	2	5	-	-
Engineer	-	1	3	-	
Chartered Architect	-	-	4	1	
Architect	-	-	-	-	-
Chartered Quantity Surveyor	-	-	1	-	-
Quantity Surveyor	-	-	-	-	-
Other	-	-	-	-	-

Table 4: Respondents representing party

Representing party	
Client's Party	2
Consultant's Party	6
Contractor's Party	9

A. Awareness of Agile Project Management (APM)

The participants to the survey is actually examined and discovered that 5 out 17 respondents heard About agile project management word, 03 out of 05 said that APM will be useful.



The all 17 participants were aware that the program first and using 2nd is actually the standard job management practice in construction projects. Additionally, they all point out that the task scope has to be repaired prior implementation. 9 out of these 17 agree that in most development projects the project scope is actually changing while implementing. Additionally, the 16 respondents say that if any changes of scope are substantially affected by the project cost and project time. Additionally, all 17 respondents agree that the consumers are concerned about exceeding project spending budget and time

Question No	Description	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
	General	-	-	-	-	-
1	Plan first and implementing second is the general practice in construction industry	17	-	-	-	-
3	The scope of the construction project is needed to be fixed prior implementing	17	-	-	-	-

5	Although the scope of most construction project is changed while implementing	-	9	-	5	3
6	The scope change significantly influence to change the construction time	11	5	1	-	-
7	The scope change is significantly influenced to change cost of construction project	11	5	1	-	-
8	The clients are mostly worrying about the exceeding project cost and project time	13	4	-	-	-

As per the above respondents the construction industry is actually dealing with the scope change in number of circumstance and it might have an effect on the construction time and price that is a for the most part worrying factor of clients. Thus it appears that there's a possibility to add fixed project cost and time and change the project scope. Put simply, there's a chance to turn iron triangle upside down in several projects

CONCLUSION

For the construction project management, the APM is actually an unusual word to nearly all stakeholders. Just about all construction projects practice the TPM (waterfall management). Therefore they familiar the technique of the program first and implementation second; in other words the sequential approach. Therefore the iterative approach as scrum methods in APM is actually a difficult task to integrate in constructions projects.

As per the literature review, you will find specific dissatisfactions and problems are actually experiencing in TPM approach. The literature states that the cost overruns and time overruns are actually the key issues with TPM. The client who's the supreme proprietor of the project is actually overviewed the output at the conclusion of the entire job. Therefore it's difficult to revise or even change the task possibly even the client might have to include or even omit the needs of his to or perhaps from the task. The advanced model then supported to the conduct the case study. The case study was conducted to the donor funded task that is sealed the time and project budget with its top limit



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