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Uses of Project Retrospectives in Construction Projects

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ABSTRACT
The Evolution of Construction projects has triggered a lot of lessons which needs to be learnt through out the phases or post project completion,one of the best ways to get interacted and know how situations or things are going out is to hold retrospectives during or post project phases. if working in the same way, there's no reason to expect future projects to go any better than previous projects. Continuous learning and process tuning are hallmarks of successful organizations. A retrospective is the most effective way to look back on completed work as part of a culture of continuous improvement. Reflecting on completed projects or development iterations can yield insights that help future work be far more successful. Retrospectives are an intrinsic element of many agile software development approaches, as the team can apply lessons learned from early sprints immediately to improve their future sprints.A retrospective is a structured way to gather knowledge, insights, metrics, and artifacts from a performance.completed project, phase, or development iteration. Even in daily life, taking the time to reflect on why something unpleasant happened helps you to avoid a recurrence.A formal retrospective provides closure. It's a way for the participants to share their observations and experiences away from the day-to-day project pressures. Even if the project was a colossal failure, the lessons you harvest from it can produce something positive from the experience.Retrospectives are sometimes called post-project reviews, debriefings, or post-mortems (even when the project survived!). Retrospective is a neutral term that suggests a contemplative reflection on previous experience to gain practical wisdom and improvec future.

Keywords
Retrospectives; Project; Metrics; Insights; Performance ;Construction.

I. INTRODUCTION

We should always look for opportunities to grow and improve. Retrospectives and reflections allow you to codify what you've learned from experience, to document mistakes and avoid future ones, and to increase potential to grow in the future. retrospective meeting is a structured way of reflecting on projects and can help promote continuous improvement Retros help the team as a whole, and its members, gather their thoughts and opinions on a recent project. Often, we move from project to project or task to task without taking the time to sit and reflect. An effective retrospective can thus be an incredibly beneficial way to help us improve our ways of working, especially when it comes to teams.To implement these in construction projects are a dire need as a lot of construction projects does go through a lot of diverse phases where continous learnings are on offer to be taken and should be documented.

Retrospectives Methodology

In today's business and technology landscape, change is pervasive. The retrospective method is effective because it helps a team adapt more easily and quickly to change. Retrospective hallmarks, such as striving for honesty in a blame-free environment, bring important ideas into the open, making them actionable. The retrospective practice of focusing on central questions — what is working well and what needs improvement — produces greater value and keeps the team's attention on what matters most.Done correctly, retrospectives are also effective because they occur frequently and allow the team to implement and test potential solutions. With each new retrospective, the group can look back and see how these solutions worked at the last retrospective. In such an environment, work patterns and processes do not become rigid or stale.

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- Create a transparent and safe environment
- Boost team spirit
- Help your team learn and develop
- Highlight team and individual strengths and weaknesses
- Identify blockers in your ways of working
- Set better and more realistic expectations
- Improve planning and structure for future projects

Creating a transparent and safe environment

A well-planned and well-executed retrospective will allow each member of the team the time and space necessary to share their points of view on how the process went, the successes, and the failures, and what suggestions they may have for the future. Gathering these insights will be the best way to get a clear and comprehensive picture of how the project went. Allowing them the freedom and the opportunity to contribute to the discussion in a safe and constructive environment will build team unity and collaboration.The top down or botton up structure should be well versed to know the factors which should be transparent enough

Boost team spirit

Retrospective meetings are good team-building exercises as they allow us to share praise and feedback. Discussing success stories, giving feedback, and brainstorming solutions will boost team spirit and energy levels. Taking time to show appreciation for a job well done and praise one another is another way to bolster morale.Feedback, when well-structured and constructive, can help us improve our ways of working individually and in a group. Without this, we are all likely to fall into bad habits that can be a detriment to a team's success.

Help your team learn and develop

Ensuring your team improves and adapts over time is a primary step to becoming a high-performing group. As a team leader, you encourage everyone to grow and develop during every project. Learning and developing take time, patience, and diligence. We have mentioned utilizing constructive feedback to highlight areas that need work, but on a broader level during a retrospective, we may identify elements of a project where the whole team needs to improve

Highlight team and individual strengths and weaknesses

Some self-reflection will help everyone understand when they had the most significant impact, when they felt most at ease, and when they may have struggled. Allowing them the time and freedom to reflect on this will help them identify what skills they need to develop and where their strengths lie. No team is perfect at everything, not even the high-performing ones. Identifying these strengths and weaknesses will help you accentuate these strengths, work around the shortcomings, and help turn your group into a high-performing and efficient unit

Identify blockers in your ways of working

No matter how large or small a project or task may be, there will be blockers that impede progress. Both can cause delays and frustration while also requiring you to find workarounds to complete a project or move ahead. Some may go unnoticed as people don't feel it necessary to mention them at the time. By sharing their experiences, your team can work to make your processes more efficient and streamlined in the future. Having team members offer solutions to past and potential blockers will save your team time and stress in the long run.

Set better and more realistic expectations

Perhaps this was a project with a very ambitious scope that you managed to deliver on. Maybe you initially thought this was an easy job that would be completed far sooner than it was. Retros can be the perfect way to recap the entire process and help you better understand if your and your team's prior expectations were accurate or not. Likewise, there may be external pressures and demands that your team must face when it comes to projects. Holding these retros will help you as a team lead and project manager define future expectations for stakeholders.In Construction industry this is an very pivotal factor to be kept in consideration the new technologies are coming at rapid pace and we should be better equipped for an change management and by holding retros we will very well be able to know.

Improve planning and structure for future projects

You are gathering more and more information on your team, what they do well as a group, what they struggle with, what you can do to help them become more effective, and what you may be able to achieve in a certain period. You will be armed with a high level of insights and

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information when you sit down to plan your next project with other stakeholders, department heads, executives, other teams, or clients.Now, you may be wondering, 'When should you should a retrospective meeting?' It's a fair question to ask as the timing of meetings can greatly impact their effectiveness and outcome.Look to book a meeting around five days or one week after your project or sprint ends. This should be enough time for the dust to settle and for everyone to gather their thoughts

Data Metrics in Retrospectives

During the review part of the meeting, you should use data wherever possible to validate team reports of successes and setbacks. Hard data is very helpful. But soft data can also provide a lot of crucial information, such as the team's level of burnout or sense of job satisfaction. Hard data is a good way to document trends in productivity and quality. You can measure and track the following numbers for each sprint period or project step

- The percentage of work that the team has achieved by this point vs. the percentage of work that the team had originally set out to achieve by this point
- A Burndown Chart showing the amount of work that remains vs. the amount of time that remains in which to complete that work (See Fig 1)
- The number of project activities it has to be completed (See Table 1)
- The velocity or rate of progress from burn down data chart (See Table 2)
- The amount of time the team has spent in meetings

Make sure to confirm that data is accurate before presenting it in the retrospective. Gather soft data by giving questionnaires to your team on a recurring basis. Have members rate the following on a numerical scale: mood, job satisfaction, sense of fatigue or burnout, etc. While the results of these surveys are not foolproof, they do a good job of making trends visible. These polls also provide a way for the team to air any negative feelings, rather than letting them faster. The main goals of the retrospective are to provide responses for three distinct assessments:

1. What are the things that the Project team needs to **continue** doing?
2. What are the things that the Project team needs to **start** doing?
3. What are the things that the Project team need to **stop** doing?

There are a variety of metrics that a Scrum team can utilize to measure their performance on a Sprint by Sprint basis. These metrics have been identified in Table 2.and various types of metrics are as:-

- Velocity Burndown
- Completed Success Rate
- Estimation Accuracy
- Feedback Ratings
- Morale Ratings

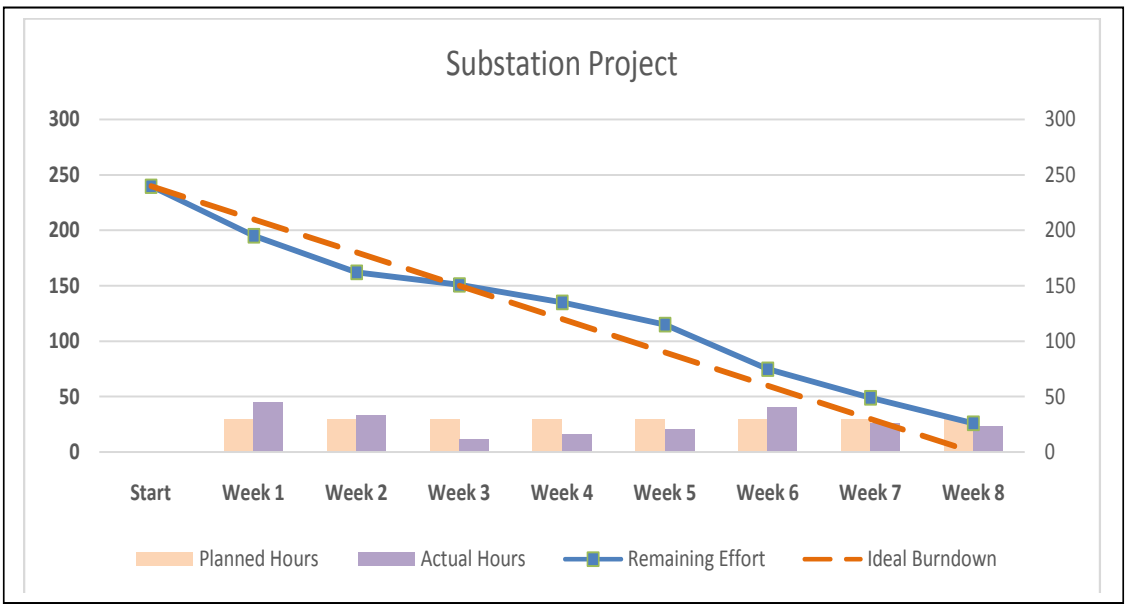

Fig 1 ,Burndown Chart

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Table 1, Data of the Tasks which can be calculated with the planned and actual progresses as per the way the planners want to weigh them in this example its being kept as an exemplanary for extraction of results

Burndown Chart Data									
Feature	Initial Estimate	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8
Activities	60	20	8	5	1	5	10	0	1
Execution	60	10	5	2	2	5	10	19	2
Finishing	60	5	8	2	10	5	10	5	10
Reminders	60	10	12	2	3	5	10	2	10

Burndown Chart Data									
Settting	Start	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8
Planned Hours		30	30	30	30	30	30	30	30
Actual Hours		45	33	11	16	20	40	26	23
Remaining Effort	240	195	162	151	135	115	75	49	26
Ideal Burndown	240	210	180	150	120	90	60	30	0

Completed Success Rate

This metric is represented as a percentage of the tasks completed based on what the team projected that they would complete. For example, if the team made a commitment to complete 50 tasks and they only completed 49, the completed success rate would be 49/50 = 98%

Estimation Accuracy

This metric is represented as a percentage of the actual time spent on tasks and the time that the team estimated would be needed. For example, if the team estimated their total work as 50 hours and it took 45 hours to complete, then 45/50 = 90% estimation accuracy.

Feedback Ratings

This metric is the feedback rating from the stakeholders on the project using subjective and/or objective ratings that measures Team's performance. For example, stakeholder may provide feedback as "Very Good, Excellent, or Outstanding". This would be a subjective measurement of feedback. On the other hand, if a stakeholder responds on a scale of 1 to 5, where:

- 1 = Outstanding (A)
- 2 = Very Good (B)
- 3 = Good (C)
- 4 = Fair (D)
- 5 = Poor (F)

The above measurement represents an objective feedback rating

Team Morale Ratings

The Project Team members conduct self-assessments regarding their morale in relationship to the project. For example, team members provide information such as:

- Team Member 1 morale = High
- Team Member 2 morale = Low
- Team Member 3 morale = High

II. DATA ANALYSIS AND DISCUSSION

Before the initiation of holding a retrospective it should be noted that it's very pivotal to carefully analyze the data gathered, as without the proper study of the gathered data may result in meeting agendas to fall outside of the route. The discussions held during the meeting of retrospective should have well defined clear agendas of what will be discussed and for how much time. Such as in the following manner

- Goals of Retrospectives (Time Frame work of 5-10 mines)

- Rules of Engagement (Time Framework of 5-10 mins)
- Account of What Happened (Time Framework 40-50 mins)
- Conclude with Purpose (Time Framework 10-15 mins)

It should be well noted that the engagement of every individual should be promoted to know the verses of all those which are involved in the construction phases. The prime directive says Regardless of what we discover, we understand and truly believe that everyone did the best job they could, given what they knew at the time, their skills and abilities, the resources available, and the situation at hand. At the end of a project everyone knows so much more. Naturally we will discover decisions and actions we wish we could do over. This is wisdom to be celebrated, not judgment used to embarrass.

III. CONCLUSION

The retrospective is the opportunity to elevate the bitterness of experience into the nobility of reflection, this is an innovation race where we are out here and there to make our construction industry vibrant, front end leading and a benchmark for other peers ,the needs of further enhancement and betterments in the construction management worldwide is the need of the hours where we are focused and determined to build more and more breathtaking structures, this research was itself led by an idea of what could have been done better or what can be done even more precisely and in a better way on the projects author is working for .There is an wide scope of array left in the construction management and more innovations of dealing with the execution and management of fastrack and mega projects should be carried out.I would. Finally it can be stated that the metrics of measuring retro's can be kept as the points to be used and further improved to enhance their data efficiency and further promotions in the research is highly appreciated.

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