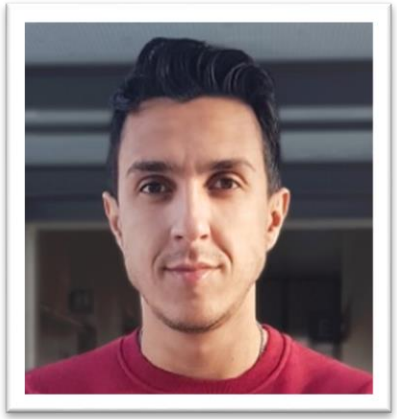
IGLC 2021
LIMA, PERÚ - 29TH ANNUAL CONFERENCE
INTERNATIONAL GROUP FOR LEAN CONSTRUCTION

LAST PLANNER® SYSTEM on THE MINNEVIKA BRIDGE PROJECT



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Research questions

1. How is the Last Planner® System practiced on the Minnevika bridge project?
2. What are the strengths and weaknesses of the LPS process on the Minnevika bridge project?
3. How have the involved parties' attitudes towards challenges changed during the implementation of LPS?

Research methods

- Thematic literature review on LPS implementation, LPS stages and challenges
- Case study: The Minnevika bridge project
- Case- specific observations in weekly meeting (PEP)
- Semi-structured interviews
- Surveys

Minnevika Bridge Project

- The Minnevika bridge project is one of the first infrastructure projects in Norway to implement LPS.
- The longest railway bridge in Norway
- The main contractor, PNC Norge AS, has implemented the LPS for the first time in their projects.

Figure 1. Minnevika Bridge Project

LPS process on the Minnevika Bridge Project

- Milestone planning
- Pull planning
- Look-ahead planning
- Weekly work planning or Production Evaluation and Planning (PEP)
- Learning- Key Performance Indicators (KPI)

Figure 1. Minnevika Bridge Project

Findings and discuusion

Strengths

- Milestone gives a target plan on entire the project
- Milestone is a great tool to track the project progress for higher level management
- Look-ahead planning helps visualize the process and improve understanding
- One meeting substitutes separate meetings with individual subcontractors
- Participation in planning motivates the foremen
- Participants with different perspectives provide input to appropriate solutions

Weaknesses

- Look-ahead planning sometimes creates a short-term focus
- The meetings are time consuming
- Parts of the meetings were irrelevant to some participants
- Hard to attract the participants' attention to the KPI

Attitude changed based on the results of two surveys

1. Maintaining people's commitment to be part of the process and to take the system seriously
2. Lack of Transparency in the interfaces between project team members
3. Resistance to the system
4. The language barriers
5. Non-participation of critical team members
6. The decisions and input are primarily provided by top-level management, such as site managers
7. Fear of responsibility (mainly from lower-level management)
8. Doubt (doubt about the overall performance and the benefits behind the LPS)
9. Misunderstanding of the basic concepts of the LPS
10. The time commitment required to participate in the weekly meeting
11. The lack of engagement
12. Disruption

Based on Omar (et al. 2020)

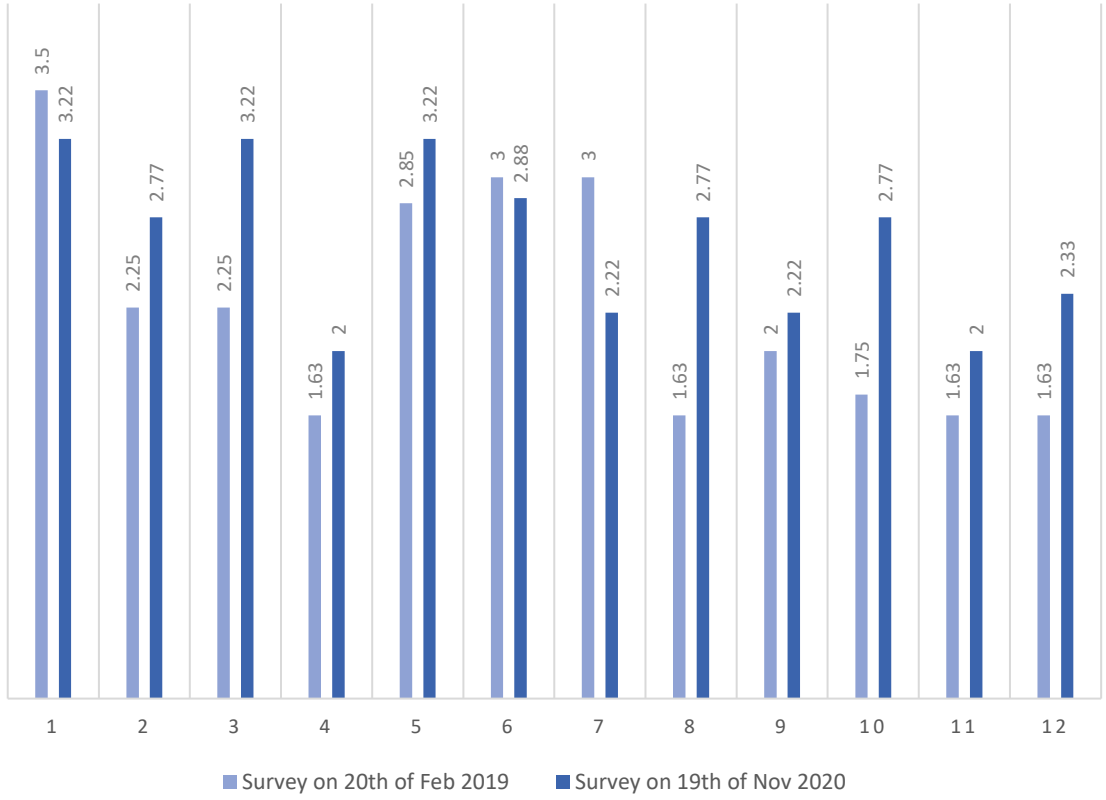

Figure 2. Comparing the results survey

Conclusions

- The Last Planner® System on the Minnevika bridge project consists of five core components, namely milestone planning, pull planning, look-ahead planning, weekly work planning and measurements for learning.
- Based on the analyzing the notes from the participant observations and the transcripts from the interviews with the project team, the strengths of LPS overweighted the weaknesses.
- The attitude of the project team has changed towards the detected challenges after one year of the LPS execution.

THANK YOU!

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