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PERFORMANCE MEASUREMENT

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This conference track focuses on the following question:

**What performance measurements are needed to support lean production systems...
(1) at the project level, and
(2) at the organizational level**

The following is a list of issues and questions related to performance measurement. This list is intended to serve as an initial “brainstorming” set of questions on the relation of performance measurement and lean production systems.

Authors with papers on this topic should not be limited by this list of issues. However, the authors should explain how the paper contributes to the overall goal, that is to identify performance measures that support lean production.

ISSUES AND QUESTIONS

- What performance indicators engineering and construction organizations should use to support lean processes?
- Is performance measurement value-adding?
- Outcome metrics vs. process (operational) indicators. Managers measure primarily results that indicate if they meet their goals (e.g. accident rates). Process metrics are “leading” indicators and measure key factors that influence the outcome (e.g., safety violations). PPC is a process quality metric (quality of the planning process).
- Conflict between project performance measures and organizational level measures (functional resource utilization). How align project and functional organization measurement system?
- Issues related to the process of collecting, processing, analyzing and disseminating performance data, such as:
 - What are the main requirements for performance measurement systems to support lean production systems?
 - What are the requirements for PM systems to support learning in the organization?
 - How to implement performance measurement systems that are adequate for lean production systems?
- Descriptive research: What performance indicators do engineering and construction organizations (general and trade contractors) currently use? How are the performance measurements used in decision-making?

- Lean practice: What performance indicators lean organizations use? The TOC (Theory of Constraints) literature provides insights in manufacturing settings. What are the experiences of AEC companies?
- Problems with current performance measures (earned value, resource utilization, percent complete, crew productivity, etc.) Do current performance measures lead to behaviors/actions opposite to lean principles?

It has been argued that result-focused measures lead to ‘fixing problems’ (as well as not fixing problems if “it’s not broken”), while process–focused measures place emphasis on preventing/avoiding problems.

- Are current measures adequate for complex/interdependent processes? How measure a “function’s” performance in a complex, interdependent systems (where each party’s performance depends on others’ performance).
 - Some critical performance indicators may be impossible (or too expensive) to measure. How manage in these conditions without measurements?
 - From the perspective of an organization who manages resources across many projects, what operational metrics are needed to improve performance in a multi-project environment?
 - What “local” (functional) measurements are needed to support global (project / company) goals. How can functional groups make decisions /take actions that contribute to overall system performance?
 - What performance measures support long-term organizational learning and improvement towards lean goals?
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