

Lean Opportunity Assessment of Contractors' Supply Chain in South Africa

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I. Background

The study is intended to address supply chain performance problems encountered when delivering construction projects in South Africa. The study assessed lean opportunities in construction with a particular attention to the supply chain aspects. The application of lean construction practices is reportedly hampered by the gaps between training/teaching and the actual reality of a company. To bridge an implementation gap, lean opportunity assessment (LOA) is used as a start, and the application of LOA is performed so that the potentials for improvements in a company can be identified. The LOA outcomes is benchmarked against best practices as it addresses key performance areas from a 'situation analysis' perspective. The LOA is done to help a company to identify the potential for improvement by analysing various aspects and processes from a lean perspective.

II. Current conditions

- In South Africa, the application of SCM concepts in construction appears to be marginal.
- There is a lack of sufficient empirical work from SCM and lean construction angles regarding the poor project performance in South African construction.
- Companies keen on the adoption of lean construction practices requires a starting point.
- LOA helps to evolve a lean journey starting point.
- The LOA is not done to generalize the causes and effects of a problem, rather, it is done to know the status quo regarding lean implementation intentions of a single company.

III. Working hypotheses

- *In the developed countries, contractors are increasingly using lean construction practices, while contractors in developing countries such as South Africa are either unaware of it or shying away from its implementation.*
- *The application of LOA is common because of what is termed 'lean failure' which happens when lean initiatives fail in a company.*
- *In South Africa, SCM and lean construction appears to be gaining traction in the construction industry.*

IV. Research Method

<p>I. Background This study addresses the supply chain management (SCM) and lean construction implementation problem in South African construction.</p>	<p>V. Proposed countermeasures The LOA variables highlights areas to be evaluated regarding; internal communication, visual systems and workplace organization, operator flexibility, continuous improvement, mistake proofing, quick changeover, pull system, standard work, engineering, performance measurement, and customer communication</p>
<p>II. Current conditions Regarding the project delivery system, it is still business as usual for contractors, and poor project delivery performance in construction is common.</p>	<p>VI. Plan</p> <ol style="list-style-type: none"> 1. Use the LOA protocol from the ‘lean supply chain and logistics management’ book by Paul Myerson. 2. Conduct interviews with ‘the five contractors’ to obtain more views on LOA variables. <p>The protocol for administration of the LOA:</p> <ul style="list-style-type: none"> - Notify the key people in the contracting companies. - Obtain the organogram of the contractors. - Send the LOA templates. - Explain the rationale behind the LOA evaluation.
<p>III. Goals/Targets To establish how contractors in South Africa can begin to consider and adopt lean construction practices.</p>	
<p>IV. Analysis A cause of the problem is improper work and information processes used in projects by the supply chains of most contractors.</p>	<p>VII. Follow up</p> <ol style="list-style-type: none"> 1. Content analysis method was used to analyze the transcribed data. 2. The results were validated using follow up discussions

V. Research Findings

- Figure 1 gives insight into waste elimination opportunities in the work process of the five South African contractors. The figure evolved from the LOA exercise.

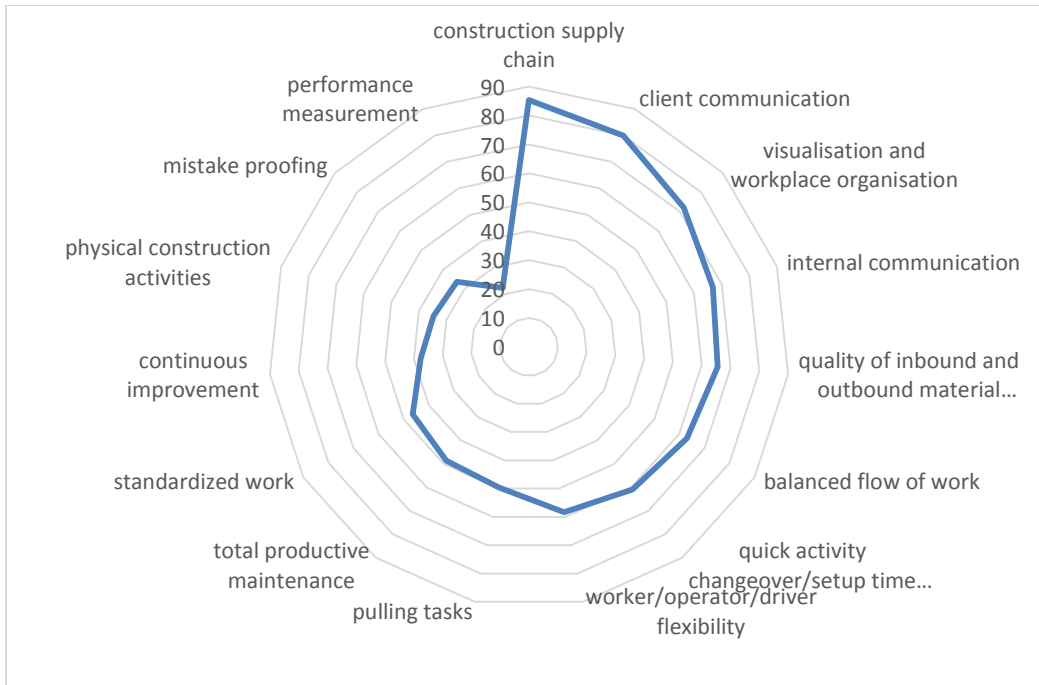


Figure 1: Lean opportunity summary graph for five South African contractors

VI. Conclusions

- An LOA delivers crucial outputs, which include ‘as-is’ analysis, current-state VSM, future state VSM, and recommended improvement opportunities.
- The use of LOA and VSM concepts would however depend on evidence to be produced through the development of current-state and future-state VSM for the contractors in 2017.
- It is expected that the VSM would show various connections between activities, information and material flow that can impact upon both value adding activities and wastes in the companies