

A LEAN CONSTRUCTION MATURITY MODEL FOR ORGANIZATIONS

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1 INTRODUCTION

The Lean Construction Maturity Model (LCMM) integrates Lean Construction with the assessment method of maturity models and delivers an innovative framework to measure the current state of maturity. The LCMM defines 5 levels of maturity in terms of LC, these are: uncertain, awaking, systematic, integrating, and challenging. (Nesensohn 2014a, Nesensohn 2014b, Nesensohn 2015)

2 RESEARCH AIM AND METHODOLOGY

The LCMM was developed as part of an PhD research which is based on a mixed method research design involving focus groups and interviews with lean construction experts. Its validity has been tested and proofed through an expert panel. The LCMM offers organizations in the AEC Industry an opportunity to obtain a systemic and holistic overview of their current state of LC maturity and provides them with support in their maturation. This paper intends to motivate its implementation in practice in order to test and demonstrate the whole range of benefits and implications of the LCMM.

Therefore, it is a self-assessment template of the LCMM with a two-step procedure to obtain the current maturity level of any organization proposed.

3 LC MATURITY ASSESSMENT

The developed LCMM framework based on 6 Factors, 11 Key Attributes, 60 Behaviours, Goals & Practices and 75 Ideal Statements. A comprehensible two step maturity assessments procedure has been developed:

1. Recollect and analyse of the inputs for the current state of LC maturity in the organisation
2. Compare the inputs against the Ideal Statements

Each Key Attribute of the LCMM will be evaluate with the maturity level. This Level is calculated by the lowest maturity level from all Ideal Statements within this factor as shown in Figure 1.

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Leadership	Lean Leadership		2
	1. <i>Passion</i>	Their leaders fundamentally own it and have a passion and tenacity about Lean so that they are doing it for themselves.	3
	2. <i>True Understanding</i>	A: Their leaders have a true understanding of Lean and see the big picture.	3
		B: Leaders make decisions with short-term pain to achieve long-term gain.	4
	3. <i>Pre-set Position</i>	Leaders have a internalised pre-set position that everything can be improved and they apply it to their own objectives.	3
	4. <i>Walk the Talk</i>	Their leaders drive, deploy and spread the new behaviour by being the example.	3
5. <i>Standard Work</i>	All leaders conduct their day in a standard and systemic way.	2	

Figure 1: LCMM assessment for the Factor Lean Leadership.

All 11 Key Attributes need to be multiplied with an individual chosen weighting factor to get the total maturity level for the organisation. In this way strengths and weaknesses in terms of LC maturity can be identified as shown in Figure 2.

No.	Key Attribute	Initial Level	Weighting Factor	Result	Total maturity level.
1	Lean Leadership	3	4	12	
2	Customer Focus	2	3	6	
3	Way of thinking	2	3	6	
4	Culture & Behaviour	1	4	4	
5	Competencies	2	2	4	
6	Improvements Enablers	0	2	0	
7	Processes & Tools	2	2	4	
8	Change	4	2	8	
9	Work Environment	2	2	4	
10	Business Results	1	1	1	
11	Training & Competency Development	1	2	2	2
Total:			27	51	1,9

Figure 2: LCMM assessment for Lean organised by the factors.

4 RESEARCH FINDINGS

Firstly, The LCMM provides a measurement of the current state of LC maturity within respect to: lean leadership, customer focus, way of thinking, culture & behaviour, competencies, improvement enablers, processes & tools, change, work environment, business results, and learning and competency development.

Secondly, the data collected to inform the development of the LCMM reveals four main phenomena as the essence of maturity in LC:

