

IMPLEMENTATION OF LEAN CONSTRUCTION IN CLIENT ORGANISAZITONS - AN ANALYSIS OF THE STATUS QUO IN GERMANY

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1 BACKGROUND AND IDENTIFICATION OF PROBLEM /GAP OF KNOWLEDGE

Lean Construction is a management approach that is not only relevant for construction companies but also for their clients. The goal of this paper is to document efforts toward lean construction from the perspective of the ultimate client. Additionally, the different forms of this are identified and assessed according to lean construction principles. This allows the current status of lean construction implementation by industrial concerns acting as construction clients in Germany to be determined.

2 RESEARCH METHOD

Due to a lack of literature on the topic of clients and how they carry out projects, it is not possible to gather sufficient written factual data on this topic. In order to gain a perspective on client implementation concepts which is as realistic as possible, data was gathered qualitatively in the form of expert interviews.

The interviews were carried out using open questions with the help of additional knowledge gathering strategies (Scheele and Groeben 1988). The combination of open, closed and hybrid questions created the possibility of gaining an overview of the lean methods used, and at the same time offered the potential for discovering new methods. The goal was to gain additional background information on how projects are executed.

The recorded data was anonymized to protect the identity of the participants.

The organizations invited should be active in the industrial sector and have an in-house construction department. Ideally, they should have knowledge of, or even have implemented lean construction methods.

As the questionnaire included open and hybrid questions, data was assessed through coding of the questions. Thereby similar answers could be categorized. After categorization was completed, the hybrid questions could be assessed in the same way as the closed questions. It is important to include a category such as "no answer". The approach of interpreting the answers was completed using Flick's method of thematic coding (Flick 1995).

3 FINDINGS

- This paper shows that the ultimate client develops various strategies to define value for the client, and how to achieve it. Evaluation of the gathered data shows that as a result of client demands, more efficient supply systems, simplified standards, quality improvements, cost optimizations and transparency of various lean management concepts have been

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developed. There are similarities with regard to the influencing factors for project execution and types of buildings.

- Categories are defined based on the company’s assessment of tools and methods used. This evolved two significant strategies: the product strategy and the process strategy. The basis for this categorization is the definition of the characteristics of standardized processes and products according to Aapojla (et al. 2014). Furthermore, effects can be seen in the execution strategy for project organization. Glatte (2014) confirms that corporate strategies have significant effects on the real estate strategy and thereby influence the selection of project execution strategy.
- Thereby there is a clear internal definition of their own client value in this work. Achieving value to the client is not achieved just by selecting a method, but rather by choosing a product and process-driven strategy and aligning the regarding tools to them. The type of implementation is bound by strategic parameters, which is also linked to the client's area of business.
- The current best practice is used by Company 2 which attempts to integrate the product into its process strategy.
- The current status of lean implementation for ultimate customers in Germany is shown in Figure 1 according to Schuh’s Lean Maturity Model (Schuh 2013). "This maturity model describes how the effectiveness of lean innovation principles can be continually increased by changing structures and relationships. Working with ideal situations and the target outcomes derived thereof to serve in orienting all employees is especially important for continuous improvement." (Schuh 2013)

Maturity level	Company 1	Company 2	Company 3	Company 4	Company 5	Company 6	Company 7	Company 8
Ad Hoc								
Waste is not identified			X	X				
Defining according to the customer is not known of				X				
Lean Innovation principles are not known			X					
Lean Initiated								
Fundamental knowledge of Lean Innovation principles exist	X	X			X	X	X	X
Understanding of value and waste exist	X	X	X		X	X	X	X
Transparent communication of guiding principles	X	X						X
Lean Organised								
Acceptance of Lean Innovation principles	X	X			X			X
Lean innovation implemented in methods and processes		X						
Improvement project occur regularly		X						
Lean managed								
Application of Lean Innovation principles								
The principles are basis for further improvements								
A north star is formulated and communicated								
Lean optimised								
Evaluating and Improving adherence to the principles								
Continuous Improvements to reach the north star								
Lean Innovation is passed on the partners								

Figure 1: Lean Maturity Phases (Schuh 2013)

