

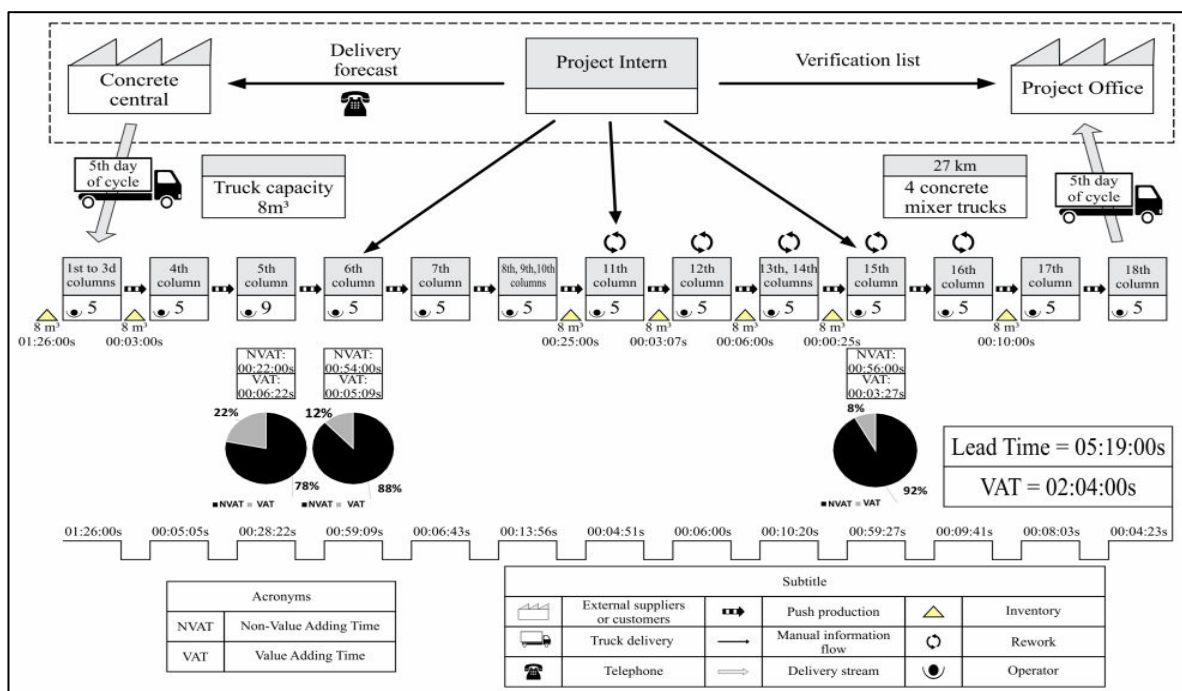
VALUE STREAM MAPPING: CASE STUDY IN COLUMNS CONCRETING

Andrezza V. C. Germano¹, Nayara Jhêssica M. Fonsêca², Reymard Sávio S. Melo³ and Artur Moura⁴

1 BACKGROUND AND IDENTIFICATION OF PROBLEM

- Shou et al. (2016) conducted a systematic literature review aiming to identify critical success factors in the VSM implementation across five sectors: manufacturing, healthcare, construction, product development, and service.
- A total of 97 journal papers were identified by the authors between 1999 and 2015. Results showed that the majority, 72 papers, are related to VSM implementation in the manufacturing industry, and only eight papers are related to VSM implementation in the construction industry. However, of those eight papers, only one (Yu et al., 2009) seeks to standardize the variety of production by reducing waste in construction processes.

2 CURRENT STATE



¹ Master's Student, Graduate program in Civil Engineering, Federal University of Rio Grande do Norte, Natal, RN, Brazil, andrezza.coutinho@hotmail.com
² Master's Student, Graduate program in Civil Engineering, Federal University of Rio Grande do Norte, Natal, RN, Brazil, jhessica_marques5@hotmail.com
³ Assistant Professor, Civil Engineering Dept., Federal University of Rio Grande do Norte, Natal, RN, Brazil, smelo@ct.ufrn.br
⁴ Civil Engineer, Construtora Constel, Natal, RN, Brazil, arturmoura@constell.com.br



3 RESEARCH AIM AND METHODOLOGY

- This paper aims to apply the VSM methodology to improve the concrete placing process in a Brazilian construction site.
- VSM implementation stages are: (i) selection of a family of products, (ii) map the current state (collection of information at the construction site), (iii) map the future state (state to be achieved) and (iv) preparation of a work and implementation plan that describes how to achieve the future state.

4 FUTURE STATE MAPPING

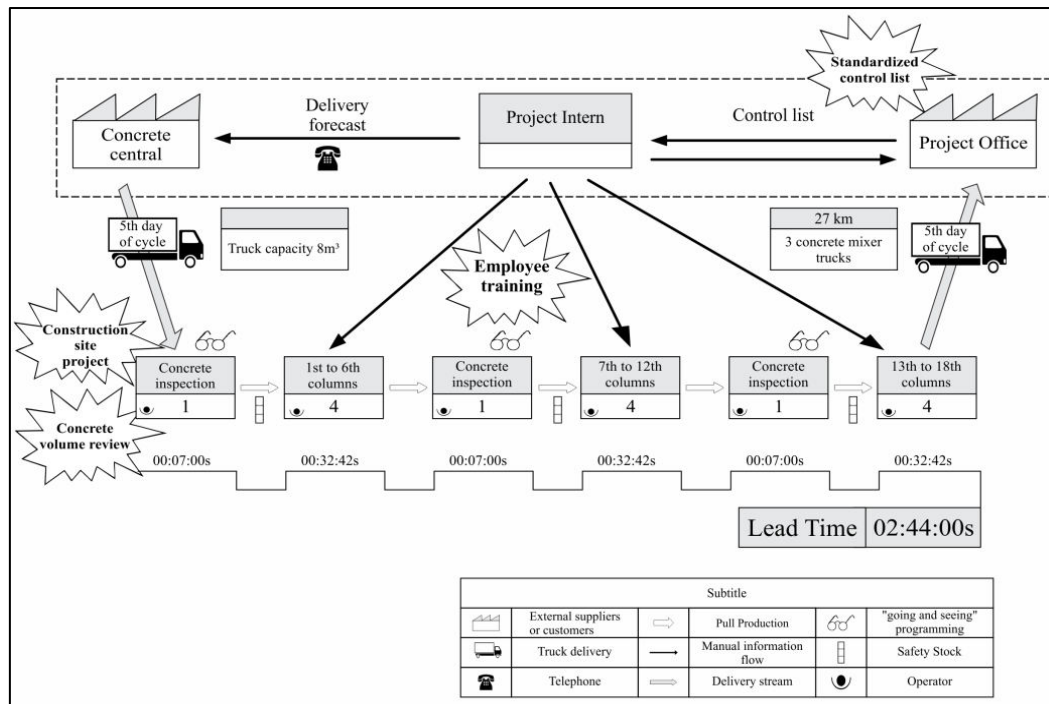


Figure 2: Future state map.

5 CONCLUSIONS

- The use of VSM in the columns concreting process allowed the identification of six types of waste: waiting, handling, inventory, overproduction, rework and making-do.
- The improvements opportunities showed in the future state map would eliminate or reduce the interruptions observed in the process flow, making it continuous, and reducing the cycle times and the lead-time of the columns concreting work.
- The results suggest that the columns concreting process lead time could be potentially reduced from five hours and nineteen minutes to two hours and four minutes.

