

# CONSTRUCTION SITES: USING LEAN PRINCIPLES TO SEEK BROADER IMPLEMENTATIONS

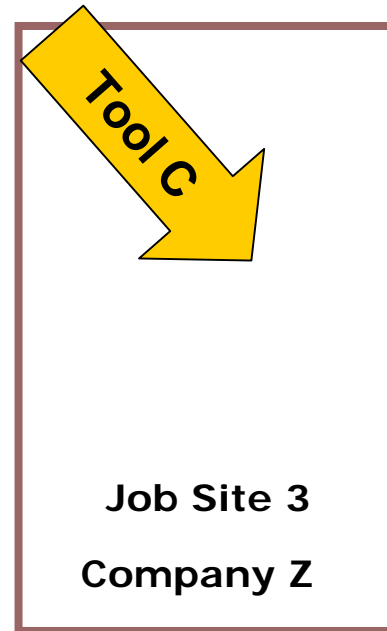
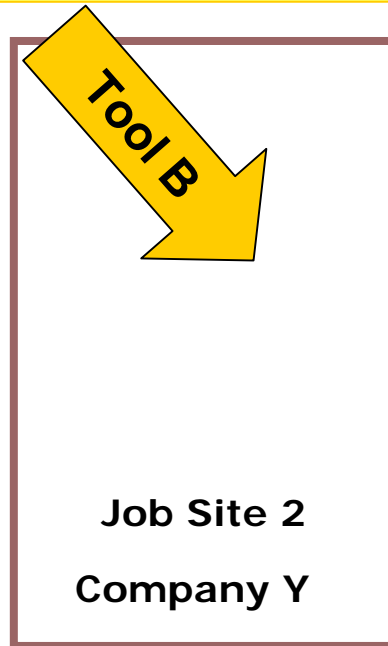
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# AIMS AND METHODOLOGY

- To appraise samples of Lean Thinking applications to construction sites (literature review)
- To figure out potentials of taking the 5 lean principles (**value, value stream, flow, pull, perfection**) to structure implementations, seeking broader results (inductive approach, based on manufacturing experiences)
- To determine present gaps and future research priorities, as well

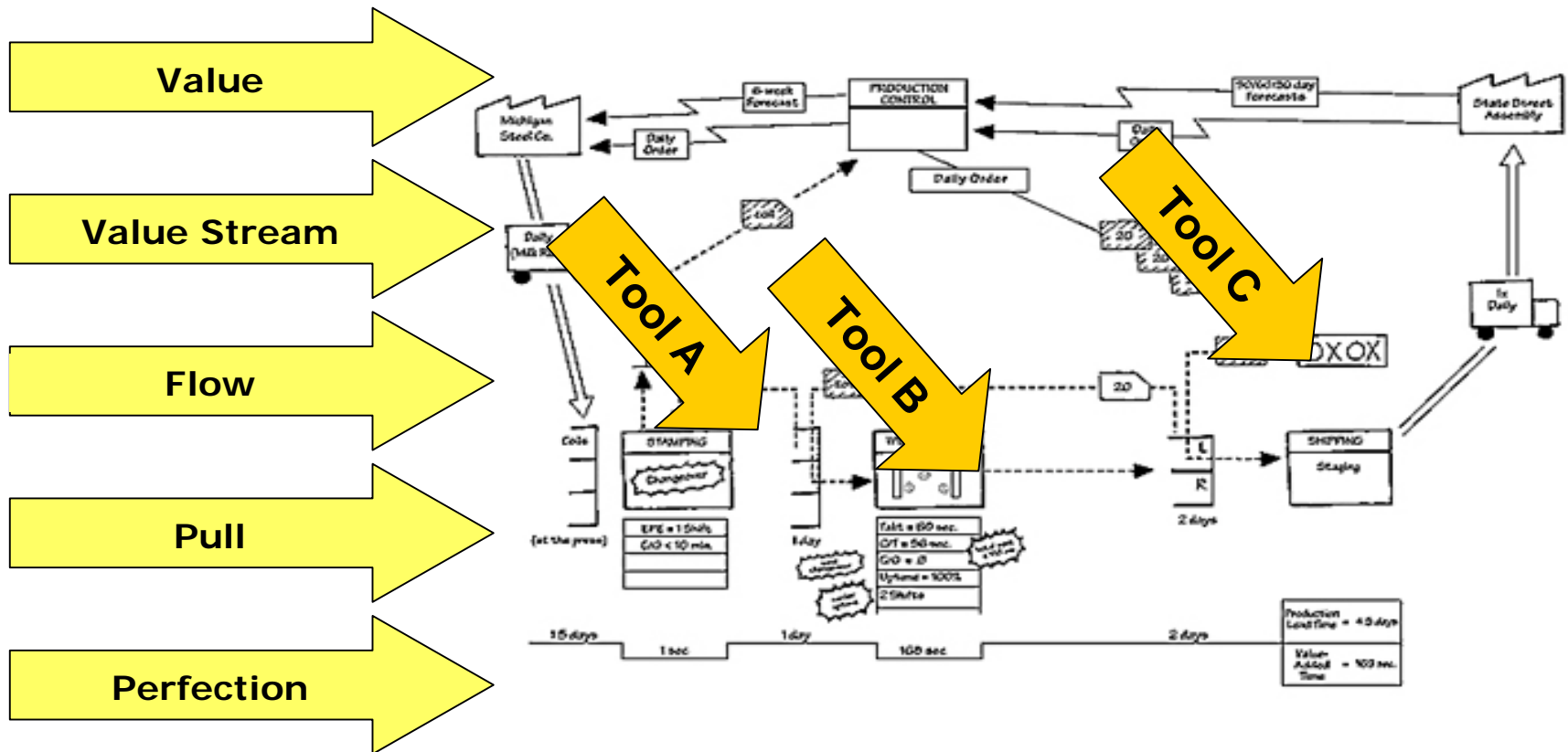
# FRAGMENTED APPLICATIONS OF LEAN TOOLS



Lean Tools:  
*-Just in time*  
*-Work cells*  
*-Poka-Yoke*  
*-Last Planner*  
*-etc.*

- It is possible to carry out lean tools on construction sites
- Limited results: the same occurred at manufacture where lean was firstly conceived

# INTEGRATED CONSTRUCTION SITE APPLICATION

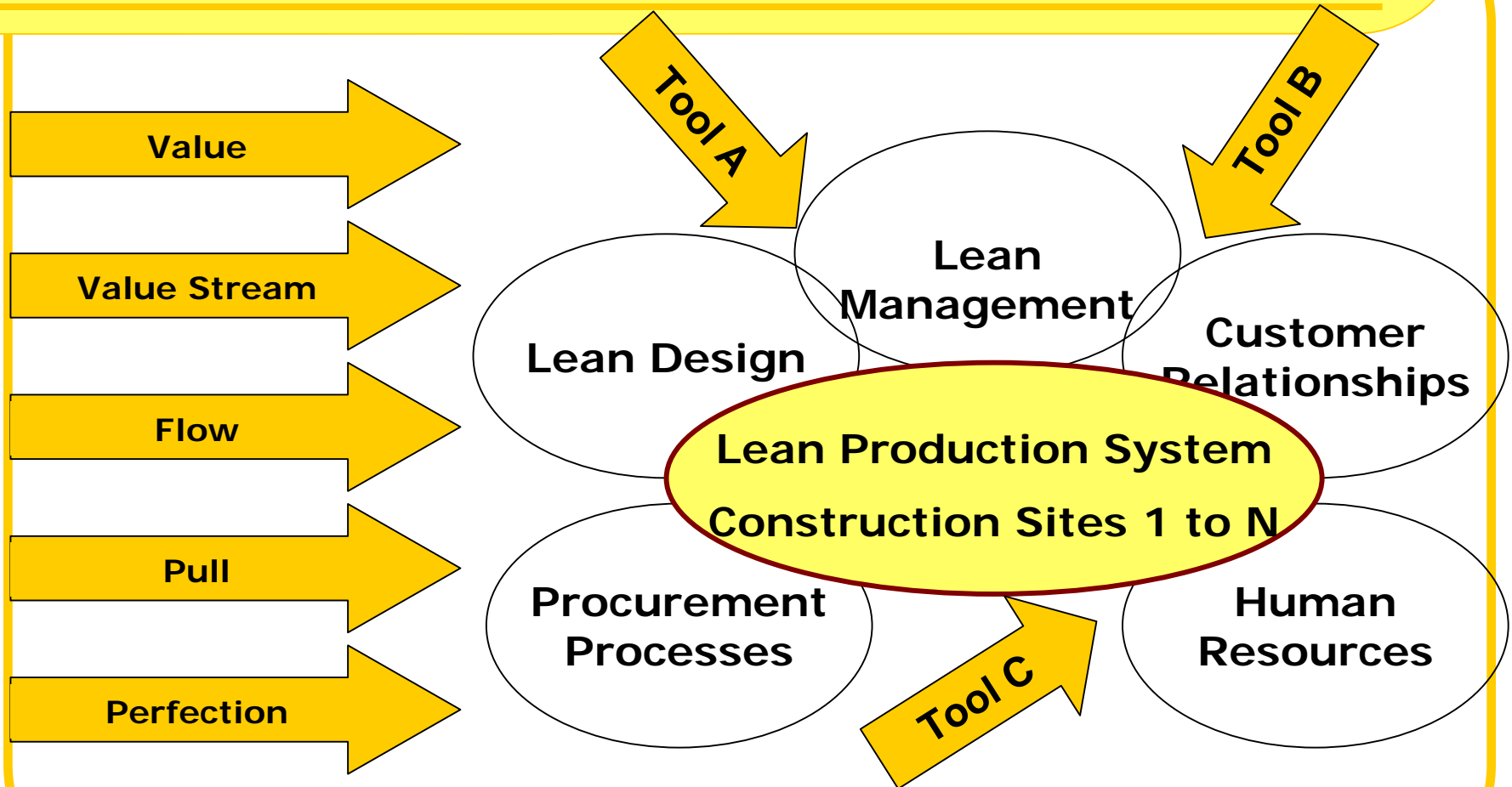


Implementations guided by a Future State VSM designed to improve flow

5 lean principles orienting a systemic application

Use of lean tools: consequence

# LEAN ENTERPRISE



**Major Challenge: lean implementations at construction sites as part of the conversion at the whole company**

**Fundamental aspect: leadership!**

# CONCLUSIONS

- Lean at construction sites: so far isolated use of lean tools
- Despite specific characteristics of construction: lean tools can be used
- Same results as in manufacturing: limited

## Challenge:

Full implementation of the 5 principles: lean tools as a consequence

## How? (future works)

VSM: continuous flow and waste reduction (lean tools where necessary)

First Priority: stabilize flow - Standardized work within construction processes, continuous learning and systematic improvements

Lean business system in the whole construction company: more meaningful construction site implementations

*Thank you*