



Learn to be Lean

Best Practices for your Company

Mikael Reckley | Procore

PROCORE

Presenter



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Agenda

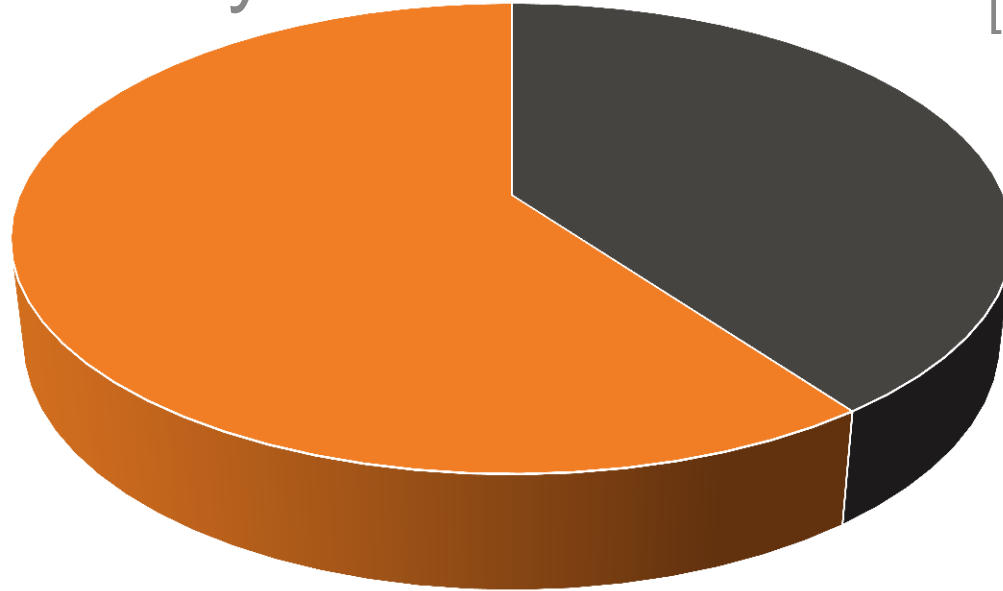
- + The BIG Picture
- + Defining Waste
- + Lean Principles
- + Lean Processes
- + Tools

Why do Lean?

AEC Industry

Productivity
[PERCENT
AGE]

Waste
60%



The BIG Picture

Lean Processes

- + Customer Focus
- + Culture and People
- + Workplace Organization and Standardization
- + Elimination of Processes
- + Continuous Improvement

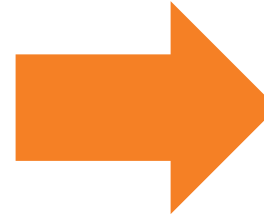
Processes and Tools

Process	Tools
Collaborative Delivery Method	BIM
Last Planner	Mobile
5S	Lean Tools - VSM, A3, WWP, etc.
PDCA	Project Management Software

What is Waste?

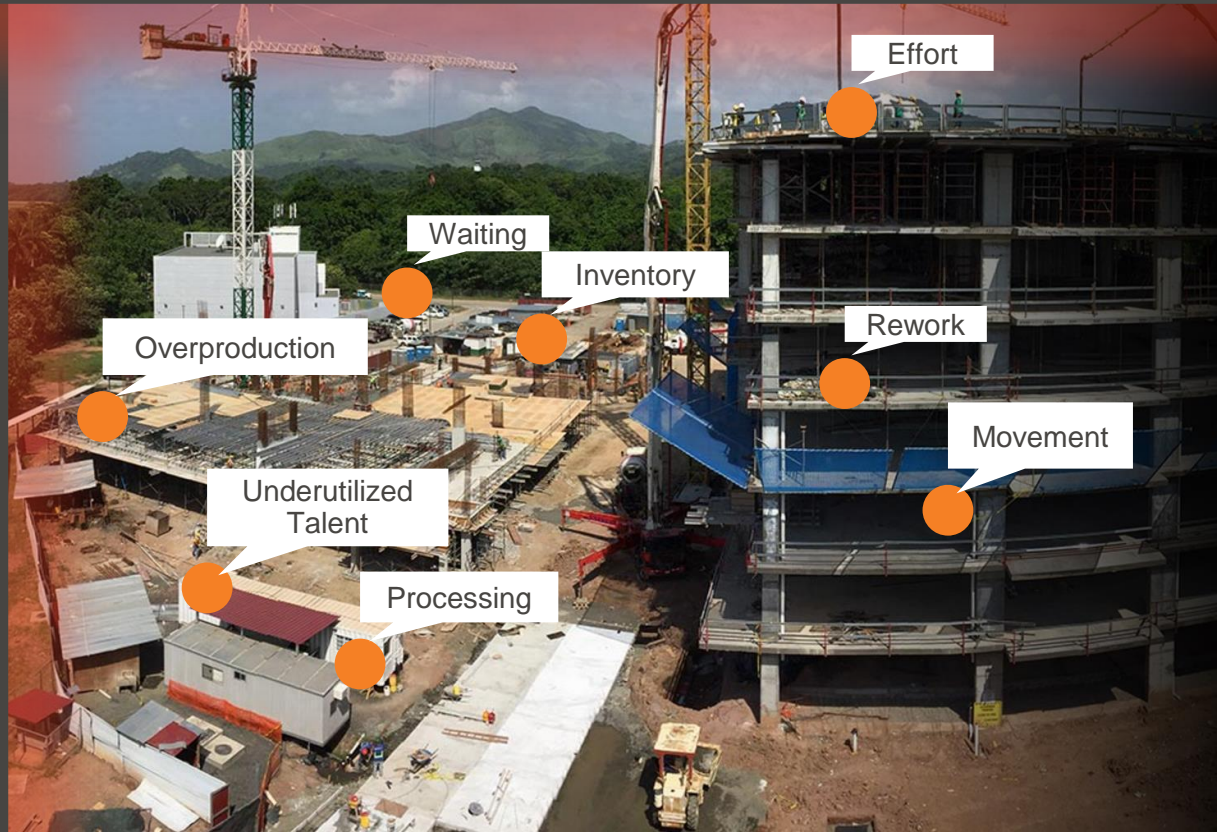


- Effort
- Inventory
- Movement
- Overproduction
- Processing
- Rework of Errors
- Waiting
- Under-utilized Talent



WASTE

Inefficiency Scanner



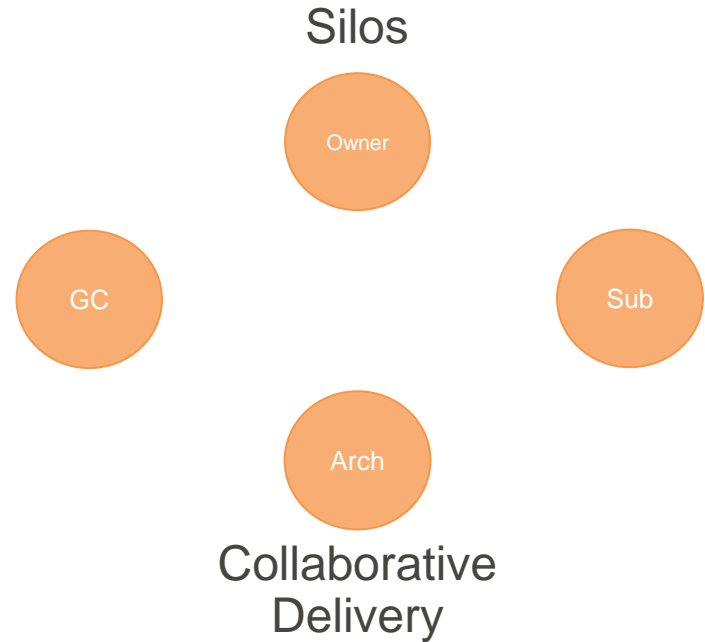
Lean Principles

- + **Customer Focus**—Defined by the customer and in the customer’s language.
- + **Culture and People**—In order to truly be lean, you must change the culture and the project team must be committed.
- + **Workplace Organization and Standardization**—Increase worker efficiency by providing an organized, clean, and standardized area to work within.
- + **Elimination of Processes**—Analyze your current processes and take out what is unnecessary.
- + **Continuous Improvement**—Don’t rest on your laurels, always look to keep improving a process or find a better tool.

Lean Processes- Collaborative Project Delivery

Project Delivery

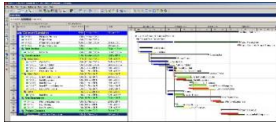
- + Traditional
- + Design Build
- + Design Assist
- + Integrated Project Delivery



Last Planner System

Master Planning

- + Master Strategy
- + Master Schedule
- + Critical Milestones



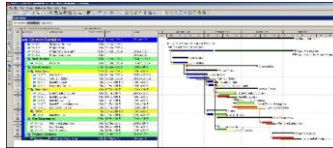
Pull Planning

- + Collaboratively Built
- + Based on Handoff Between Trades
- + Team Buy-in



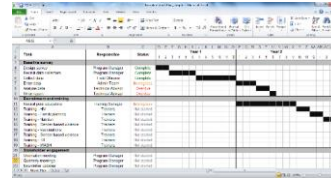
Make Ready Planning

- + 6 Week Look-ahead
- + Constraint Log



Weekly Work Planning

- + Weekly Work Plans
- + Individuals Making Commitments
- + Tracking Percent Planned Complete



Learning and Improving Planning

- + Daily Huddles
- + Analyzing PPC and Making Adjustments



Increasing Detail

5S Plan

Sort

- + Co-locate your items
- + Only stage that you need
- + Remove surplus

Standardize

- + Cleaning schedules
- + Consistency on every floor
- + Communicate to entire team

Sustain

- + Ensure adherence to plan
- + Always improve on your plan and enforce it



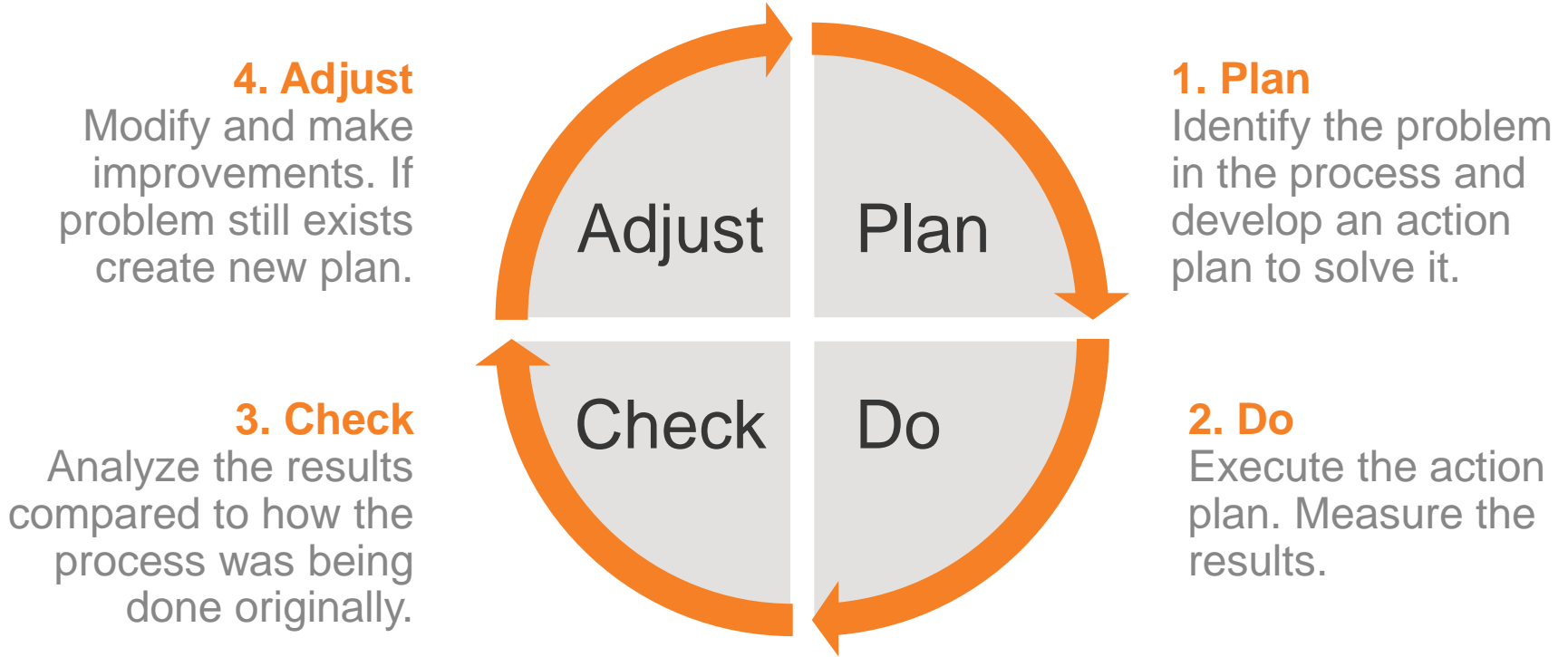
Straighten

- + Every company, equipment, and material has a location
- + Communicate locations to entire team

Shine-Sweep

- + Every company, equipment, and material has a location
- + Communicate locations to entire team

PDCA Cycle: Continuous Improvement



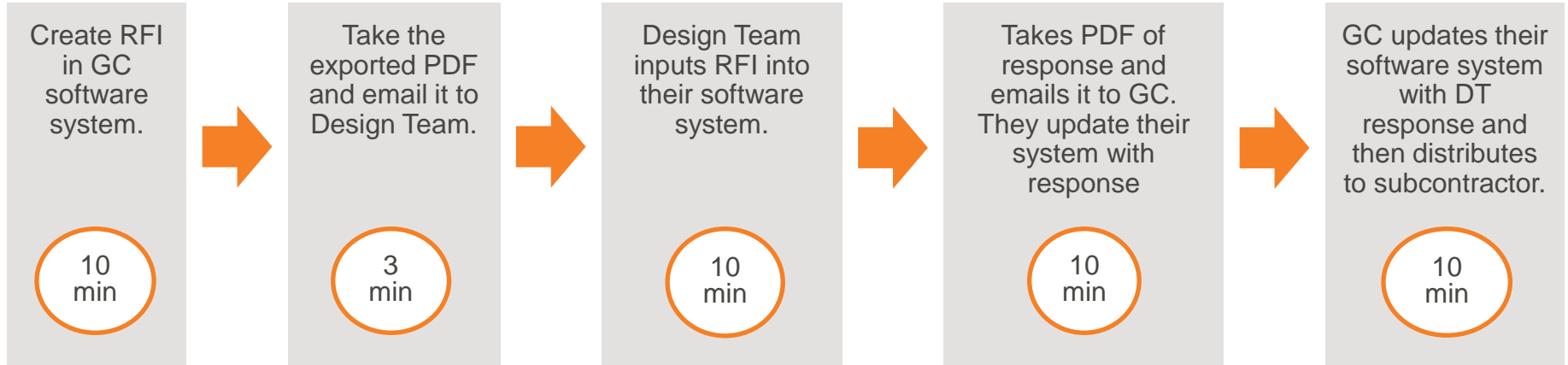
Lean Tools

- + VSM / A3
- + BIM
- + Mobile Technology
- + Project Management Software

VSM

Value stream mapping (VSM) is a lean manufacturing or lean enterprise technique used to document, analyze, and improve the flow of information or materials required to produce a product or service for a customer.

Currently



= 43 Minutes Total

Ideally



A3

One-page report that tells a story of where we are now, where we want to go, and how we want to get there. The term A3 refers to the European paper size (approximately 11x17) that is recommended that this report be produced on.

A3 No	Title	Revision	Champion	Date Started	Collaborators	Approved by:	Approved date:	Status
GC-ABC 001	Improving our RFI process using ProcCore	0		5/15/16	Mikael Reckley			<ul style="list-style-type: none"> ✓ Development → Collaborative review → Implementation

Section 1 – Problem Statement: *(use a pencil, start discussing with stake holders – what is the deviation from the standard?)*
Reduce the processing time of an RFI, remove the double entry of both the GC and the architect.

Section 2 – Background: *(Boil it down to essential info)*
Currently the GC and the architect both use separate systems to produce and RFIs which requires double entry for both parties and makes the whole process take twice as long as it needs to be for every RFI on the project.

Section 3 – Current Condition: *(What is happening now? Really? Use a pencil. Diagram steps? Collaborate with others)*
Currently GC do ...

Total Process time : 43 Minutes

Section 4 – Problem Analysis/Root Cause: *(Attack problem areas, ask the 5 Whys, use a Fishbone Diagram)*
The current process involves 5 steps, 3 of which can be improved or removed to require less time.

- Why are the architect and the GC using different software?
- How can we avoid the duplication of efforts to update two systems with the same info?
- Can we stop using the step of creating extra PDFs just to get the information out?
- Can we make it easy for the architect to respond to an RFI without having to log into yet another system?

Section 5 – Target Condition: *(Desired future state- when we're successful, our process looks like this? Indicators?)*
Using ProcCore GC can ...

Total Process time: 20 Minutes

Section 6 – Proposal – Countermeasures: *(Adjustments, things we'll do so we reach target condition)*
By using ProcCore a GC can reduce their RFI steps from 5 to 2 and save half the time it takes to execute an RFI administratively

Section 7 – Implementation Plan: *(Specific action plan through implementation)*

	What	Who	Promise Date	Outcome - Comments	Status
1.	Demo of ProcCore for this company		6/2016	Everyone is impressed	Complete
2.	Demonstrate the ROI to management		7/2016	Management gave the "go ahead" based on demonstration	Complete
3.	Sign a one year deal with ProcCore and begin training and implementation at the company		8/2014	Used in field during foundation Const.	Complete

- Cost: TBD
- Cost Benefit/waste Reduction: New process saved 23 Min & \$81.25/day, per RFI- avg RFI 1000 (reduction in use of paper, printer ink, and office supplies)
- Savings of \$31,146

Section 8 – Follow-up - Next Improvement Cycle: *(Plan, Do, Study, Adjust - PDSA)*
Not only is ProcCore improving our RFI process but it also improves our Submittal and drawing management. There are many ways this software can increase the efficiency of our engineers and superintendents while on the job. Plus the mobile app enables all field personnel to have access to all documentation and current drawings while out in the field.

Conclusion

- + Why do lean?
- + What is waste?
- + Lean construction is a mindset
- + Process vs. Tools

Q+A

Thank you!



Contact Us

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