

ABC Webinar

Presented by John Wiegand



Dispelling Myths- Lean Theory

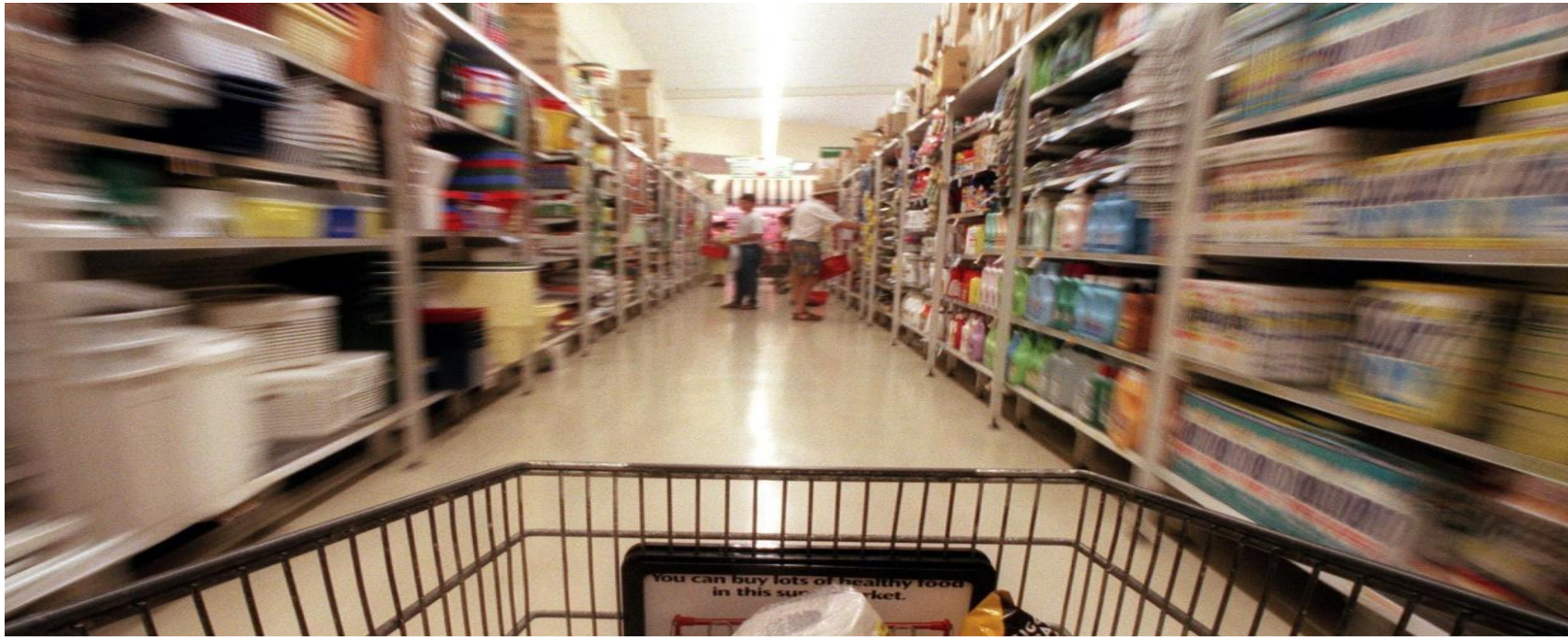


THANK YOU FOR JOINING TODAY'S WEBCAST



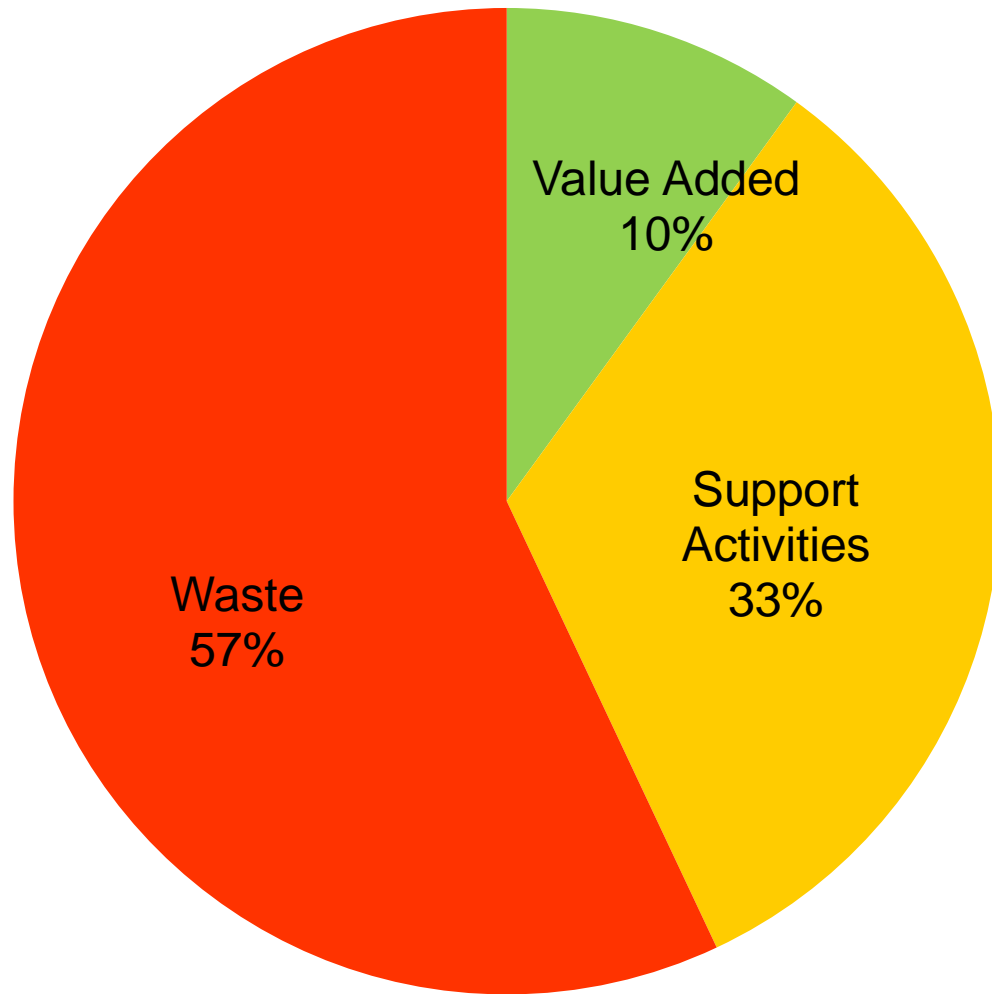
HISTORY...

- 1980 - Toyota Production System
- 1990's— Lean Construction was Established
- 1998 – Present –LPC (Lean Project Consulting), and Last Planner were established.

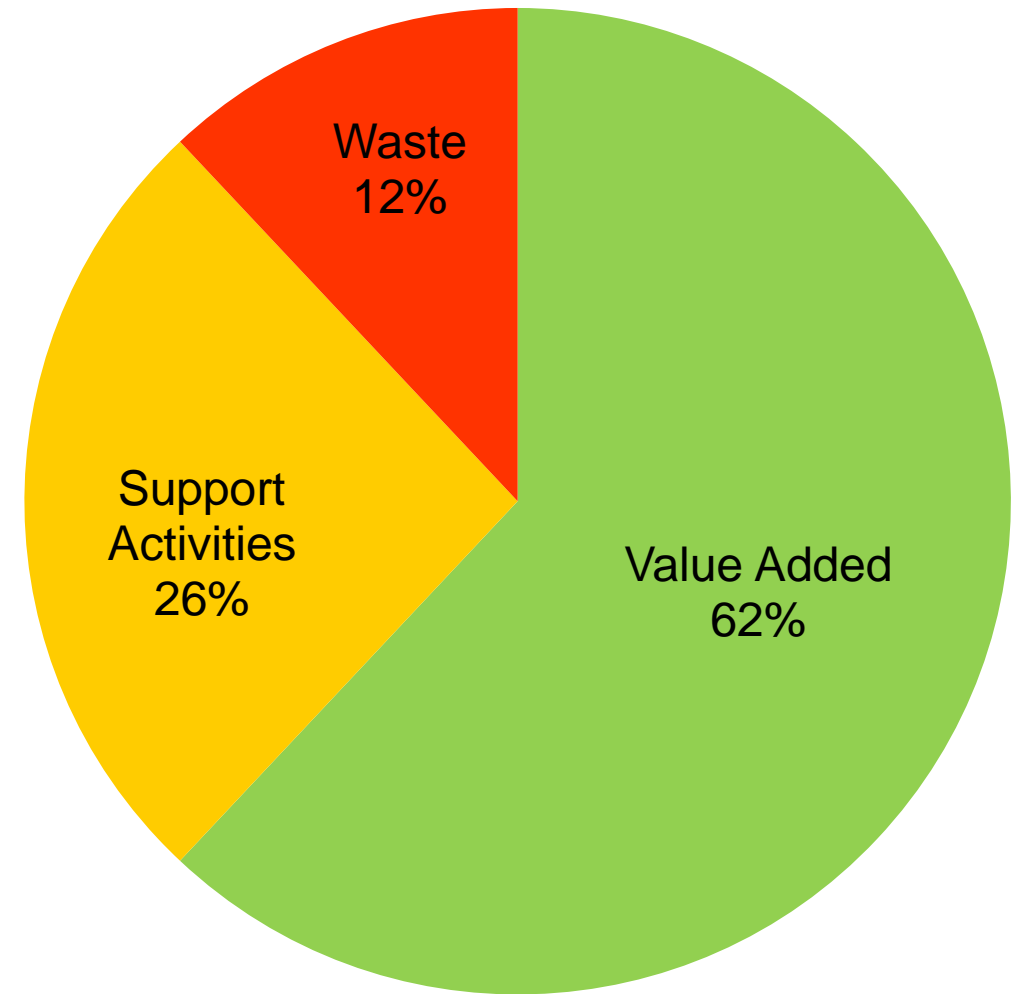


Produce and Stock Only What's Needed by the Customer

Lean: Waste/Value in Construction vs. Manuf.



(Design &) Construction



Manufacturing

Source: US Bureau of Labor and Statistics

What Lean /s...

Through **continuous improvement**
and **respect for people**, delivering
ever-increasing **value** to customers
while eliminating **waste**

From: This is Lean...

Consider how a Lean Operations Strategy can improve an architectural and engineering practice...Deliver Lean Design:

"...a creative process to prevent error and invent value."

***This is Lean* suggests that resolving sources of variation in the design process – inherently recursive and iterative – can deliver both required function (meeting the client's need) and aspirational form (meeting the architect's need) within the constraints of time and money.**

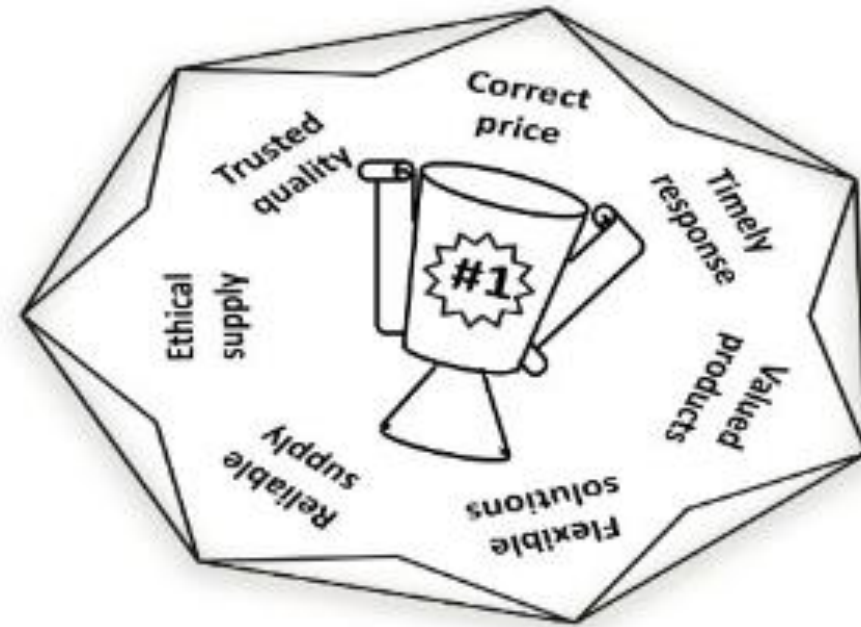
-An Architect's Interpretation, by Sam Spata, in *This is Lean*, (Nicholas Modig & Par Ahlstrom, 2015)

...or if you prefer...

Lean is nothing more than
common sense,
rigorously applied.

7 Values – Create Value for the Customer

- Correct price
- Timely response
- Valued products
- Flexible solutions
- Reliable supply
- Ethical supply
- Trusted quality



“7 wastes.... what about 7 values?”,
from The Joy of Standards, ©James Sandfield, 2016)

What is a 'Lean' product?

Custom-designed,

Low batch size/inventory,

Material efficiency,

Designed at the point of innovation,

Manufactured at the point of desire

What is 'Lean' production?

Providing the **right** information,

And the **right** materials,

To the **right** person,

In the **right** place,

At the **right** time

What is 'Lean' demand?

Providing a customized product,

Made of the desired materials,

Delivered where the client wants it,

When they want it

At a price they are willing to pay

Variation in Production Systems

- Client decision-making
- Code compliance
- AHJ review
- Systems/Component information
- Manpower planning
- Value engineering
- Scope/Process differences
- Studio/Personnel differences

Lean Supply Chain and Assembly

- Develop decision/responsibility matrix – who decides what and when
- Plan decisions & dependencies
- Plan manpower according to workflow
- Provide appropriate expertise

BIG CHALLENGES!

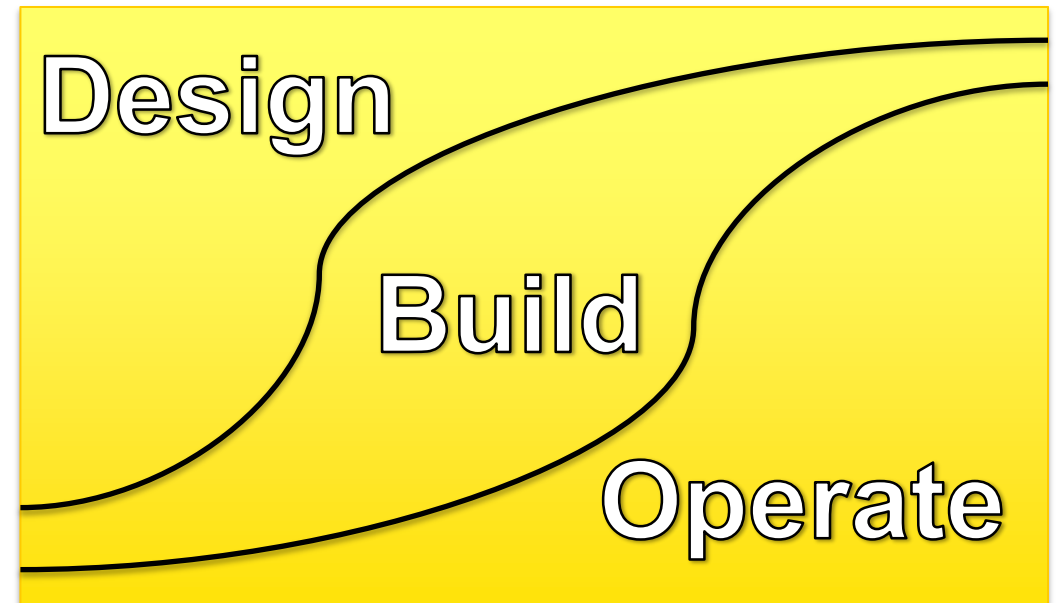
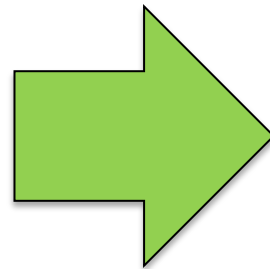
- Developing trust
- Inexperience in making commitments for planning
- Poor promising

Learn in Action
Continuous Improvement
Lead by Example

Lean and Data

Connect the silos

- Minimize handovers
- Get involved early, stay involved late



Strategic Planning

SHOULD

MASTER SCHEDULING

Managers ...

Set milestones

Identify long leads

Production Planning

SHOULD

PHASE SCHEDULING

CAN

LOOKAHEAD PLANNING

WILL

WEEKLY WORK
PLANNING

DID

DAILY CHECK-IN

Last Planners ...

Pull workflow and hand-offs

Builders plan crew flow

Identify and remove constraints

Make reliable promises to
deliver next week's work

Measure PPC for previous day

Confirm today

Remove obstacles for tomorrow

Levels of Detail in Work

Projects
consist of phases

Phases
consist of processes

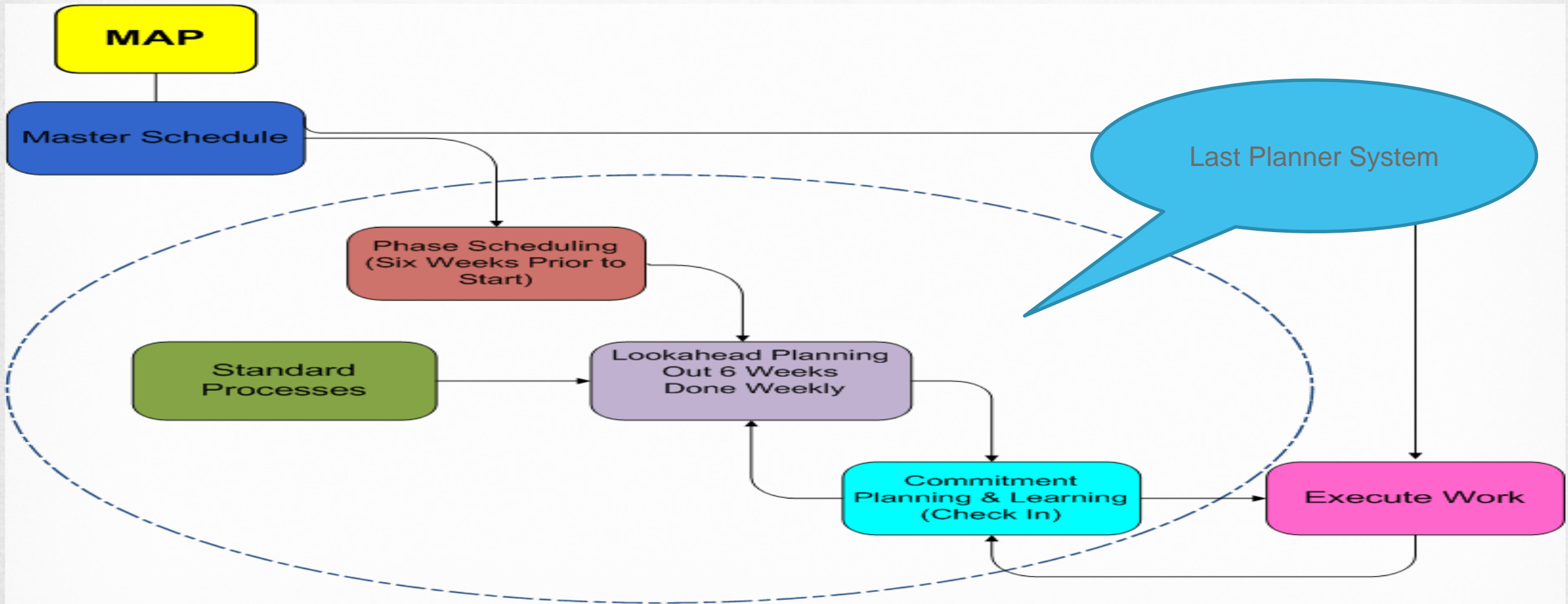
Processes
consist of operations

Operations
consist of steps

Steps
consist of motions

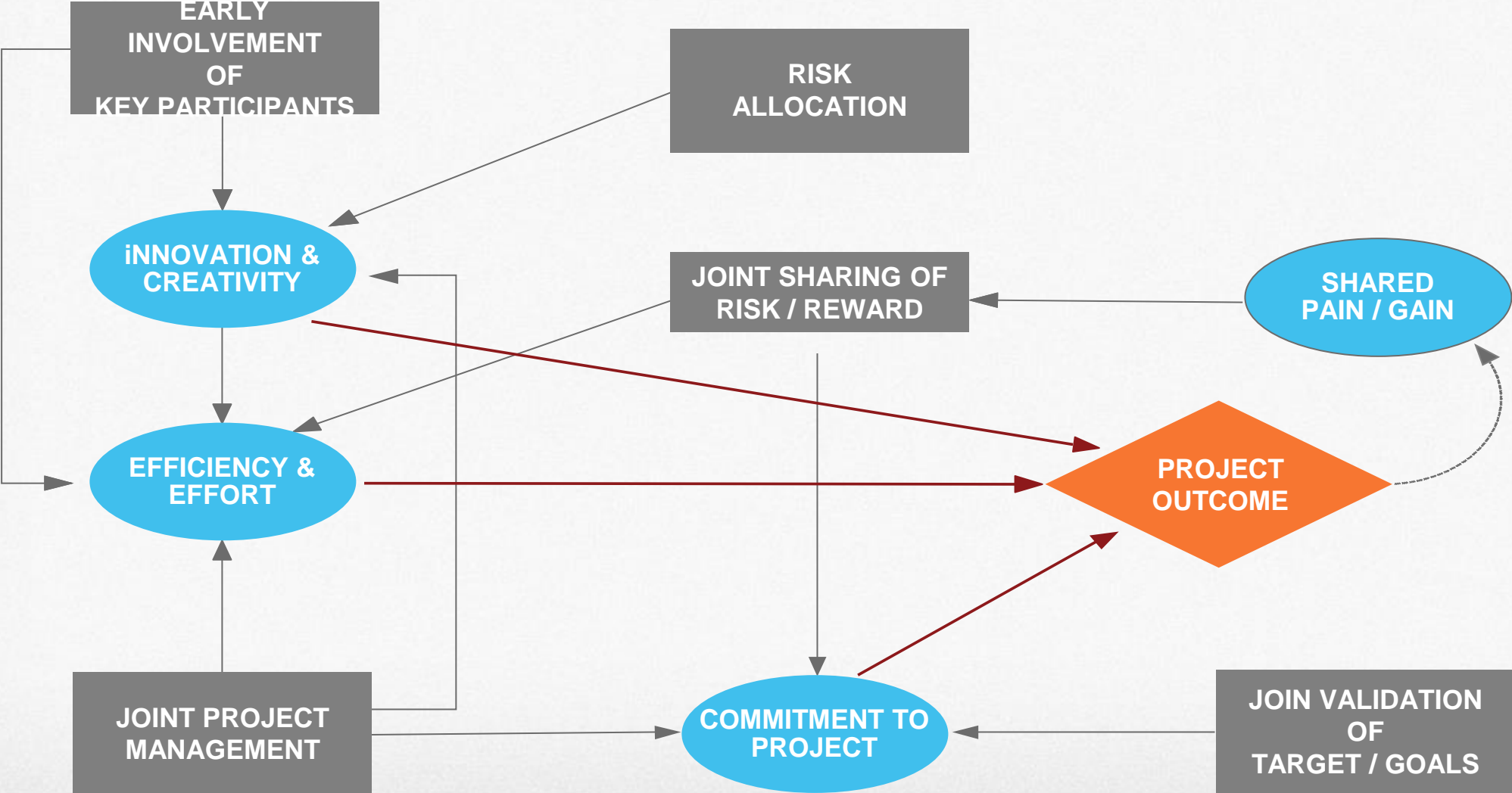
Motions
create the product

Last Planner System



AGREEMENT / STRUCTURE

IPD Elements & Outcomes



KEEPING IT SIMPLE...

- MAP – Milestone Alignment Plan (once)
- Phase Scheduling – 6 weeks before major milestones
- Look Ahead – Look 6 weeks out (once a week)
- Check In – As often as possible (preferably daily)

MPLC

MILESTONE ALIGNMENT PROCESS

Step 1

- Gather stakeholders
- Define major milestones
- Describe what “done” means

Step 2

- Stress test thru CPM

Step 3

- Reconvene -- agree on dates and deliverables



“Pull Planning” – Why?

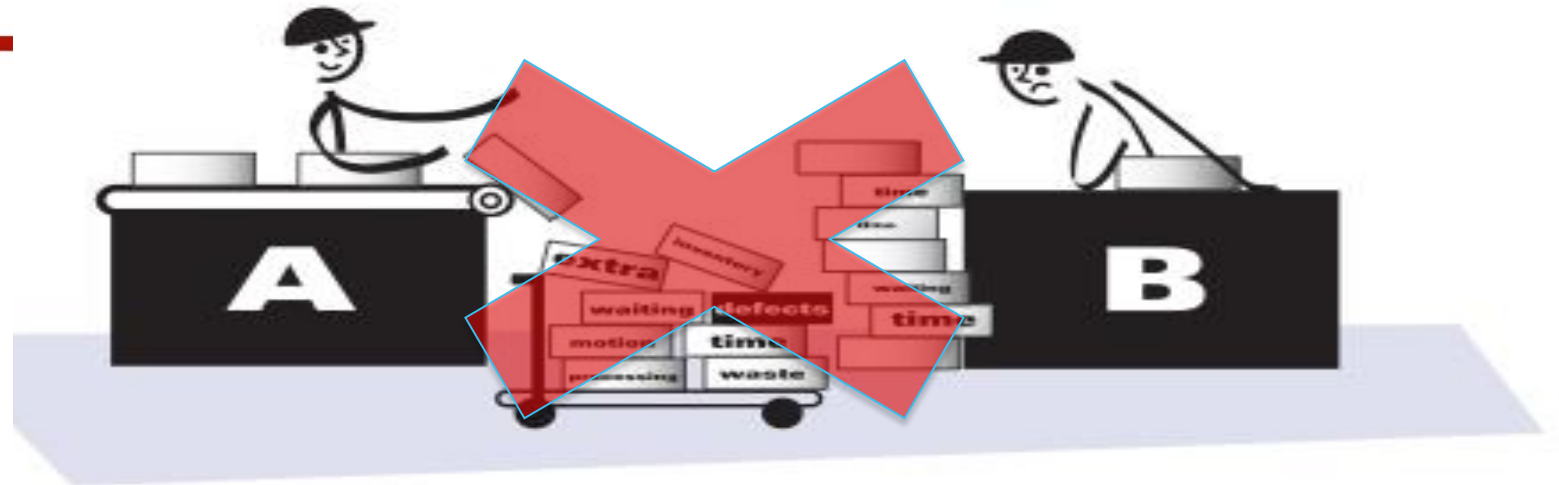
- **Why?**

Establishes the most reliable sequence of activities and their durations, and allocates float to maximize plan stability.

Pull Planning Examples



More Simply



**Pull plan to avoid producing work
that's not really needed**

**“Planning is everything,
the plan is nothing”**

Dwight Eisenhower

Involve & Listen to the “Last Planners”



Who are they?

- The onsite field supervisors responsible for making decisions and committing resources

WHO IS INVOLVED?

- Clients
 - Consultants
 - Contractors
 - Trade Partners
 - Suppliers
- ...EVERYONE!!!

BENEFITS

- Promotes early trade partner engagement
- Projects on track
- Trust, openness & honesty
- Improves communication
- Improves visibility(transparency)
- Understand the risks
- Predictable workflows

LEAN THINKING

5 PRINCIPLES FOR ELIMINATING WASTE

1. Identify VALUE
2. Map the VALUE STREAM
3. Make value-creating steps FLOW
4. At the PULL of the customer
5. Strive for PERFECTION

JAMES WOMACK
in Lean Thinking

5

PRINCIPLES TO ELIMINATE
WASTE

WASTE IN CONSTRUCTION

OVERPRODUCTION	Putting as much work in place as possible, making it harder to do priority work Ordering additional material because of poor quality or fit
WAITING	For materials, direction, information or prerequisite work and design completeness
INVENTORY	Information or material delivered before it is needed
MOVEMENT	Moving materials from one place to another before installing it
EFFORT	Returning to the shop to pick up plans, materials or tools not at the site Hunting for information or tools
REWORK	Incomplete Design Re-doing work because of lack of quality
PROCESSING	Recreating work because it cannot be shared Unnecessary reporting Expediting material not ordered in time Excessive coordination of multiple levels of suppliers

LAST PLANNER OVERVIEW...

- Conversations & Collaboration
- Network of Commitments (Promises)
- Create Reliable Workflow
- Continuous Improvement

CONTINUING THE DISCUSSION



Register for the upcoming webinar on February 2ND

Six Critical Factors to Lean Construction Success

Presented by John Wiegand

[SAVE YOUR SEAT](#)



LIVE WORKSHOP EVENT! On the Road with ABC: South Florida

Thursday, February 16 – Coconut Creek, FL

[SAVE YOUR SEAT](#)