Kaizen: What, Why and How

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"LCI would like to acknowledge and thank Brian Winningham, Field Driven Lean, and Annmarie Thurnquist, Jacobs, for their leadership, work and collaboration to create this workshop. Learning opportunities like this exist because people like Brian and Annmarie engage to create them."

-Kristin Hill,

LCI, Director Education Programs

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LCI Course:
Kaizen Events – Why, What and How
4 CEU

Sign the sign-in sheet for credit

Housekeeping

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Rules of Engagement

This is a safe zone

Everyone has equal status

Speak up and share your ideas

Actively listen to others

One conversation at a time

Use E.L.M.O.

Silence phones

Be focused and engaged

Stay on time

Have fun!

Learning Objectives

Understand the importance of incorporating Kaizen into daily team work to improve outcomes.

Understand how Value Stream Mapping, the 8 Wastes and Continuous Improvement integrate into a Kaizen Event.
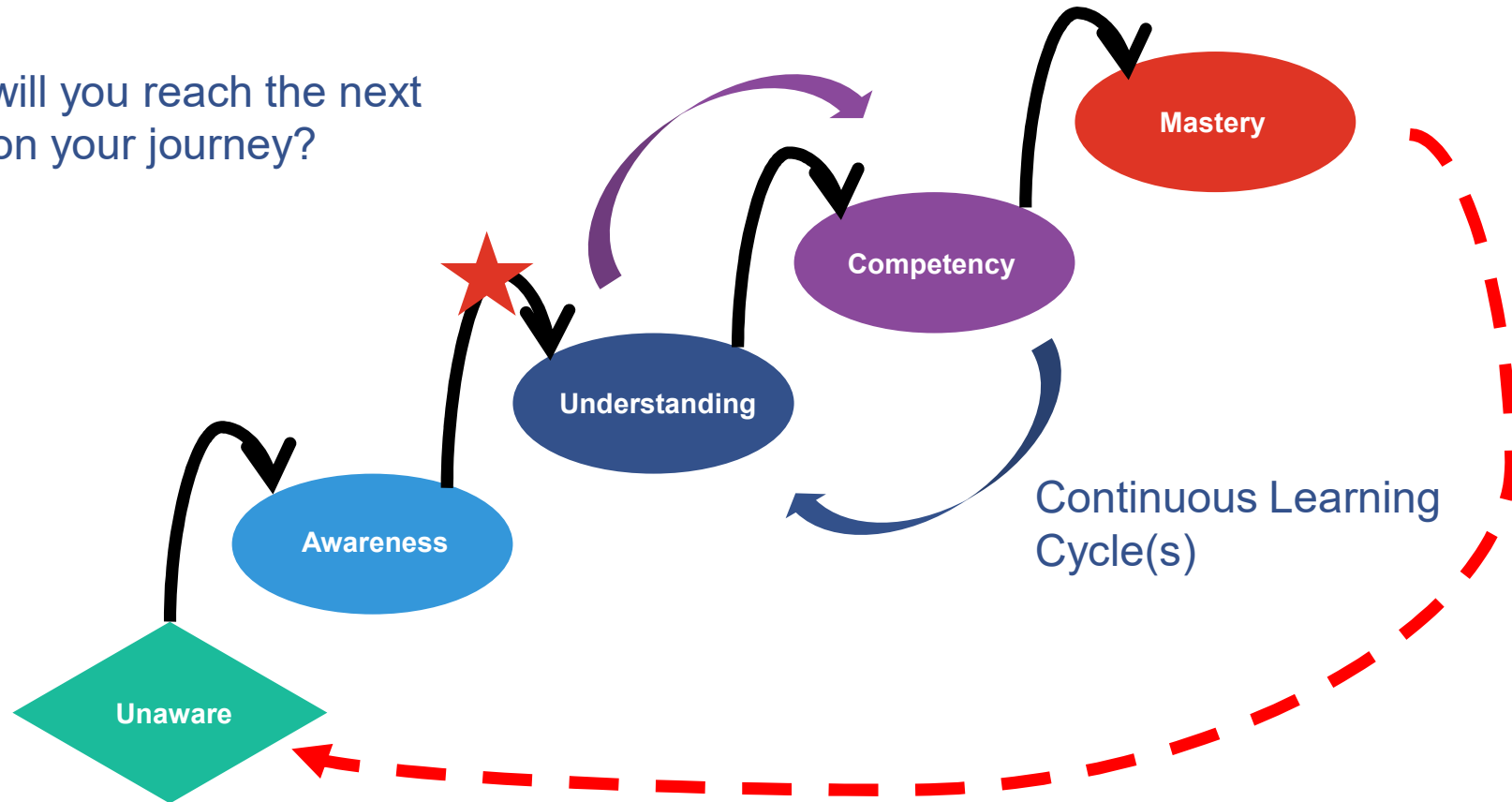
Discover key steps for conducting a Kaizen Event with your team.

Be able to engage with a team conducting a Kaizen Event.

Lean Journey to Mastery

How will you reach the next level on your journey?

Mastery

Competency

Understanding

Awareness

Unaware

Continuous Learning Cycle(s)

Introductions

Introduce yourself to your table mates
Name
Company
Role
If a genie endowed you with super athletic ability (and a super bank account) so you could quit work and train for the Olympics, which event would it be?

10 minutes

Definitions

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Lean:

Culture of respect and continuous improvement aimed at creating more value for the customer while identifying and eliminating waste.

Lean Project Delivery System:

An organized implementation of Lean Principles and Tools combined to allow a team to operate in unison to create flow.

Six Tenets of Lean

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1 Respect for people

2 Optimize the Whole

3 Generate Value

4 Eliminate Waste

5 Focus on Flow

6 Continuous Improvement

Optimize the Whole

Continuous Improvement

RESPECT FOR PEOPLE

Generate Value

Focus on Flow

Eliminate Waste

What: Kaizen Defined

Kaizen (Continuous Improvement) is a strategy….

- Employees at all levels of a company work together proactively to achieve regular, incremental *improvements* to processes.

- It combines the collective talents within a company to create a *powerful engine for improvement*.

Kaizen

- Purpose is the long-term betterment of "something"
- Through a team approach
- Without large capital investments

Kaizen stresses the significance to the shop floor (actual workers) to continuous improvement

Masaaki Imai, author of "Kaizen: Japanese spirit of improvement", founded the Kaizen Institute Consulting Group (KICG) in 1986 to help western companies to introduce the concepts, systems and tools of Kaizen.

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Kai = Continuous
Zen = Wisdom or Improvement

Small changes at all levels that lead to gradual modifications improving productivity

What: Continuous Improvement

Lean thinking demands a *mindset of continuous improvement.*

This requires an environment where we can discuss what's not working well and find fixes.

What: Kaizen Purpose

1. Problem solving to *return* a situation to standard.

2. Studying a process to *improve* on the standard.

What: Four Methodologies

1. Kaizen Teian – Bottom-up daily continuous improvement

2. *Kaizen Events – Defined improvement event*

3. Kaikaku (blitz) – Radical organizational change

4. Kakushin – Breakthrough innovative change

What: Kaizen Bottom-up

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- Daily improvements

- Actively involves all people in improving their own processes

- Drives a cultural transformation

- Requires everyone to think about improvement every day, everywhere

- Workers who are in the gemba are those more likely to identify real opportunities for improving the flow of their processes

- Paul Aaker's 2-second Lean continuous improvements

2 Second Lean™
How to Grow People and Build a Lean Culture
Paul A. Akers
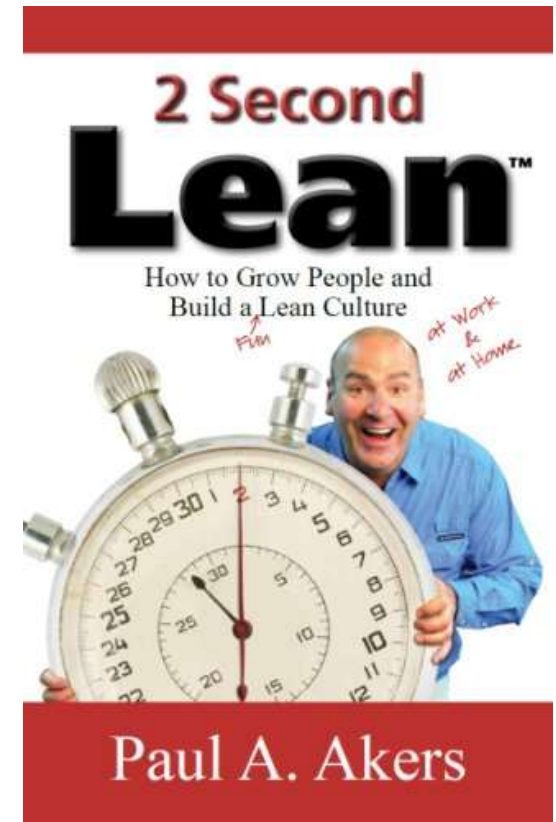
What: Kaizen Event Defined Improvements

- Specific process improvement
- Focused improvement projects
- Typically involve Value Stream Map (VSM)
- Might last for several days or even weeks
- Lead to change in efficiency, quality or performance
- Must be aligned with broader operational goals

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Kaizen Event - "Blitz"

- Kaikaku

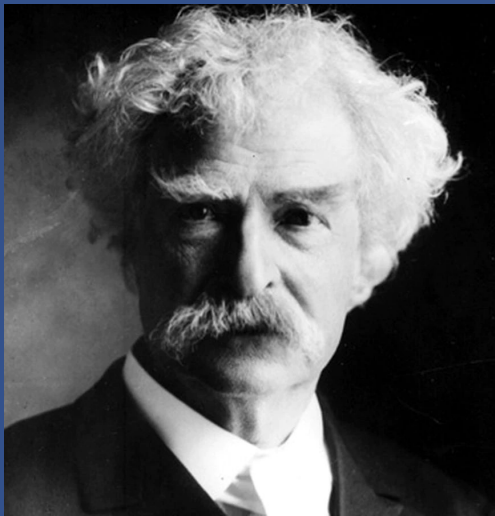- Short term project to improve a specific procedure or process

- Intensive

- Usually one week

- 8 to 10 people

Discussion

What's wrong with the traditional method of implementing improvements?

10 minutes

Why:

"*Continuous improvement is better than delayed perfection.*"

~ Mark Twain

Resource: AZ Quotes

Why:

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"Eighty-five percent of the reasons for failure are deficiencies in the systems and process rather than the employee. The role of management is to change the process rather than badgering individuals to do better."

~W. Edwards Deming

Resource: AZ Quotes

Why:

"Progress cannot be generated when we are satisfied with existing situations."

~Taiichi Ohno

Resource: AZ Quotes

Why: Benefits

- Immediate results by focusing on people & making small changes

- Improved product quality, communication, or competence

- Increased efficiency and productivity

- Decreased cost

- Reduced waste

- Employee satisfaction and teamwork

- Customer satisfaction

Why: Exploring the Wastes

Why: Waste Defined

Waste is any activity that requires time or resources but does *not create value* as defined by the customer.
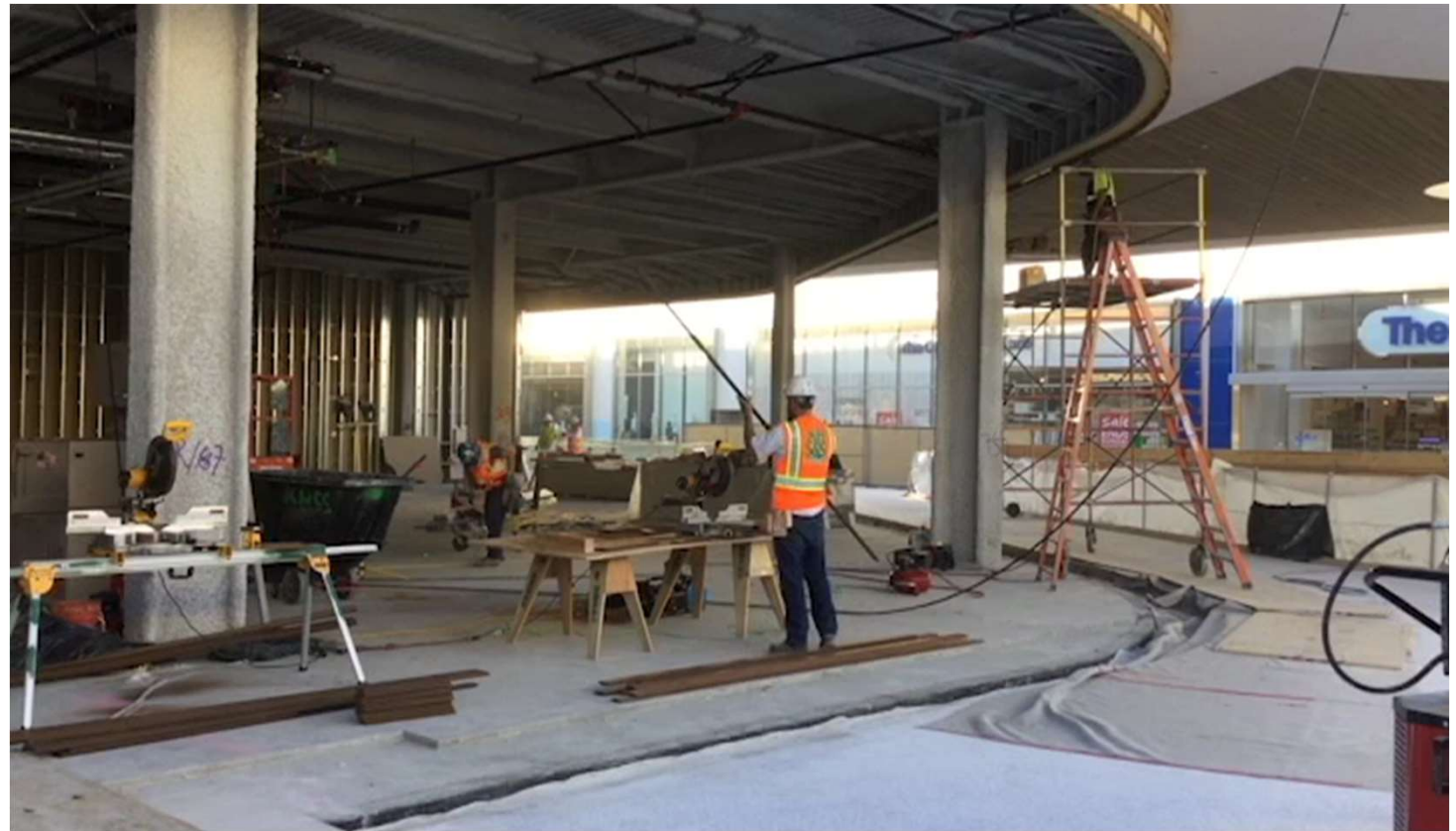
Let's talk about waste

- Muri – overwork by person or machine

- Muda – wasteful work

- Mura – unevenness or irregularity

4. Identify the Waste

Defects (D)

Over Processing (O)

Waiting (W)

Non-used Creativity of Team Members (N)

Unnecessary Transportation (T)

Excess Inventory (I)

Unnecessary Motion   (M)

Excess/Under Production (E)

Why: Gemba Waste Walk

Courtesy of KHS&S contractors

Why: Gemba Kaizen Improvements

Courtesy of KHS&S contractors

Discussion

Discuss typical processes in design and construction
where you see waste
- Make a list

5 minutes

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How: Kaizen Events

- Aim for *process improvement*

- Led by a *facilitator*

- Defined *roles* for team members

- Include members from all *stakeholder departments* including *management*

- Part of an *overall program* of continuous improvement to be successful

- Short duration project typically *3-5 days*

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Kaizen goals

1. Continuous improvement

2. Remove waste / non-value-add activities

3. Develop pull system / Kanban

4. Standardize work

5. Quality management

How to achieve goals

1. Variation Reduction
2. 5S
3. Process oriented thinking
4. Employee involvement
5. Poka-yoke (error proofing)
6. Visual Factory
7. Value Stream Mapping
8. Suggestion Systems

Variation Reduction

- Voice of the Customer defines needs or demands

- Quality metrics are determined for each product or service

- Process details are designed to meet the quality metrics

There must be standards to have Kaizen!

5S

5S could be an *actionable outcome* of a Kaizen event

Process Oriented thinking

- Is in opposition to "results-oriented" thinking

- Analyze the process to determine the causes of problems and successes

- Fix the process and people will succeed in their work

Employee Involvement

- 10 people's ideas are better than one

- Increased employee empowerment

- Delegate responsibility to workers

Poka-Yoke – Error Proofing

- Utilizes a cause-and-effect analysis

- Type 1 – eliminate process from occurring (process control)

- Type 2 – detection application (stop the line) – Andon cord

Visual Factory

- How information is communicated in a lean environment
  - Establish information to be conveyed
  - Current vs Future state
  - Show the way things are done

Value Stream Mapping

- Current state is mapped
- Identify and eliminate waste
- Provide process map for the future state
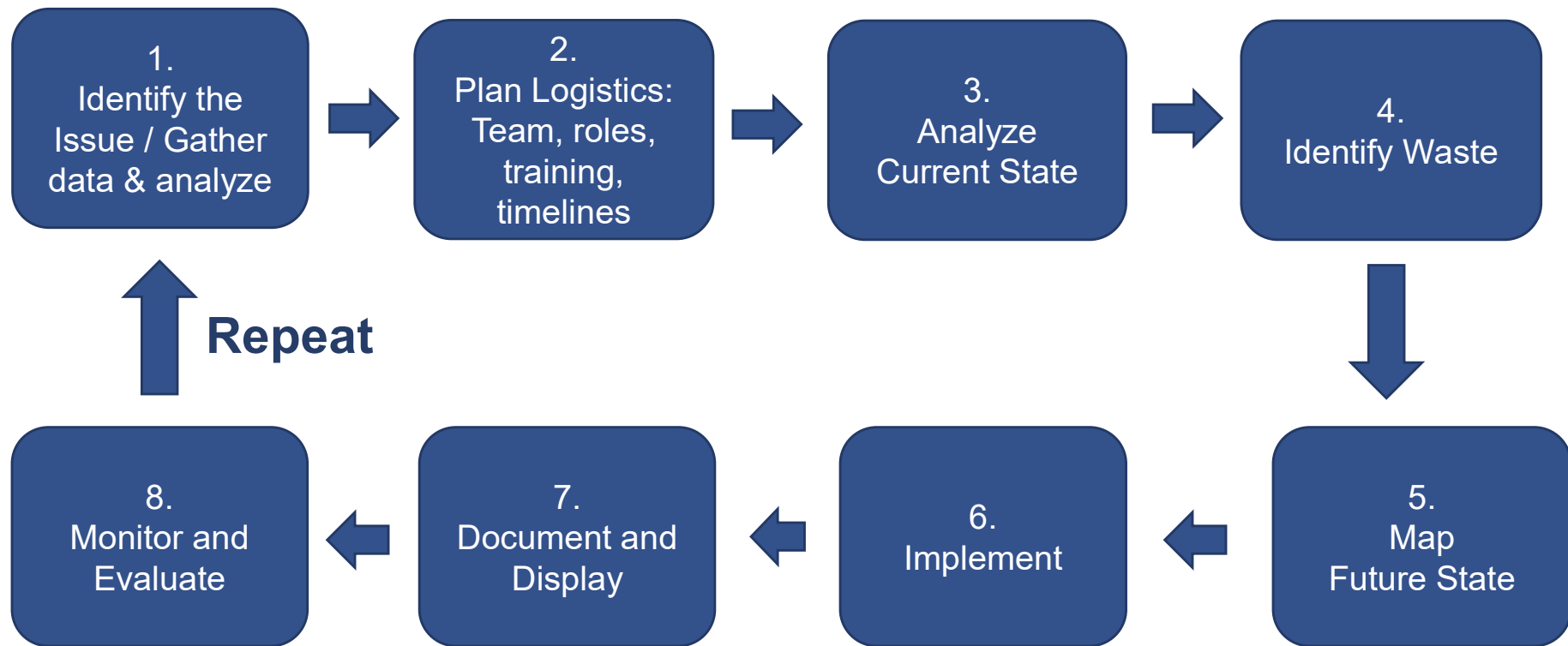
Suggestion Systems

- Management support must be clear, quick, and consistent

- Program structure should have a single administrator with a team of employees from all areas to review

- Visibility of the program must be consistent from rollout to implementation

- Recognition and rewards should include thanks for participating and notification within a month whether the idea is adopted

The Process

1. **Problem statement**
   1. Determine the issue to be resolved or area for improvement
   2. Define roles and responsibilities

2. **Objective**
   1. Choose an aim (zero defects; reduce cost; increase profits)

3. **Baseline or metric**
   1. Analysis of variance
   2. Control charts
   3. Time studies

How: Kaizen Flow

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1.
Identify the Issue / Gather data & analyze

→

2.
Plan Logistics:
Team, roles, training, timelines

→

3.
Analyze Current State

→

4.
Identify Waste

↓

8.
Monitor and Evaluate

←

7.
Document and Display

←

6.
Implement

←

5.
Map Future State

Repeat ↑

1. Identify the Issue

Determine the *process* to improve

Gather data

Analyze

Activity: 1. Identify the Process

Identify a process to improve from the list:

1. Typical change order process

2. Typical RFI process

3. Typical trip from home to LCI Congress (flying)

4. Other

5 minute discussion

2. Plan Logistics

- Appoint a skilled *facilitator*
- Ensure *leadership* is engaged
- Set the *scope and limits* of the event
- Assemble the *stakeholder team*
- *Assign* roles and responsibilities
- Define success or *CoS*
- *Train* as necessary
- Create the event *timeline*
- Plan the *space* for the event

Activity: 2. Plan Logistics

- Appoint a *facilitator*
- Ensure *leadership* is engaged
- Determine *stakeholder team* and *assign roles* to play
- Set the *scope and limits* of the event

5 minute discussion

3. Analyze the Current State

- Determine the scope of the process
- Observe the process and gather data (Gemba)
- Create start and end points
- Identify the steps of the process
- Add timing and other data for each step
- Identify inefficiencies
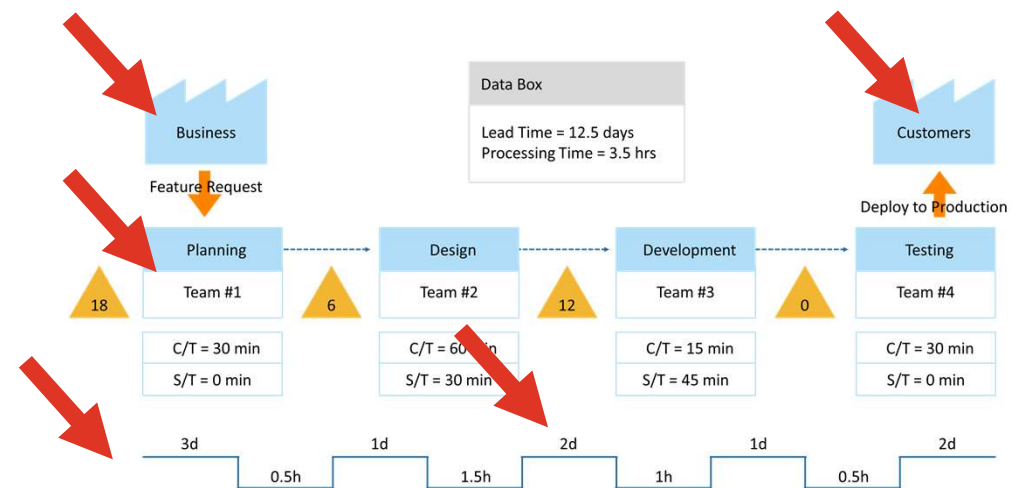
Tools to understand the Current State

Need a statistical / quantitative study on which to base improvements

- Affinity Diagrams
- Tree Diagrams
- Interrelationship Diagraphs
- Matrix Diagams
- Prioritization matrices
- 5 Why

- Process Decision program charts
- Arrow Diagrams / CPM scheduling
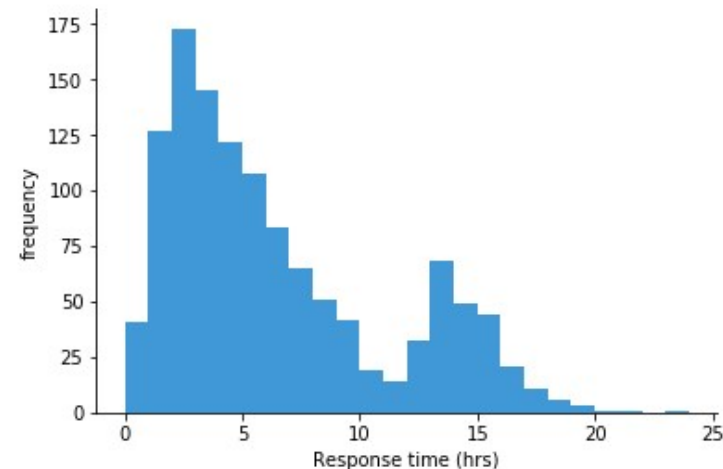
How: Value Stream Map

- VSM is a visual map of material and information

- Method for analyzing the current state and designing a future state for the series of events that take a product or service from the beginning of the specific process until it reaches the customer.
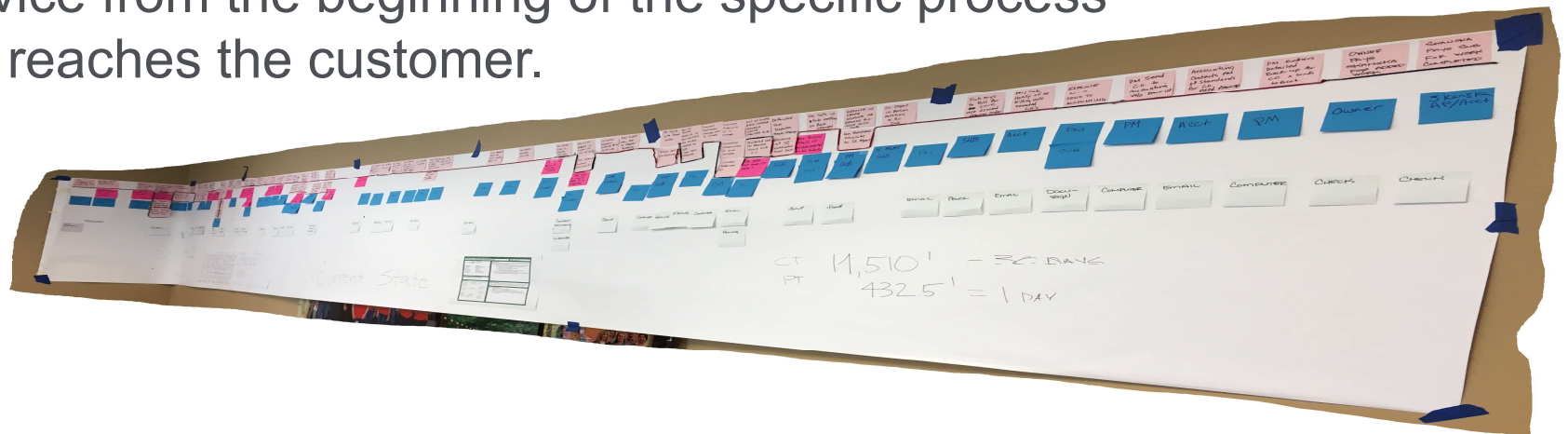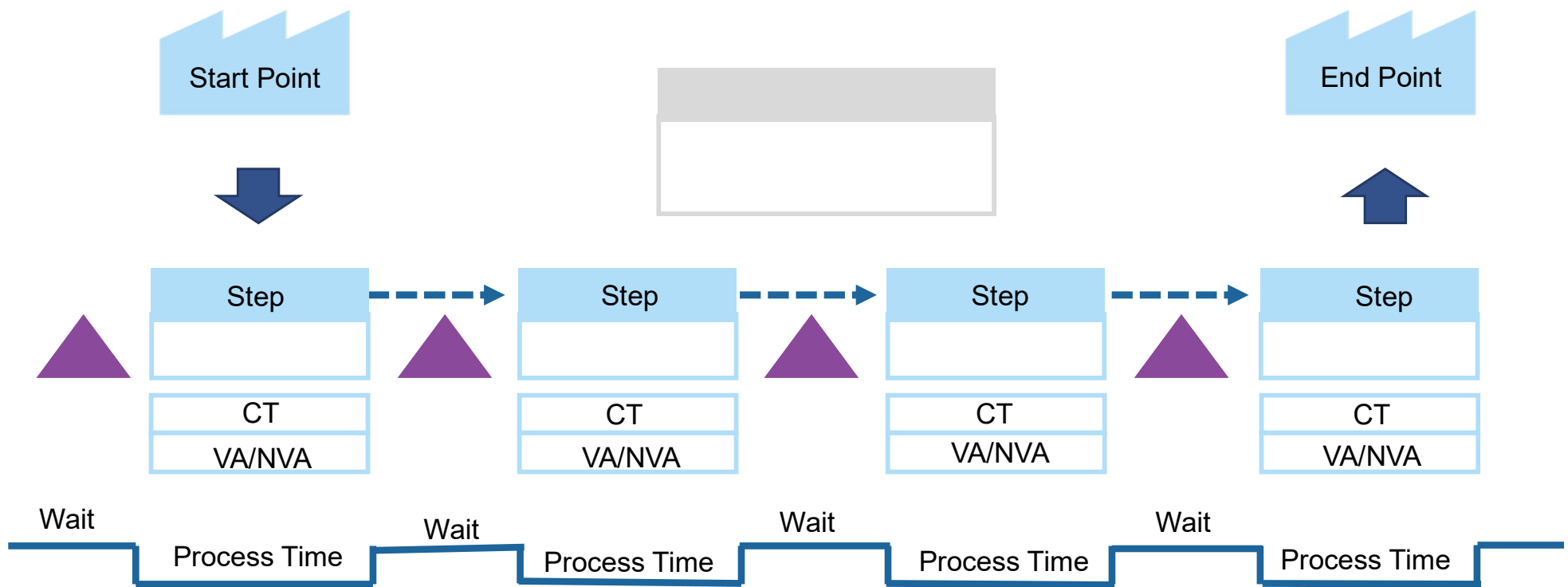
Activity: 3. Analyze the Current State

Using post-it notes layout a typical current state for your process

Discuss what other tools you would use to analyze your process

20 minute discussion

How: Create the VSM

Start Point

End Point

Step		Step		Step		Step
CT		CT		CT		CT
VA/NVA		VA/NVA		VA/NVA		VA/NVA

Wait
Wait
Wait
Wait

Process Time
Process Time
Process Time
Process Time

4. Identify the Waste

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- Over/Under Production
- Waiting
- Unnecessary Transportation
- Over Processing

- Excess Inventory
- Unnecessary Motion
- Defects
- Unused Creativity of Team Members
(Not listening/Not speaking up)

Activity: 4. Identify the Waste

Identify the waste in the process

_____

10 minute discussion

5. Map the Future State

Map the new process with:

- Waste removed
- Non-value added but necessary processes minimized
- Stop-the-line features included to ensure quality
- Agility to make future improvements

How: Create the Future State

- No restrictions!
- Imagine what could be…
- Open yourself up to change.
- Is it or could it be possible?
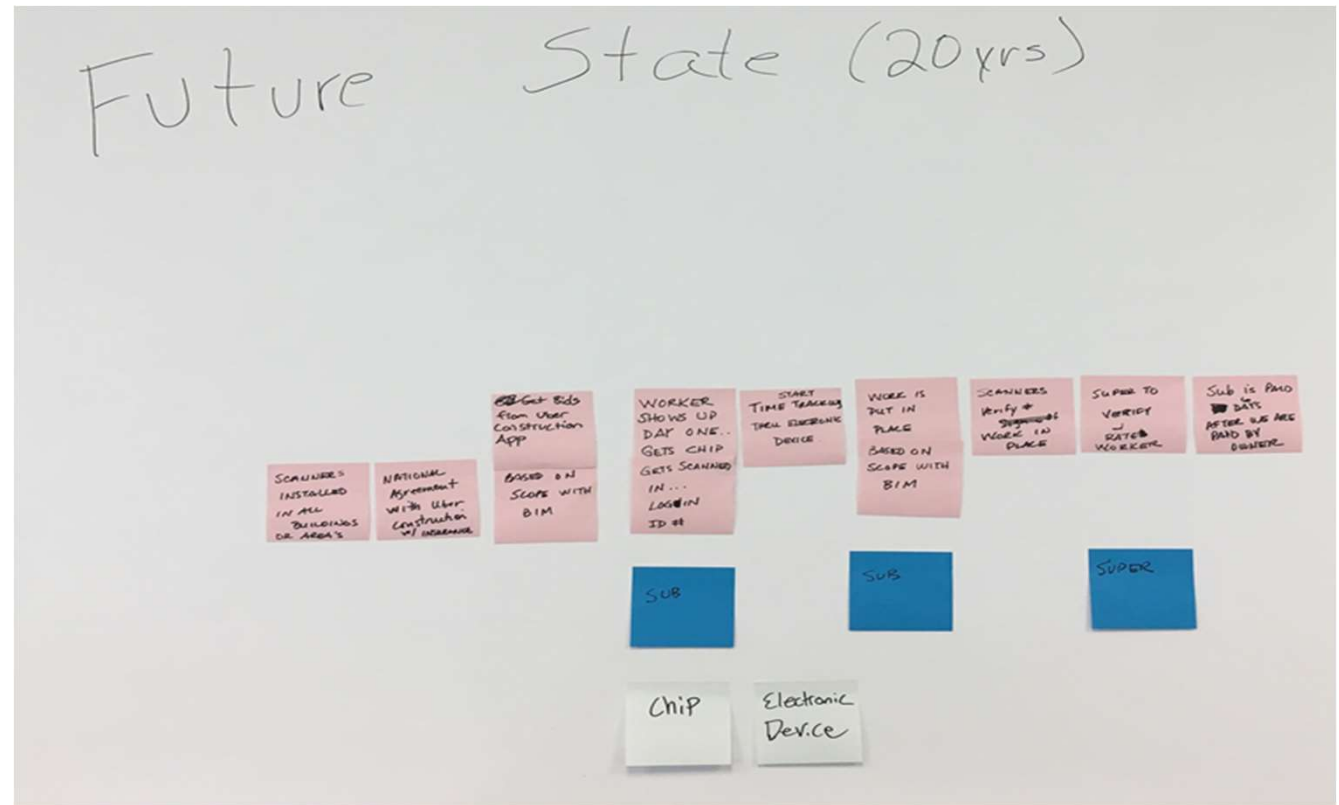- Instead of asking why? Ask why not?
- Map it!
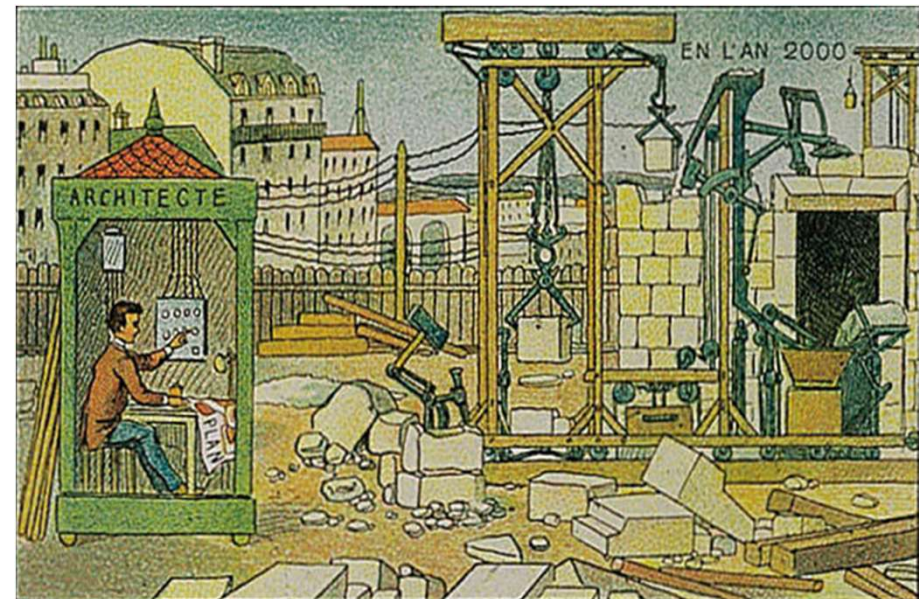
How: Current State Map

From this…

How: Future State Map

To this…

Activity: 5. Map the Future State

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Map your future state

_____

15 minute discussion

6. Implement

Rollout the new process!

Plan for
- Training
- Work decrease during the Kaizen event
- Work stoppage if radical change is needed

Enable employee participation
- Set up a suggestion system
- Provide forum for questions
- Create a follow-up system to address issues that arise during / as a result of the changes.

7. Document and Display

- Where everyone can see
- For future reference
- To instill a habit of self-inspection

8. Monitor and Evaluate

- Establish process metrics
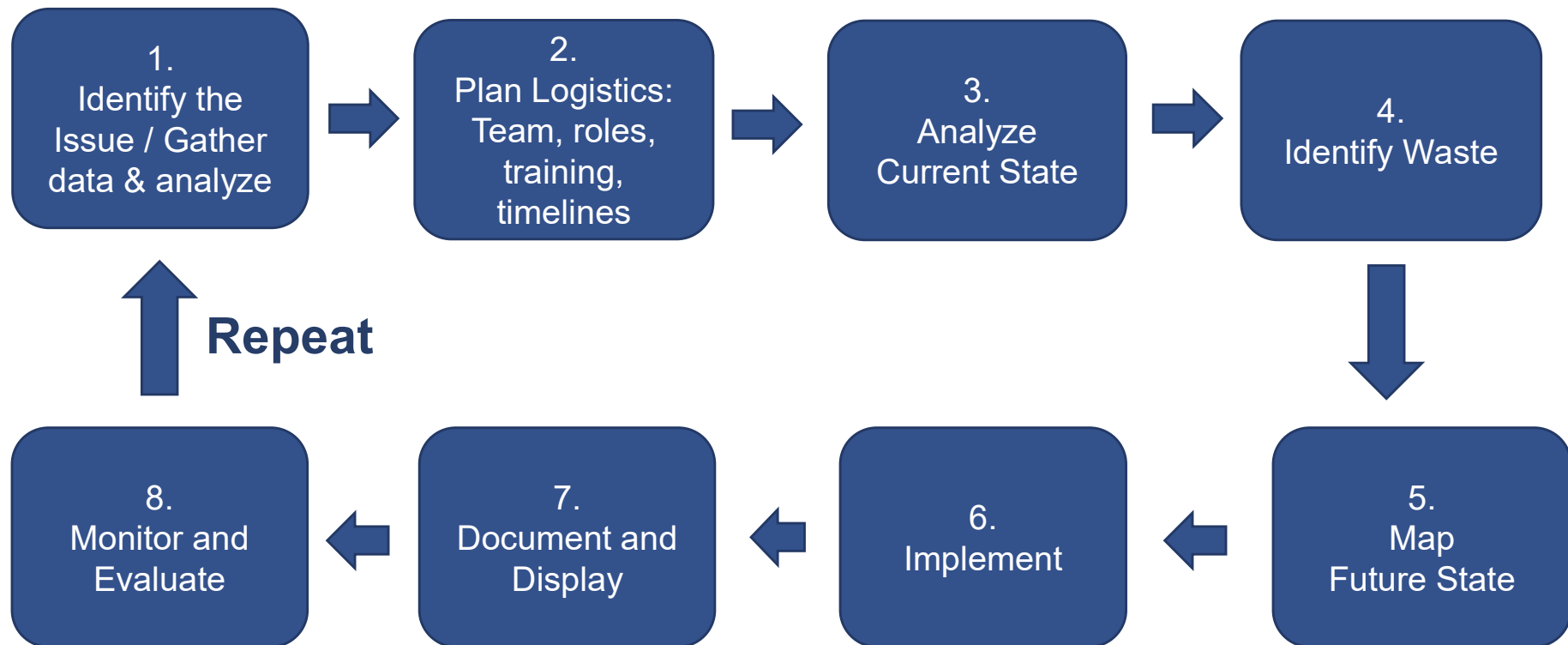- Visually track progress

Repeat

Work towards an *Ideal State Map:*
How would you setup the process from scratch?

- No boundaries
- All the money needed
- All the people needed
- All the resources wanted

Think *outside the box* time
Future State becomes more *transformational*

How: Kaizen Flow

1.
Identify the
Issue / Gather
data & analyze

2.
Plan Logistics:
Team, roles,
training,
timelines

3.
Analyze
Current State

4.
Identify Waste

Repeat

8.
Monitor and
Evaluate

7.
Document and
Display

6.
Implement

5.
Map
Future State

The Canons of Kaizen

1. Contemplate, debate, analyze the process.

2. Focus on whole goal, not short term

3. Review current strategies to correct system flaws

4. Focus on people resources

5. Don't spend a lot of money

6. Make changes as soon as errors are found

7. Welcome suggestions from everyone

8. Improvement is the end all

9. Challenge conventional methods and thinking

10. Make sensible decisions

How: Kaizen Cycles

Kaizen Future State 1

Kaizen Future State 2

Kaizen Future State 3

Ideal State

Continuous Improvement

Current State
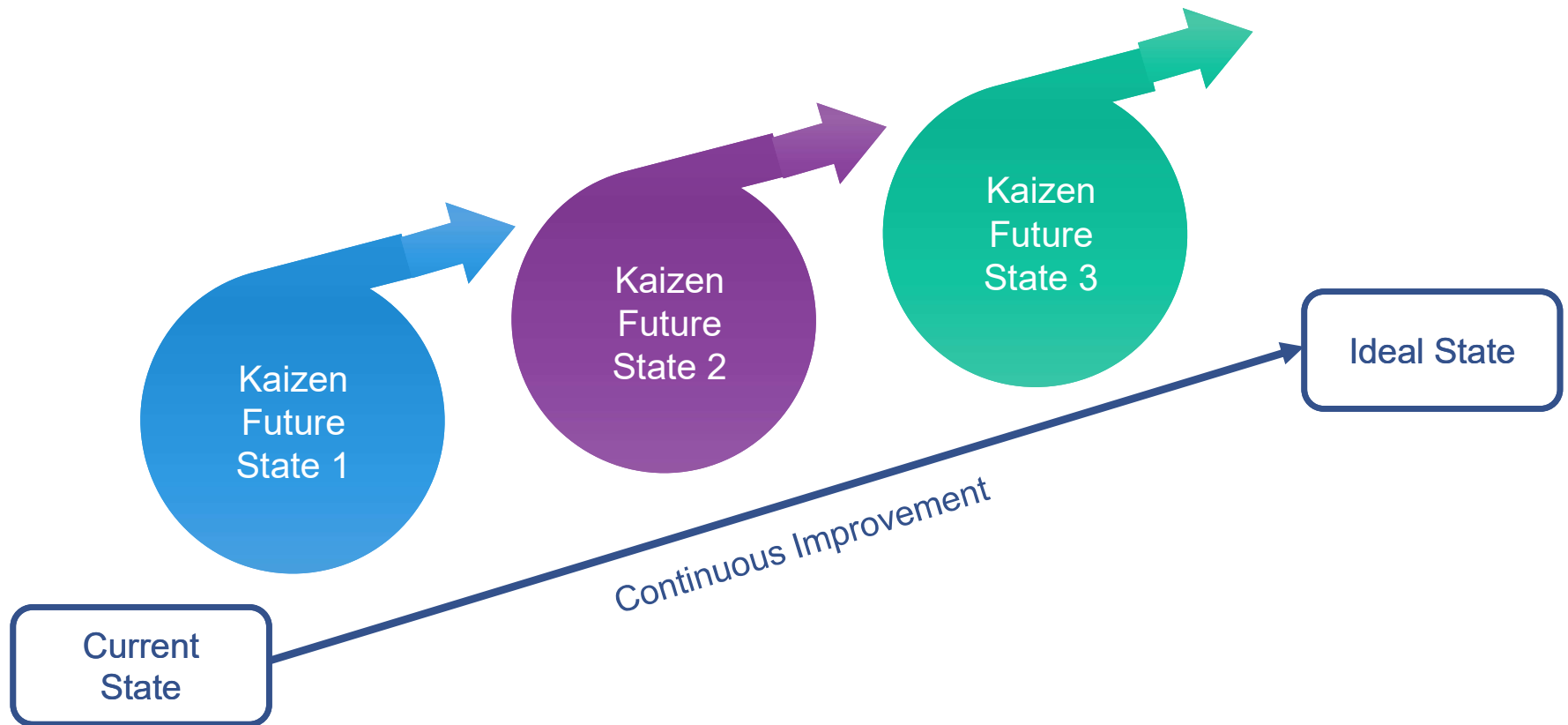
Keys to success

- Kaizen improvements should never be used to downsize the workforce

- Workers should receive wage increases and be cross-trained as a result of Kaizen

Making it work

- Provide the required infrastructure
- Provide recognition – awards, incentives
- Monitor quality initiatives

Kaizen: A Deeper Meaning

- Kaizen becomes a *learning process* not an *improvement process*

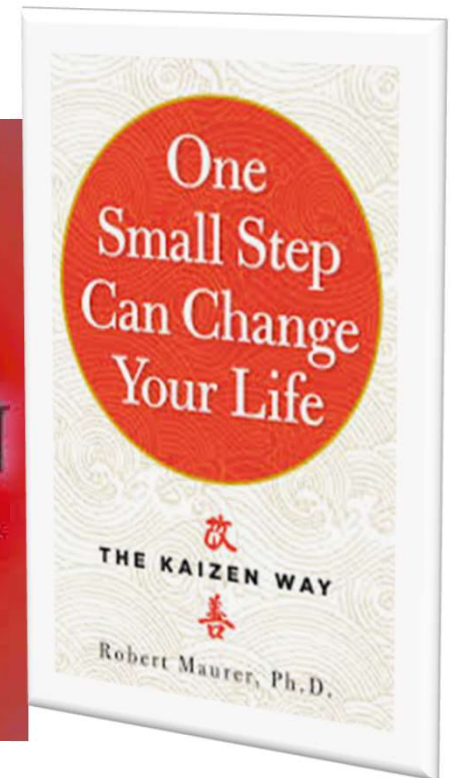- Kaizen becomes a *people improvement system* not a *process improvement system*
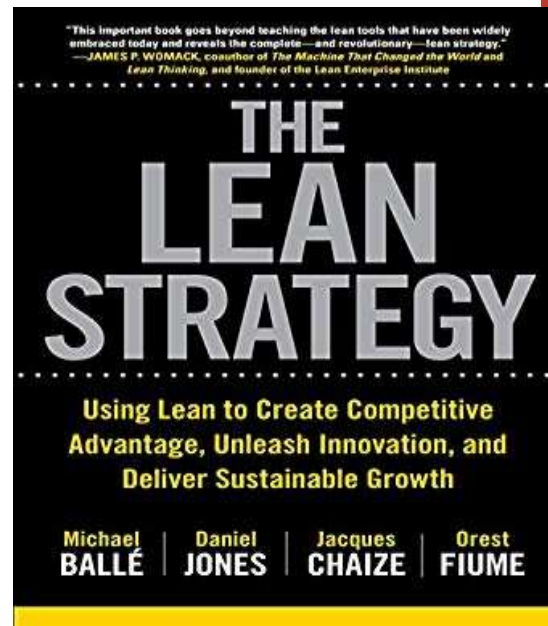
Discussion Question

How to Implement Lean?

What new actions or ideas that you learned today can you take back to your project?

Learning Resources

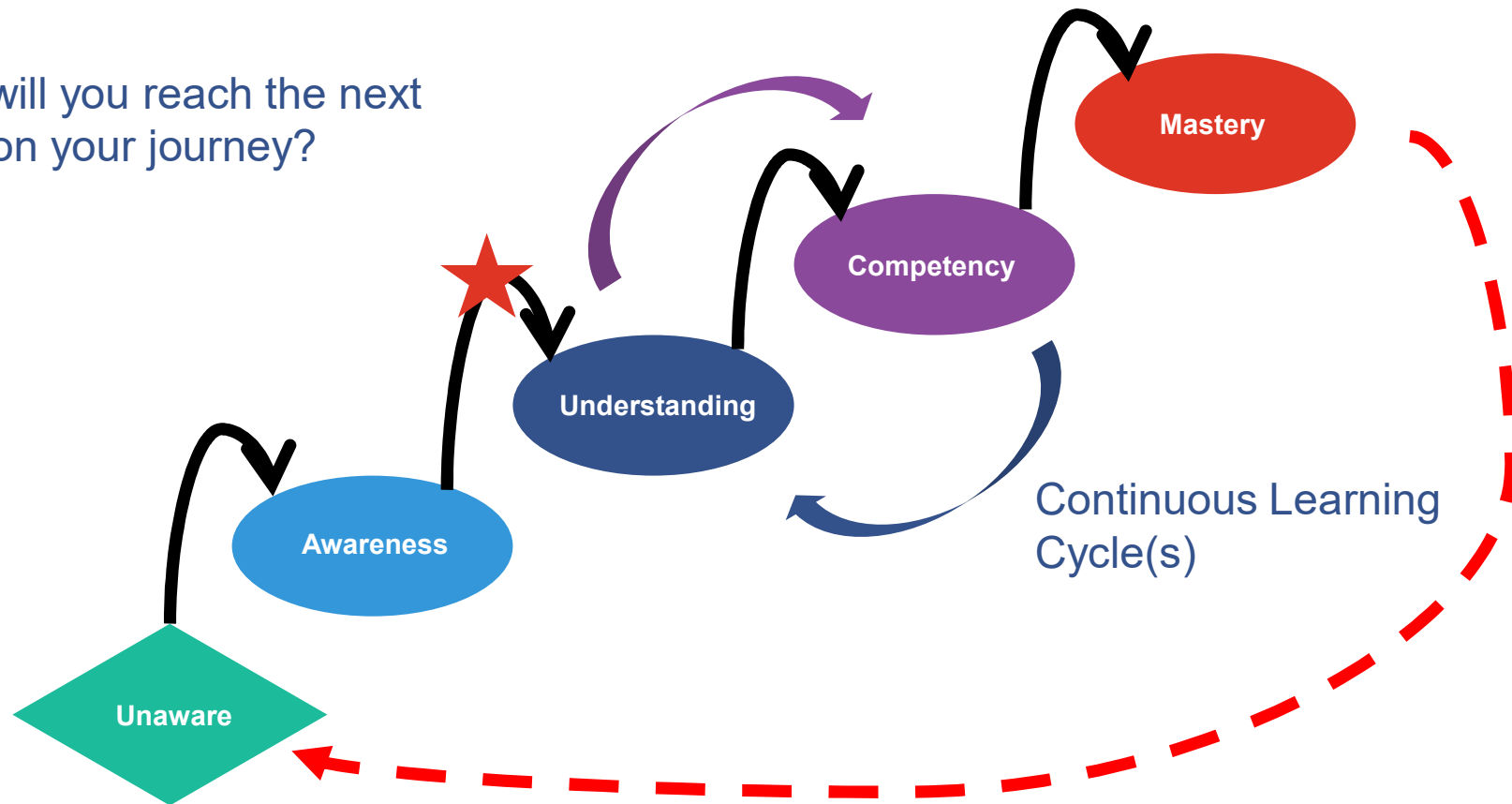Resources used in the development of this course include:

Learning Objectives

✅ 1. Understand the importance of incorporating Kaizen into daily work.

✅ 2. Understand how Value Stream Mapping, the 8 Wastes and Continuous Improvement integrate into a Kaizen event.

✅ 3. Understand the steps to conducting a Kaizen event or workshop.

✅ 4. Be able to engage with a team in a Kaizen workshop

Lean Journey to Mastery

How will you reach the next level on your journey?

Continuous Learning Cycle(s)

More on Learning

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Books:

Events:
- Local Community of Practice
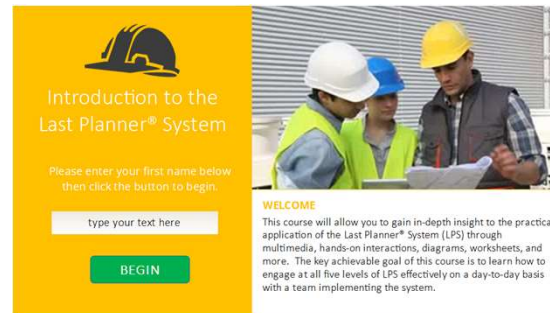- Congress (October)
- Design Forum (May)

eLearning:
Learn on your own time without taking time off project work.

Start learning now:
www.LeanConstruction.org

eLearning Courses

- Introduction to the Last Planner System®

- Introduction to Lean Project Delivery

- Lean in the Design Phase

- Effective Big Room

- Target Value Delivery

- Last Planner System® in Design

Questions?

Learning Objectives Review

Understand the importance of incorporating Kaizen into daily team work to improve outcomes.

Understand how Value Stream Mapping, the 8 Wastes and Continuous Improvement integrate into a Kaizen Event.

Discover key steps for conducting a Kaizen Event with your team.

Be able to engage with a team conducting a Kaizen Event.

Conduct Plus/Delta

+ **Plus:** What produced *value* during the session?

▲ **Delta:** What could we *change to improve* the process or outcome?