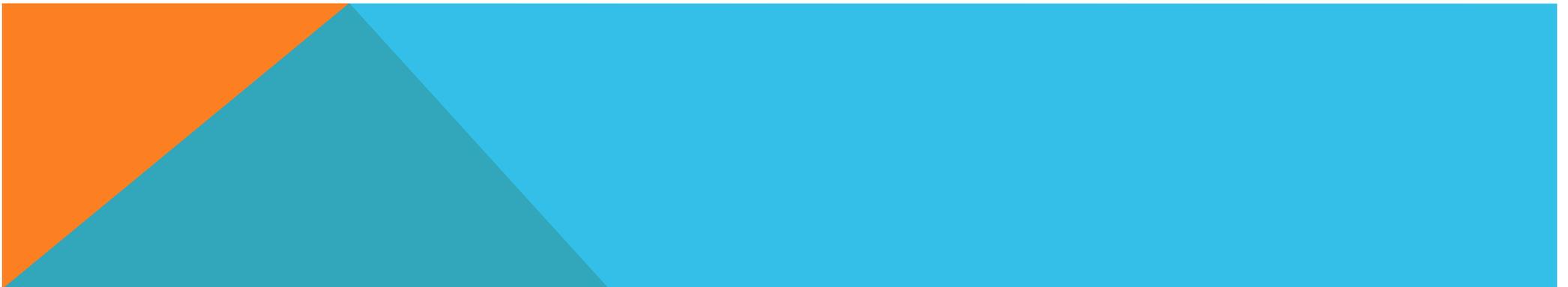




CONTINUAL PROCESS IMPROVEMENT

AGENDA:

- ✧ Project Selection
- ✧ What is Kaizen?
- ✧ What a Kaizen Event Look Like?
- ✧ Kaizen's Pillars
- ✧ Kaizen Targets
- ✧ Ground Rules & Guidelines



Declaration on IP (Intellectual Property) Right:

- This presentation as well as related Excel file have been developed based on Six Sigma and other quality materials collected from different sources online.
- I tried to keep the original sources but often it was not possible due to lack of info of creator.
- Under 'FAIR' use policy of IP we ONLY can use this presentation for our individual or group learning purpose but not for commercial usages!
- Purpose of this presentation to provide awareness and encourage 'jump start' on process improvement event.

Read Me 1st

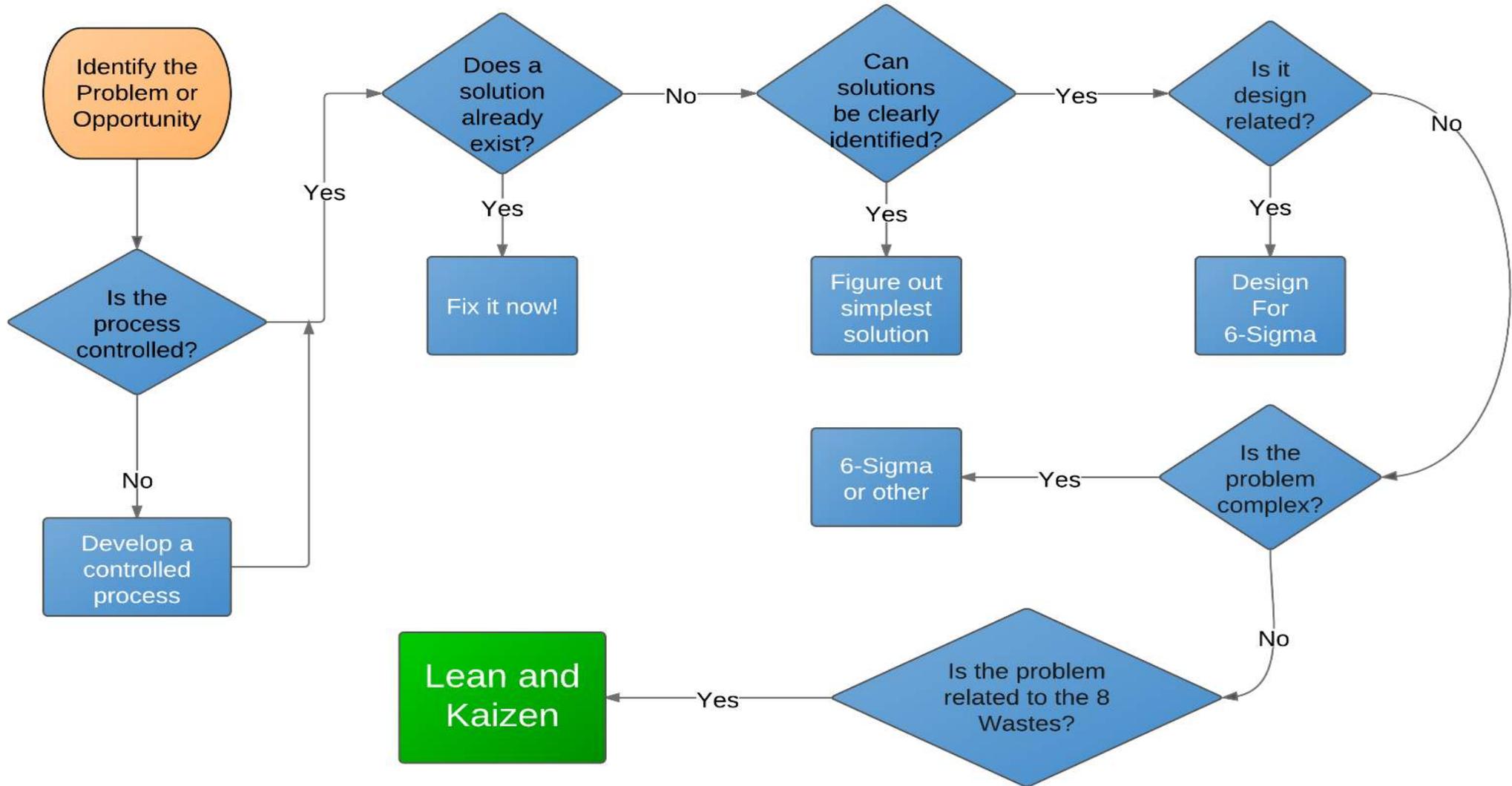
- There are two parts of this presentation – Slides (pdf) and Excel file (XLS - Continual Process Improvement with Kaizen - Tools v1)
- PDF deals with conceptual parts while XLS deals with tools that are discussed in concept and practice areas
- As a core of Process improvement mechanism Kaizen is discussed and utilized.
- Kaizen is implemented by using PDCA
- There 4 different colors have been used in 4 different stages of PDCA as well as in XLS tabs for your convenience.

AGENDA:



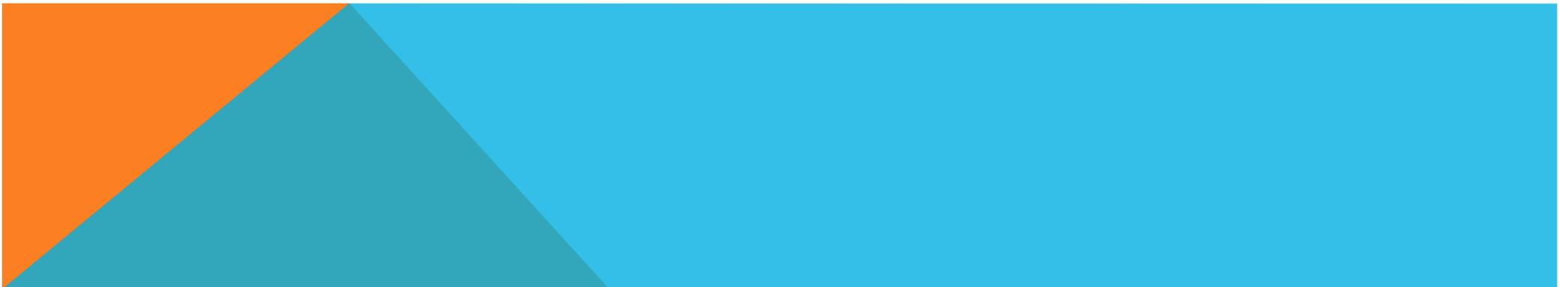
- ✧ Project Selection
 - ✧ What is Kaizen?
 - ✧ What a Kaizen Event Look Like?
 - ✧ Kaizen's Pillars
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 - ✧ Ground Rules & Guidelines
- 

Project Selection Flowchart



AGENDA:

- ✧ Project Selection
- ✧ **What is Kaizen?**
- ✧ What a Kaizen Event Look Like?
- ✧ Kaizen's Pillars
- ✧ Kaizen Targets
- ✧ Ground Rules & Guidelines



What is Kaizen?

改善

What is Kaizen?

- Kai = Change; Zen = Good
- Kaizen = Good Change = Change for the Better = Continuous Improvement
- Small, incremental changes; break apart and put back together better
- Focus on small, quick changes for long-term success
- Elimination of the 8 Wastes

What is Kaizen?

➤ Kaizen is:

- Rapid improvement in a particular work cell, work station, small process, factory location, office area, etc.

➤ Kaizen is not:

- Improvements in complex cross-functional or systemic problems where DFSS Projects or 6-Sigma or Lean or Lean Six Sigma are required

➤ Kaizen Event is:

- Any action by using Kaizen for process improvement within 5-10 days

What is Kaizen?

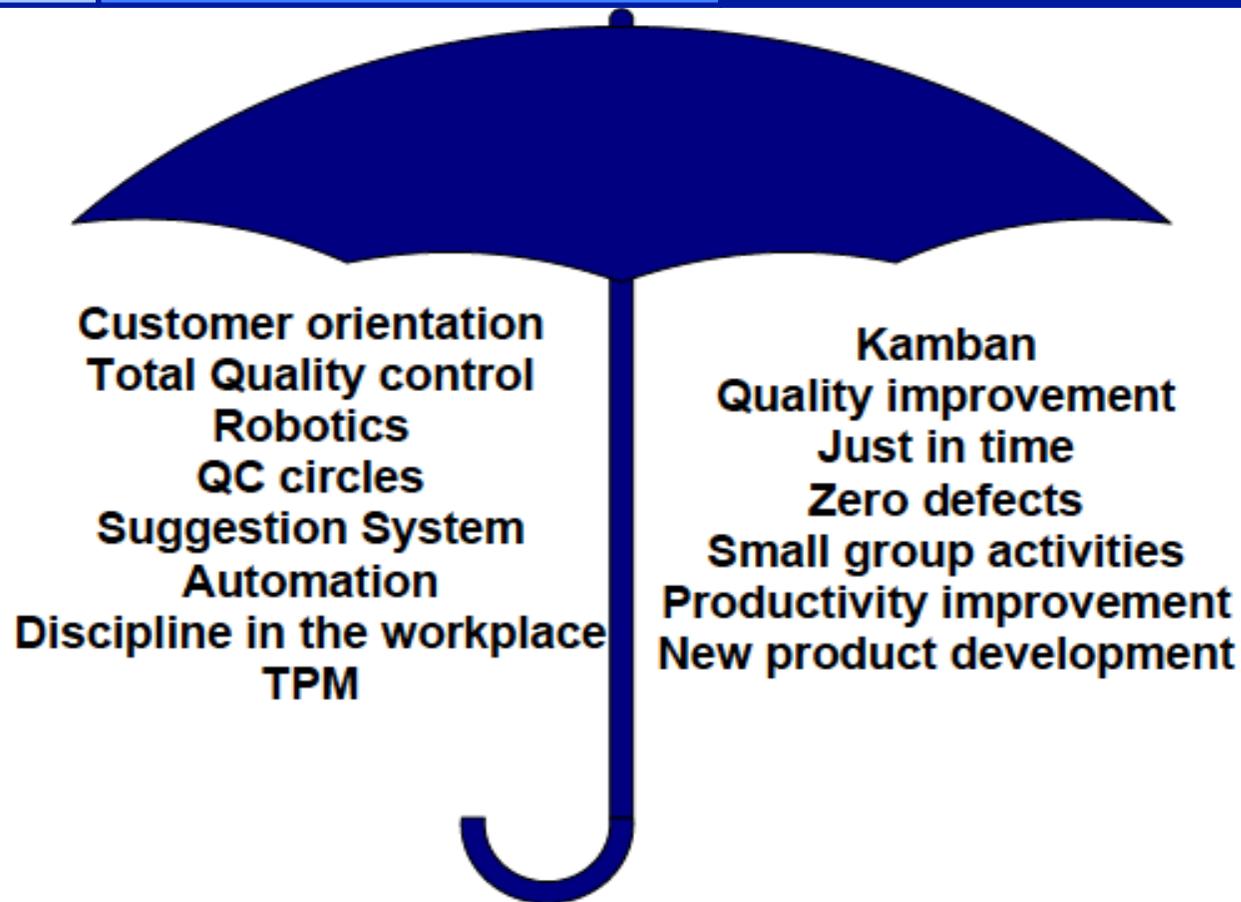
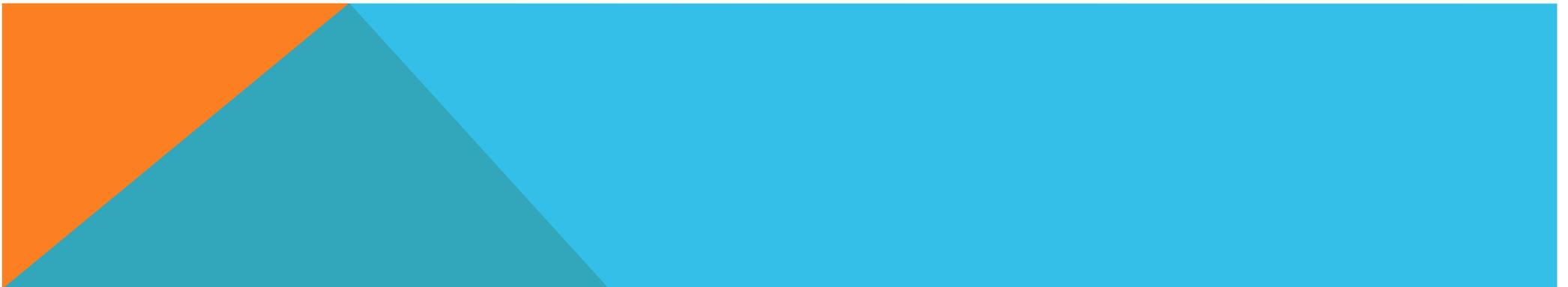


Figure 1:Kaizen umbrella-concept

AGENDA:

- ✧ Project Selection
- ✧ What is Kaizen?
- ✧ **What a Kaizen Event Look Like?**
- ✧ Kaizen's Pillars
- ✧ Kaizen Targets
- ✧ Ground Rules & Guidelines



What does a Kaizen Event look like?



**Analyze the
current
PROCESS!**

What does a Kaizen Event look like?



**Understand
TOGETHER!**

What does a Kaizen Event look like?

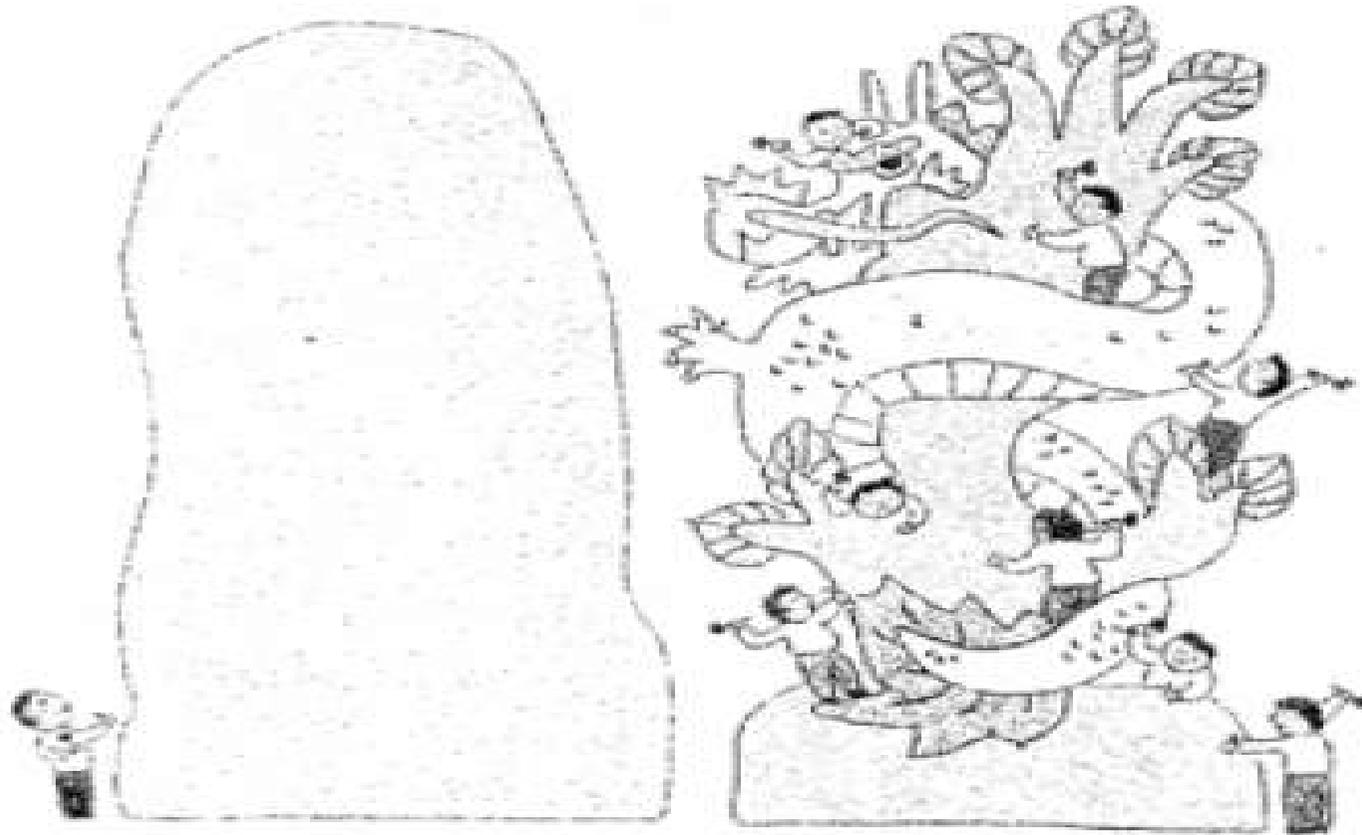


Figure 3: kaizen is everybody's job

What a Kaizen event look like?

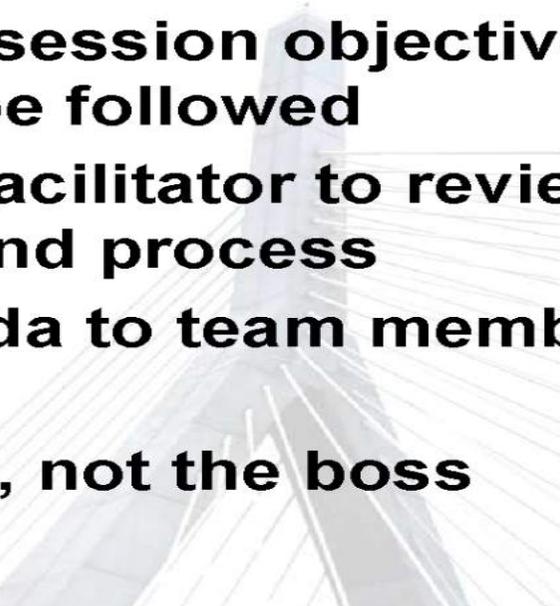
Team Sponsor

- High level *champion* of the cause
- Upper management *advisor* to the team
- Breaks through *road blocks*
- Arranges *support* for the team during the event
- Ensures *coverage* so that team members are not interrupted during the event

What a Kaizen event look like?



Team Leader

- **Determines session objectives and process to be followed**
 - **Meets with facilitator to review session objectives and process**
 - **Sends agenda to team members in advance**
 - **Is the leader, not the boss**
- 

What a Kaizen event look like?

Traits of Good Team Leaders

- Previous success as a leader (church, scouts, military, civic, etc.)
- Has experienced a kaizen event
- Good knowledge of lean manufacturing (if production area event)
- Good knowledge of waste elimination techniques
- Not dictatorial - understands participative management
- Comfortable working in the target area
- Good people skills

What a Kaizen event look like?

Team Facilitator

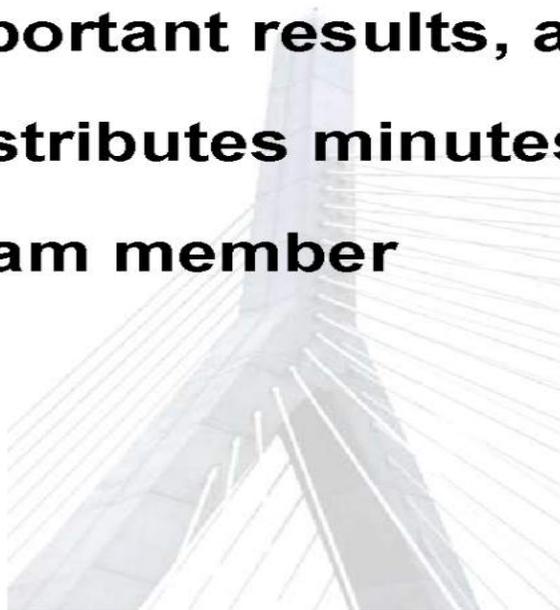
- **Manages how people work together during team activities**
- **Keeps activities moving along the process and time schedule set by the team leader**



What a Kaizen event look like?

Recorder

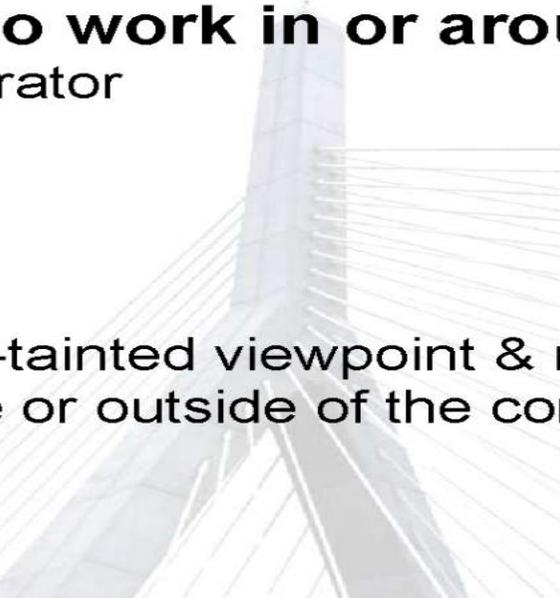
- **Records important results, actions, & decisions**
- **Promptly distributes minutes to participants**
- **Usually a team member**



What a Kaizen event look like?



Identify Other Members

- **Insiders – who work in or around the process**
 - Machine Operator
 - Buyer
 - Assembler
 - Planner
 - **Outsiders**
 - Provides non-tainted viewpoint & new ideas
 - Can be inside or outside of the company
- 

What a Kaizen event look like?

Traits of Good Participants

- **Understands the target area**
 - May work in area
 - Can learn the area
- **Open to doing things differently**
- **Will get involved**
- **Good communicators**
- **Brings knowledge (technical or procedural) that will help the team succeed**

What a Kaizen event look like?

Quality Circle (QC)

- Quality Circle is a Quality Improvement Team/ Process Improvement Team
- A team of 3-9 people - who meet regularly to discuss quality related work problems so that they may examine and generate solutions to these
- There must be commitment from senior management, unit management and supervision, other staff and of course the circle members
- Open-mindedness and a desire to avoid blocking is essential.

What a Kaizen event look like?

Quality Circle (QC)

Quality Circles, in the 1970's, was the first big push to mimic Japan's success with a team based work culture.

Although there were success stories, and some organizations still use them, most saw them as a failure!!!

Some of the reasons for failure included:

- Inadequate measurements of results.
- Management understanding of process.
- Team members not right for the problem.
- Management dominated the process.
- Lack of training with problem solving tools.

What a Kaizen event look like?

Quality Circle (QC)

- Reward and recognition (R&R) have various functions and can be valuable tool for QC. R&R can be provided if
- 1. QC improves the reinforcement of quality-related behavior and achievements.
- 2. QC shows organizational values, and they show how the organization appreciates efforts .
- 3. QC indicates achievement, which is an element of continuous improvement (Kaizen).

Recognition is also a form of feedback about the result of individual or team efforts.

What a Kaizen event look like?

Quality Circle

- Suggestions or proposals start from a problem perception and recognizing the need to solve it
- The problems inside an organization are the sources of any kind of proposal systems.
- But employees inside the organization do not perceive problems on the same way .
- There are considered 5 levels of problems perceiving from employees in an organization:

What a Kaizen event look like?

Quality Circle

- Level 1: People deny that are problems or don't want to see them
- Level 2: People admit that there are problems but find excuses not being able to solve them
- Level 3: People accept the fact that there are problems but unable to solve them because they don't know how attack them
- Level 4: People want to see potential problems for this try to visualize them. They will attack them by learning proper methods
- Level 5: People know their problems, methods to solve them and how to involve all the people to attack them. They are ready to attack any problem and to change their organization if needed after solving the problem.

What a Kaizen event look like?

Quality Circle

QC can have some matric as:

- Number of meetings
- Participate rate
- Number of intermediate reports
- Use of 7 tools
- The extent that company policy was used in selecting projects
- Standardization and prevention of a problem's recurrence

AGENDA:

- ✧ Project Selection
- ✧ What is Kaizen?
- ✧ What a Kaizen Event Look Like?
- ✧ **Kaizen's Pillars**
 1. Housekeeping
 2. Waste elimination
 3. Standardization
- ✧ Kaizen Targets
- ✧ Ground Rules & Guidelines

Kaizen's Pillars



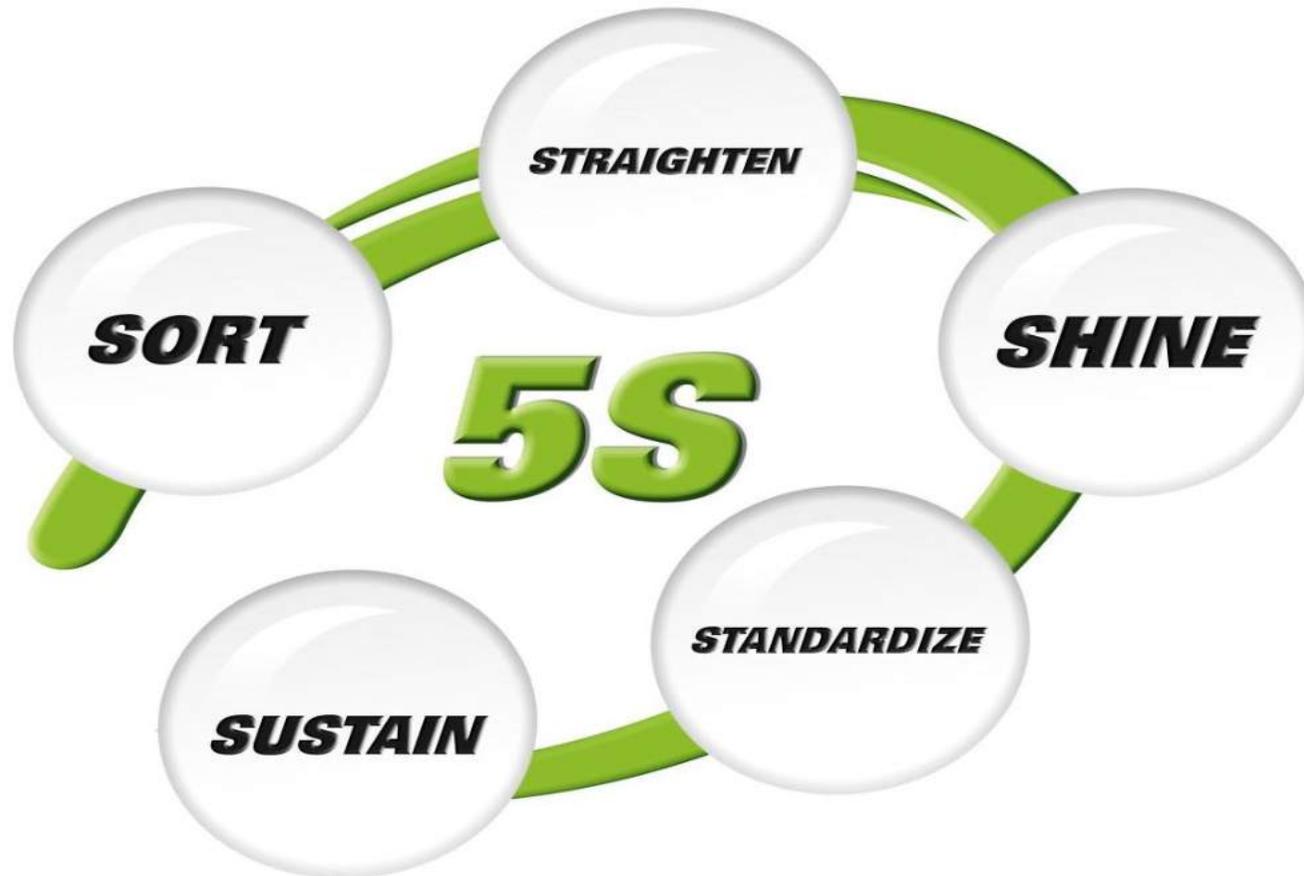
Kaizen -The three pillars

- 1. Housekeeping**
- 2. Waste elimination**
- 3. Standardization**

To be ensured success on activities on those three pillars three factors have also to be taken account:

1. visual management
2. Role of the supervisor,
3. Importance of training and creating a learning organization.

Kaizen's Pillars – 1. Housekeeping with 5S



Kaizen's Pillars – 1. Housekeeping with 5S

What is 5S?

- 5S is a process for implementing and maintaining a clean, safe, and organized work area.
- 5S provides a way for organizations to operate efficiently and effectively.
- 5S is a Lean Organization tool that helps build a foundation for continuous improvement.

Kaizen's Pillars – 1. Housekeeping with 5S

What are the 5S's?

Japanese 5S's	English Translation	American 5S Standard
Seiri	Put Things in Order	Sort
Seiton	Proper Arrangement	Straighten Set in Order, Simplify
Seiso	Clean	Shine Scrub, Sweep
Seiketsu	Purity	Standardize
Shitsuke	Commitment	Sustain Discipline

Kaizen's Pillars – 1. Housekeeping with 5S

Definition of the 5S's

- **Sort** - Define what is and isn't needed in the area to do the job. Remove items not needed: tools, books, instructions – prioritize essential items
- **Set in Order** - Organize the work area based on 'A place for everything and everything in its place.' Designate locations for files, tools, equipment, supplies, etc. and label properly
- **Shine** - Clean, sweep, scrub, etc.
- **Standardize** - Identify "Best Practices" and document them so they can be followed by everyone. Use same tools, processes, and documentation where applicable.
- **Sustain** – Maintain and review with everyone involved. Continual reinforcement of the importance of 5S; Audits, Culture change – make it a habit.

Kaizen's Pillars – 1. Housekeeping with 5S

Why 5S?

- A cleaner & more organized work area results in higher employee morale.
- Improved output and quality from knowing exactly where to find files, drawings, manuals, supplies, etc.
- Reduced cost from not having to re-purchase lost or damaged items.
- Streamlined processes through elimination of waste.
- More organized and efficient workplace can lead to potential increase in orders, growing profitability
- **The Visual Workplace affects everyone!**

Kaizen's Pillars – 1. Housekeeping with 5S

Sort

- Remove non-essential items from work area
- Sort through desk drawers, file cabinets, carts, tables, office supplies, materials, paper work, and discard unneeded items
- Remove hardcopy items where not needed
- Sort computer files the same as hardcopy files
 - remove outdated and unused folders

Kaizen's Pillars – 1. Housekeeping with 5S

Set in Order

- Replace files and folders in a more organized manner
- Organize by removing waste in the processes; reduce movement and transportation
- Label files, drawers, cabinets, shelves, etc. Label office equipment in common areas.
- When labeling, ask the question “Could someone find these items if I’m not here?” If not, label it.
- Use color coding to make it easier to locate and store similar information.

Kaizen's Pillars – 1. Housekeeping with 5S

Shine

- Clean, dust, and mop to show off your work area
- Dirt, dust and clutter can have an adverse effect on quality, safety, and morale - clean everything.
- Clean work environments leave customers with a comfortable feeling about your quality.
- Any necessary repairs should be noted and fixed on the spot

Kaizen's Pillars – 1. Housekeeping with 5S

Standardize

➤ Standardize

- Define and document best practices for accomplishing the tasks in the area. Eliminate waste in tasks and processes.
- Train everyone to the best practices

Kaizen's Pillars – 1. Housekeeping with 5S

Sustain

➤ Sustain

- Make 5S a daily part of standard work
- Define tasks needed to maintain 5S. Implement daily and weekly assignment sheets to insure tasks are completed.
- Set up auditing to ensure ongoing use

AGENDA:



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- 

Kaizen's Pillars – 2. Waste Elimination

Lean Six Sigma: 8 Wastes



Defects

Efforts caused by rework, scrap, and incorrect information.



Overproduction

Production that is more than needed or before it is needed.



Waiting

Wasted time waiting for the next step in a process.



Non-Utilized Talent

Underutilizing people's talents, skills, & knowledge.



Transportation

Unnecessary movements of products & materials.



Inventory

Excess products and materials not being processed.



Motion

Unnecessary movements by people (e.g., walking).



Extra-Processing

More work or higher quality than is required by the customer.

Kaizen's Pillars – 2. Waste Elimination

Waste 1 - Transportation

Definition

- Unnecessary movement of items between processes

Causes

- Poor layout and/or process Design & Planning
- Unstructured or not understood Value Stream
- Complex Material flow

Problems

- Increased Time & Cost to transport & search
- Increased Defects due to accidents

Kaizen's Pillars – 2. Waste Elimination

Waste 2 - Inventory

Definition

- Any raw material, Work in Progress (WIP) or finished goods which are being stored

Causes

- Overproduction causes inventory build up between processes

Problems

- Adds cost
- Requires space
- Hides process defects
- Can become a defect

Kaizen's Pillars – 2. Waste Elimination

Waste 3 - Motion

Definition

- Unnecessary movement within a Process

Causes

- Poor workplace layout
- Poor process planning
- Poor Housekeeping
- No Standard Operating Procedures

Problems

- Adds time & cost
- Can be a safety issue

Kaizen's Pillars – 2. Waste Elimination

Waste 4 - Waiting

Definition

- People or Parts that are waiting for a work cycle to be completed

Causes

- Unreliable Supply Chain
- Bottlenecks
- Down Time

Problems

- Excessive Lead Time
- Causes Bottle Necks
- Additional Time & Cost

Kaizen's Pillars – 2. Waste Elimination

Waste 5 – Over processing

Definition

- Processing beyond the value required by the Customer

Causes

- Lack of Customer Focus
- “*Always done it this way*”
- Lack of understanding
- Scheduled work time is longer than needed

Problems

- Increases Time & Cost

Kaizen's Pillars – 2. Waste Elimination

Waste 6 – Over production

Definition

- To produce items sooner or in greater quantities than required for customer demand

Causes

- Poor planning
- Incorrect bottleneck assumptions

Problems

- Overproduction discourages a smooth flow of production
- Leads to excessive work in process inventory

Kaizen's Pillars – 2. Waste Elimination

Waste 7 – Underutilized People

Definition

- Underutilization of people's Abilities, Knowledge, and Skills

Causes

- Constant management turnover unaware of talent pool
- Employee not happy in current position

Problems

- Great ideas might be missed
- Dominant personalities may force focus in wrong direction

Kaizen's Pillars – 2. Waste Elimination

Waste 8 - DEFECTS

Definition

- A defect is when the Customer believes they did not get what they paid for

Causes

- Process Variation
- Customer requirements not understood

Problems

- Additional Time & Cost
- Reduces Customer Confidence

Kaizen's Pillars – 2. Waste Elimination

Examples

Muda in Manufacturing	Muda in Office
Shipping defective parts	Passing on work that contains errors
Waiting for inspection	Signature approvals, bureaucracy
Walking and transporting parts	Walking or routing documents
Overproduction	Copies, files, a lot of papers
Excess inventory which hides	Excess documentation

AGENDA:

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- ✧ What is Kaizen?
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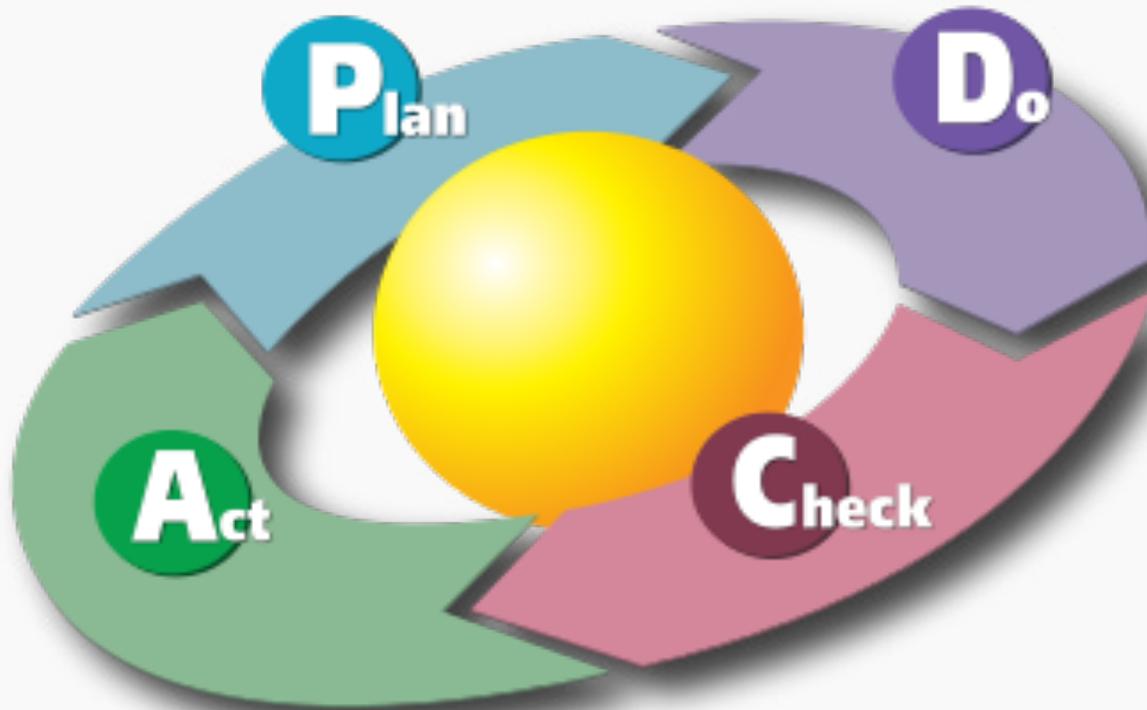
Kaizen's Pillars – 3. Standardization

- **It helps to reduce variation**
- **It is set by management but able to change when the environment changes.**
- **It is a never-ending process and is better explained and presented by the PDCA**
- **It is a repeated process followed by team!!!**

Kaizen's Pillars – 3. Standardization

- Continuous improvement is an ongoing effort to improve products, services or processes.
- These efforts can seek “incremental” improvement over time or “breakthrough” improvement all at once.
- Among the most widely used tools for continuous improvement is a four-step quality model—the plan-do-check-act (PDCA) cycle, also known as Deming Cycle or Shewhart Cycle

Kaizen's Pillars – 3. Standardization



P – Plan
D – Do
C – Check
A – Act/ Adjust

Note: "A" is also referred as "Adjust". This helps trainees to understand that the 4th step is more about adjusting/correcting

Kaizen's Pillars – 3. Standardization



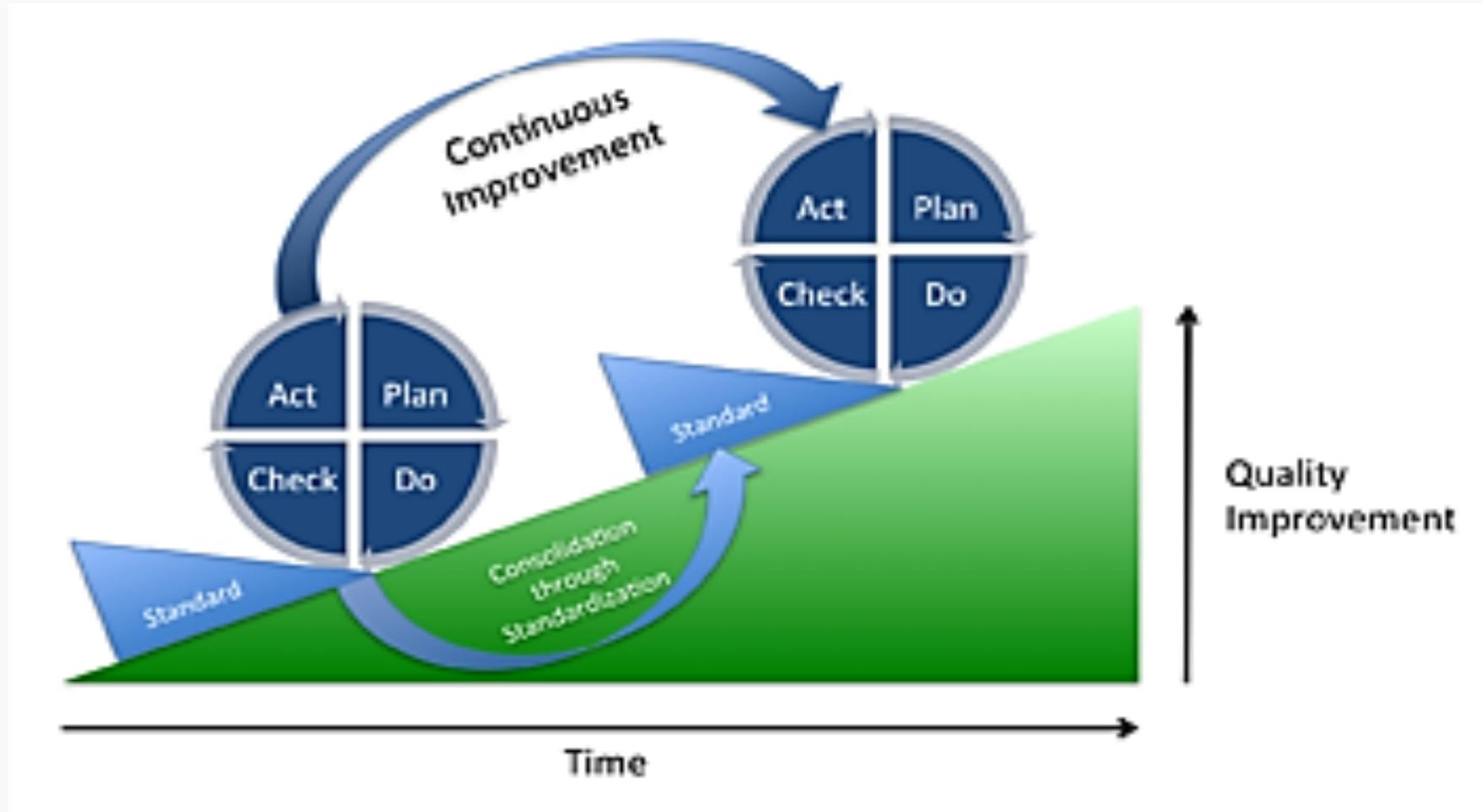
P – Plan - Establish a plan to change whatever needs to be improved

D – Do - Carry out changes on a small scale,

C – Check -Observe the results,

A – Act/ Adjust - Evaluate the results and the process. Then determine what has been learned .

Kaizen's Pillars – 3. Standardization



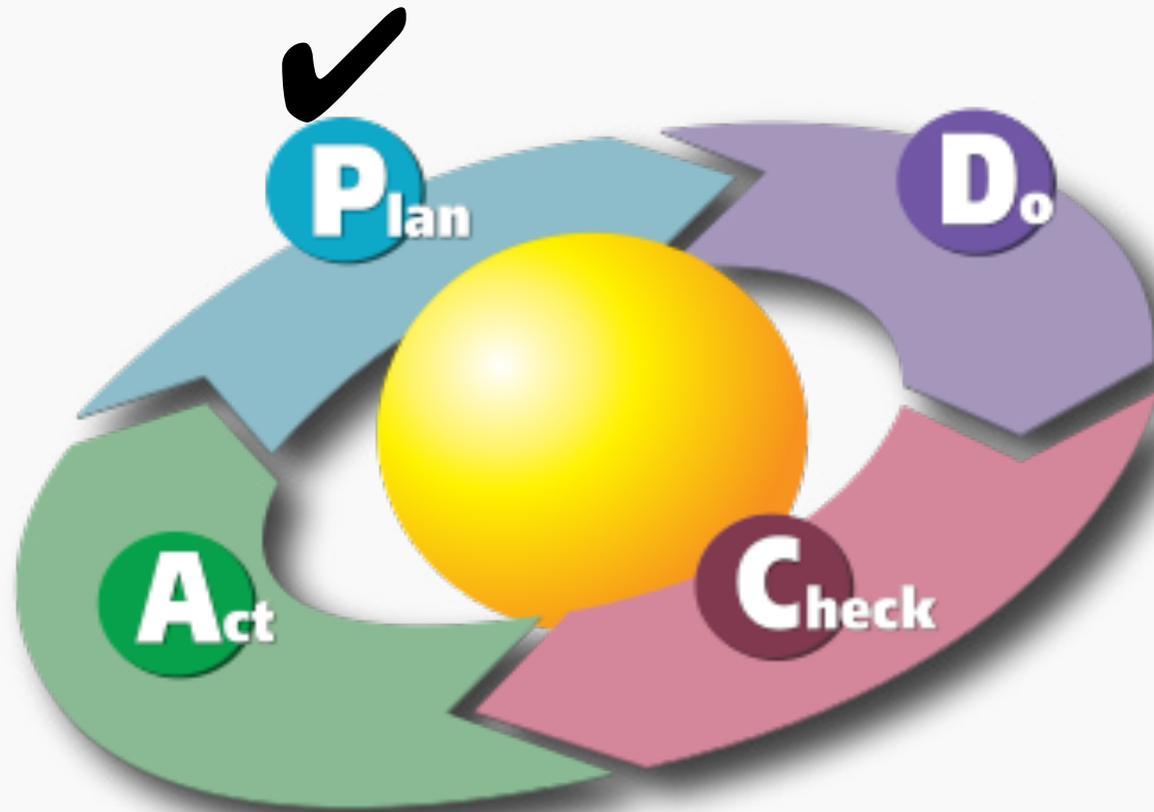
Kaizen's Pillars – 3. Standardization

Continuous or Continual?

Continual improvement: a broader term preferred by W. Edwards Deming to refer to general processes of improvement and encompassing “discontinuous” improvements—that is, many different approaches, covering different areas.

Continuous improvement: a subset of continual improvement, with a more specific focus on linear, incremental improvement within an existing process. Some practitioners also associate continuous improvement more closely with techniques of statistical process control.

Kaizen's Pillars – 3. Standardization



Kaizen's Pillars – 3. Standardization



PHASE I: PLAN

Plan: Identify an opportunity and plan for change Establish the objectives and processes necessary to deliver results in accordance with the expected output (the target or goals).

STEPS

- Select team
- Identify problem / opportunity by Brainstorm
- Evaluate current state
- Define future state
- Develop weekly plan

TOOLS

- Event Charter
- Affinity + MoM
- VSM 'as is'
- **VSM** new
- Weekly Plan

Kaizen's Pillars – 3. Standardization

Affinity Diagrams

- Organizes a large amount of verbal data related to a broad problem or subject
 - Ideas, opinions, facts
- Usage example: Establishing a new QC policy
- Steps:
 - Gather a large number of ideas
 - Put individual ideas on cards or sticky notes
 - As a team, group the ideas according to natural “affinity” or relationship to each other
 - These natural groups become “strategic factors”

Kaizen's Pillars – 3. Standardization



Affinity Diagram Example

Your team has been brainstorming to develop a list of ideas to incorporate into the vision. They have come up with the following list. Develop an affinity diagram and name each strategic factor.

- Low product maintenance
 - Satisfied employees
 - Courteous order entry
 - Low prices
 - Quick delivery
- Growth in shareholder value
 - Teamwork
- Responsive technical support
 - Personal employee growth
- Low production costs
- Innovative product features
- High return on investment
- Constant technology innovation
 - High quality
 - Motivated employees
 - Unique products
- Small, lightweight designs

Kaizen's Pillars – 3. Standardization



- **A Value Stream** is the set of all actions (both value added and non value added) required to bring a specific product or service from raw material through to the customer.

Kaizen's Pillars – 3. Standardization

Value Stream Improvement vs. Process Improvement

