Technical Guide On

"KAIZEN Implementation"

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Ministry of Industries & Production
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1. Disclaimer:

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1.1 Introduction to SMEDA:

The Small and Medium Enterprises Development Authority (SMEDA) was established in October 1998 with an objective to provide fresh impetus to the economy through development of Small and Medium Enterprises (SMEs).

With a mission "to assist in Employment Generation and Value Addition to the national income, through development of SME sectors, by helping increase the number, scale and competitiveness of SMEs", SMEDA has carried out 'sectoral research' to identify Policy, Access to Finance, Business Development Services, strategic initiatives and institutional collaboration & networking initiatives.

Preparation and dissemination of prefeasibility studies in key areas of investment has been a successful hallmark of SME facilitation by SMEDA.

Concurrent to the prefeasibility studies, a broad spectrum of Business Development Services is also offered to the SMEs by SMEDA. These services include identification of experts and consultants and delivery of need-based capacity building programs of different types in addition to business guidance through help desk services.

For more information on services offered by SMEDA, please contact our website: www.smeda.org

1.2 Industry Support Program

In order to enhance competitiveness of SMEs and achieve operational excellence, SMEDA established an Industry Support Cell (ISC) for provision of foreign technical support and knowledge transfer in collaboration with International Development Organizations. SMEDA's Industry Support Program (ISP) initially launched with Japan International Cooperation Agency (JICA) and actively engaged in reducing energy inefficiencies and

improving production and quality of products with the support of Japanese Experts. Later on, similar activities with other international partner organizations like German Corporation for International Cooperation (GIZ), Training and Development Centers of the Bavarian Employers' Association (bfz), Germany, and United Nations Industrial Development Organization (UNIDO) were also successfully implemented.

2. Introduction:

As "**KAIZEN**" is defined as **"Problem Solving Approach"** therefore in this guide firstly concept of "What Problem is " is explained and how problem can handle the problem effectively. Later on concept of **"KAIZEN"** and **"How to Implement KAIZEN via Step by Step Approach"** are explained.

2.1 What is a Problem?

"Problem" can simply be defined as the **"the gap between current situation and desired ideal/ target situation"**.

Figure 1: Definition of Problem

2.2 Levels & Composition of Problems?

Definition of **"Problem"** is explained already; however, we need to understand more about the composition of the **"Problem"**. We explain them briefly in the following.

2.2.1 Contributing Factors

"Problem" is related with various **"contributing factors".** Contributing factors are defined as follow.

According to Mariam-Webster Dictionary:

> **a.) "Contributing factors**" is something that helps cause a result.

The term **"Contributing Factors"** can also be defined as follows.

b.) "It is a condition that influences the effect by increasing its likelihood, accelerating the effect in time, affecting severity of the consequences etc."

This means that a **"Problem"** might be caused by single or many **"Contributing Factor".**

For Example:

1. Car accident report suggests that excessive speed was the contributing factor.
2. Wrong medication to inpatients in the ward.

In above examples refer to the first case the over speeding is the single and only contributing factor resulted in car accident. But if we look at the second example we need to understand that there are different medicines like **injectable**, **ointments** or **inhalers** etc. (many contributing factors) and hence need to know which medication was wrongly given. This makes the problem large as we need to segregate the medication types and from the data we need to prioritize the medication according to the severity of the data or the most critical contributing factor. Analyzing the root causes of the most critical contributing factor and suggesting/implementing the countermeasures will help eliminate the problem.

2.2.2. Levels of "Problem"

There are three levels of problems that exist in an organization. In **figure # 2,** we tried to explain the concept visually.

a.) Large Problems

b.) Medium Problems

c.) Small Problems

Below the difference between Large & Small problems is expalained:

a.) Large problems:

Large problems are complicated and composed of several contributing factors.

b.) Small Problem:

They are easy to solve as compared to large problem because contributing factors are less, and are simple to manage.
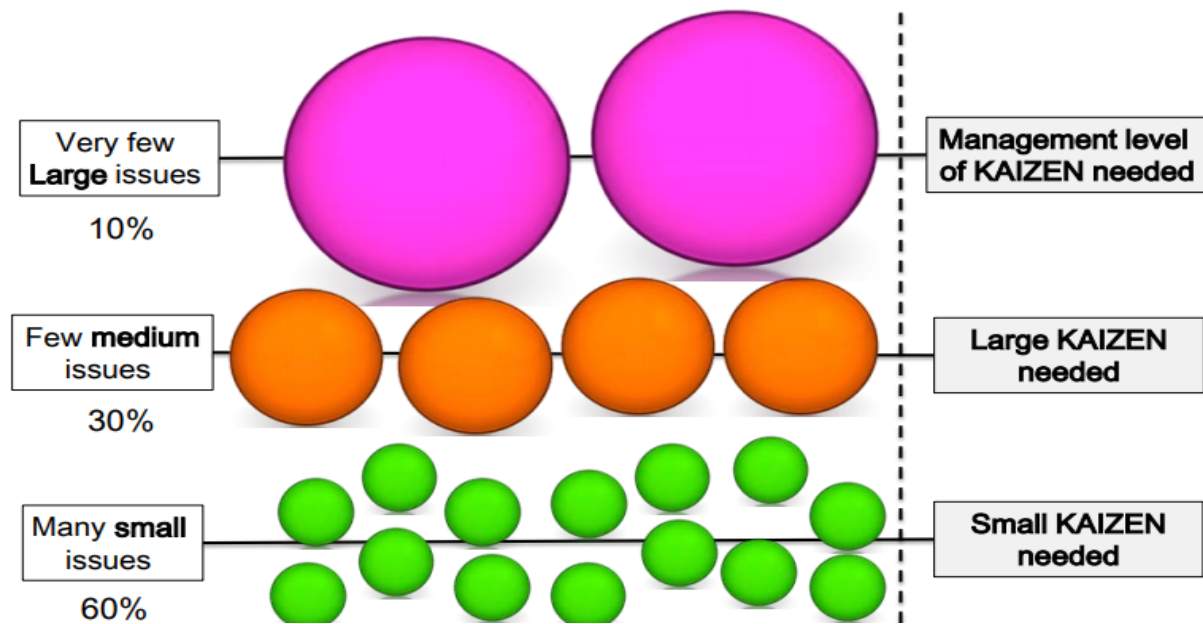
Figure 2: Three Levels of Problems

Proportion of different problems that exist in an organization is estimated in the ratio of **1:3:6** in the sequence of **Large: Medium: Small** Problems i.e. **10% (Large) vs. 60% (Small)**.

Work improvement teams like to solve **"Large Problems"** as they feel that it will give them more benefit as compared to medium and small problems. However, they ignore two important facts i.e. they only exist in small quantity almost 10% and secondly they require more resources like time, man, money, material etc.

Instead of solving **"Large Problems"** that consume major resources and make people stuck for long time, let us change our approach and focus on "Small Problems" that are not complicated and are easy to solve.

3. What is KAIZEN?

The word **"KAIZEN"** is a Japanese term.

KAI means **"To Change"**
ZEN means **"To Become Good"**

KAIZEN is a problem solving process which has meaning of **"Change for Good"** or **"Continuous Improvement"**. **"KAIZEN"** can simply be defined as **"Problem Solving Process"**, and it is the way to make a facility become a total quality managed facility.

According to a business dictionary, it is defined as; **"Japanese term for a gradual approach to ever higher standards in quality enhancement and waste reduction, through small but continuous improvement involving everyone from the head of institution / organization to the lowest level workers"**

3.1 MAN Behind KAIZEN?

Masaaki Imai known as **"Developer of Kaizen"**, the **"Lean Guru"** and **"Father of Continuous Improvement"**. He is author of the books like as follows.

1) **Kaizen, Key to Japans Competitive Success (1986)**
2) **Gemba Kaizen (1997)**
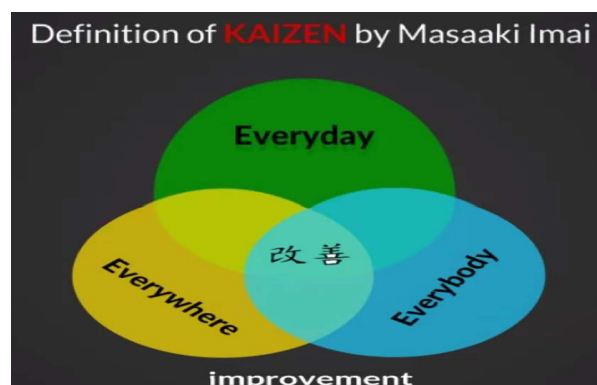
3.2 Definition of "KAIZEN" By Masaaki Imai:

Figure 3: Definition of KAIZEN By MASAAKI IMAI

Mr. Masaaki Imai shares his feelings regarding the "**KAIZEN**" that **"Continuous Improvement"** is not good enough translation of **"KAIZEN".** Because it does not carry forward the tremendous **"Self-Discipline" & "Commitment"** when doing **"KAIZEN".**

According to Mr. Masaaki: KAIZEN is **Everyday Improvement, Everybody Improvement & Everywhere improvement.** Below we explain in detail.

By Everyday Improvement: It means that as soon as you completed improvement project yesterday you should start improving today. **Everyday is a challenge to find better way of doing the things**.

By Everybody Improvement: Top Management/ Managers thinks KAIZEN is for shop floor workers only. This is the biggest mistake. KAIZEN should start from the top and move to the Managers. Top / Middle Managers to show their commitment & guidance to the entire team. Top Management has the most important role in implementation. Everybody in the organization from Top till operator level employees, part time employees should also be involved in the improvement process.

By Everywhere Improvement: KAIZEN is not only for the shop floor or only for manufacturing environment. In the admin office, new development department, sales and marketing department. KAIZEN should be introduced as company wide approach.

3.3 Level of "KAIZEN":

Definition of **"KAIZEN"** is already explained above**.** There are three levels of **"KAIZEN"**. The levels of KAIZEN are based on the degree of problems or issues. In **figure # 2,** we tried to explain the concept visually along with the levels of **"Problem"**.

One may have a wrong approach in implementing KAIZEN, and may take unnecessary action and waste time. Let's look at different levels of KAIZEN briefly.

      a) **Small KAIZEN**

      b) **Large KAIZEN**

      c) **Management Level of KAIZEN**

Below we explain the difference among the three levels of KAIZEN.

3.3.1. Small KAIZEN:

Small KAIZEN or simple, quick KAIZEN is useful to solve small issues that exist in the workplace. Small KAIZEN does not need many resources and time to improve the situation. Small issues exist in the workplace in large quantity but are often ignored as staffs are **"used**

to" to work in such an environment, and forget to recognize small problems/issues as **"Problem"** (refer figure # 2).

3.3.2. Large KAIZEN:

Large KAIZEN approach is applied to solve complicated problems that need inputs and some other resources. Large KAIZEN requires adequate time to analyze the problem carefully to solve problems and prevent recurrences. One cycle of large KAIZEN is usually last six months as shown below.
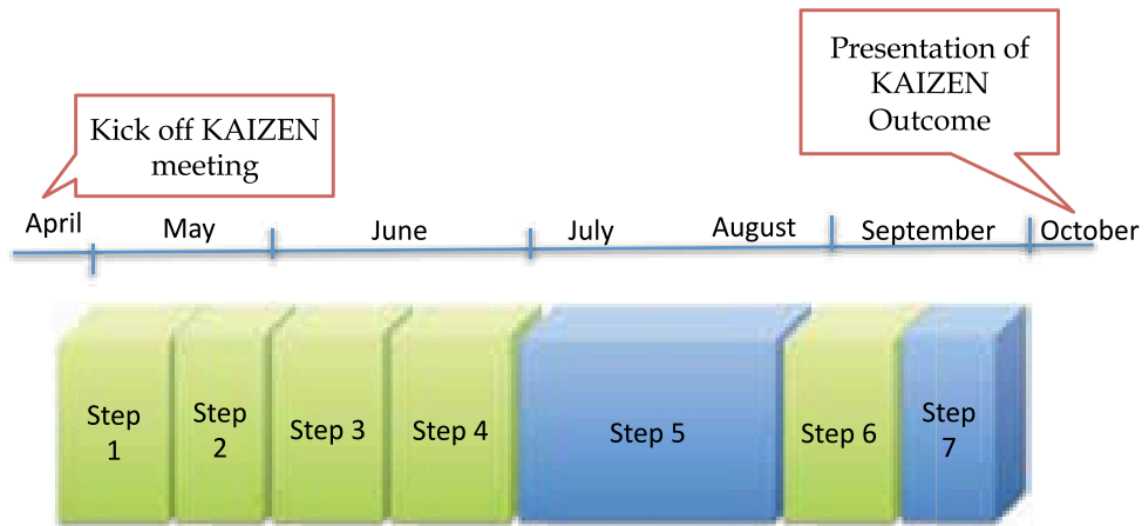

Figure 4: Implementation Schedule Large KAIZEN

Time schedule for each step is dependent upon the data collection methods, number of countermeasures to implement, and monitoring of progress by work improvement teams. Details of Large KAIZEN implementation will be explained in upcoming Chapters.

3.3.3. Management Level of KAIZEN:

Problems that are categorized into **"Large Problem"** needs to be tackled by middle management together with higher authorities and other stakeholders. A Large Problem is more complicated and many factors are contributing to cause the big problem. It means that solving big problems is not easy and needs more resources as input. Moreover, KAIZEN approach may not be enough to solve the problem, and many need to introduce a completely new mechanism to solve the problem. Before introducing a new mechanism, the same approach that is used for large KAIZEN can be applied for this level of KAIZEN. We will explain the Small and Large KAIZEN implementation details in the upcoming chapters. However, more efforts are needed than large KAIZEN and must be continuously practiced with close follow up. Therefore, it is necessary to pick up a few high contributing factors at the same time, and practice KAIZEN process. If KAIZEN does not show good progress, that is the time now to consider introducing another innovative mechanism.

4. Practical Step by Step Implementation of Different Levels of "KAIZEN":

In the below segment we present to you the simple procedure how to implement Small and Large KAIZEN that are used to solve small, medium and large problems that are observed in the workplace.

4.1 Small KAIZEN Implementation:

Small KAIZEN is quick and easy to implement. It helps to eliminate or reduce waste, promotes personal growth of employees and the organization. It serves as a barometer of leadership. Small KAIZEN is used to solve small problems. The period of implementation requires short time usually few minutes to less than one month. The process of implementation of Small KAIZEN is explained below in figure # 5.
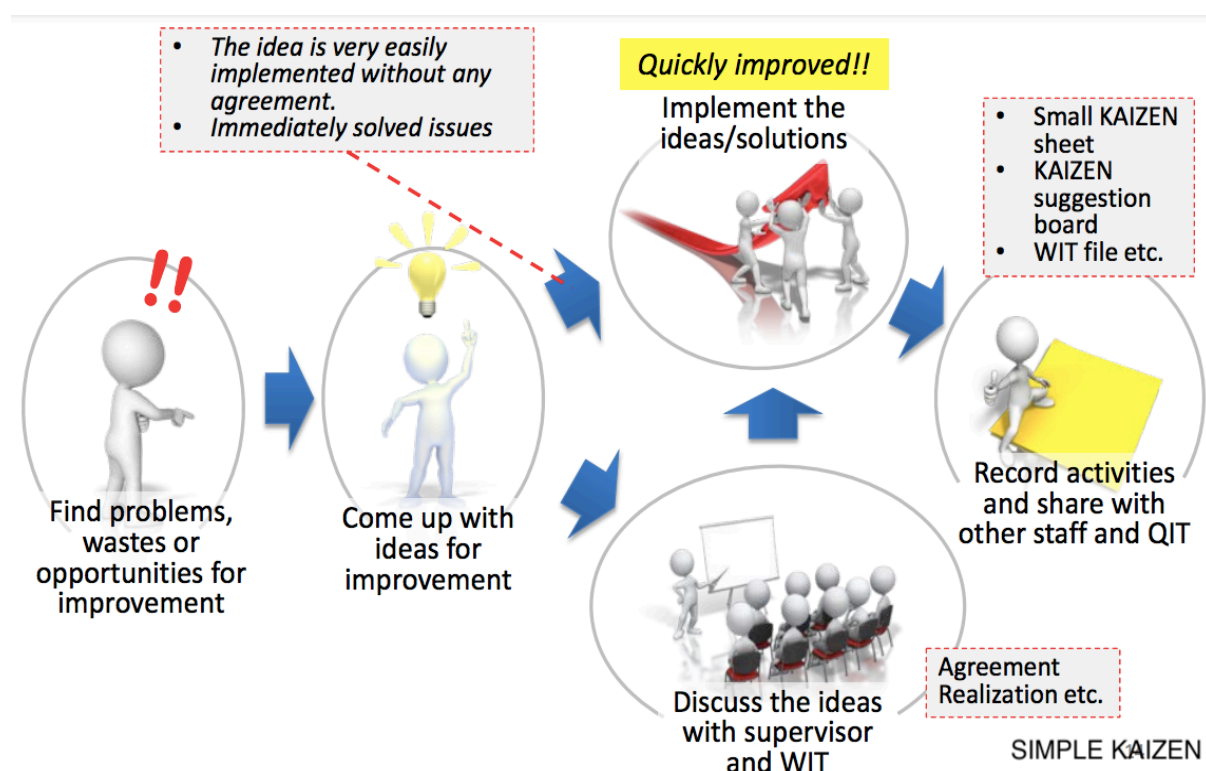

Figure 5: Implementation Process of Small KAIZEN

KAIZEN activity starts from sensing and realization of small issues/ problems in your work place. It is recommended to keep "KAIZEN Memo" as a record of small KAIZEN activities (see figure # 6 for details). Record about problems, countermeasures taken and improvement achieved together with pictures.

Figure 6: KAIZEN Memo

The Small KAIZEN activities often overlaps with the 5S activities like for example: Color Coding, Labelling and visual control ideas . KAIZEN topics are usually discussed among Work Improvement Team (WIT) members. However, having a meeting for discussion of KAIZEN suggestions / idea is not easy under shortage of staff and high workloads especially in the Small and Medium Enterprises (SMEs). Therefore, it is recommended to develop KAIZEN suggestion board (see figure # 7), and let staff feel free to make suggestion of ideas for improvement. Then, section in-charge and WIT make a decision, which will be practiced / implemented, and the progress of small KAIZEN will be shared with other staff using the KAIZEN suggestion board.

The responsible persons or the persons Incharge for the implementation of the "Small KAIZEN" includes all the available staff of the organization. One of the effective ways of practicing small KAIZEN is using **"KAIZEN suggestion board (see Figure 6)".**

Figure 7: KAIZEN Suggestion Board

Below we present simple steps how to use KAIZEN suggestion board.

Step # 1: Write your idea on small paper and stick it to KAIZEN suggestions head of the KAIZEN Suggestion Board.

Step # 2: Move the suggestion paper to **"To Do"** section when supervisor or Work Improvement Teams are discussing.

Step # 3: Move the suggestion paper to **"Doing"** section when you are practicing the ideas after agreement from the supervisor or Work Improvement Teams (WIT).

Step # 4: Move the suggestion paper to **"Done"** when you have implemented the ideas.

4.2 Large KAIZEN Implementation:

Large KAIZEN implementation process (also known as QC story) is a basic procedure for solving large and medium problems scientifically, rationally, efficiently and effectively. It resolves problems and reduce wastes. The period of implementation of one cycle of KAIZEN activities requires maximum six months. The process of implementation of Large KAIZEN is composed of seven steps as shown below in figure #8.
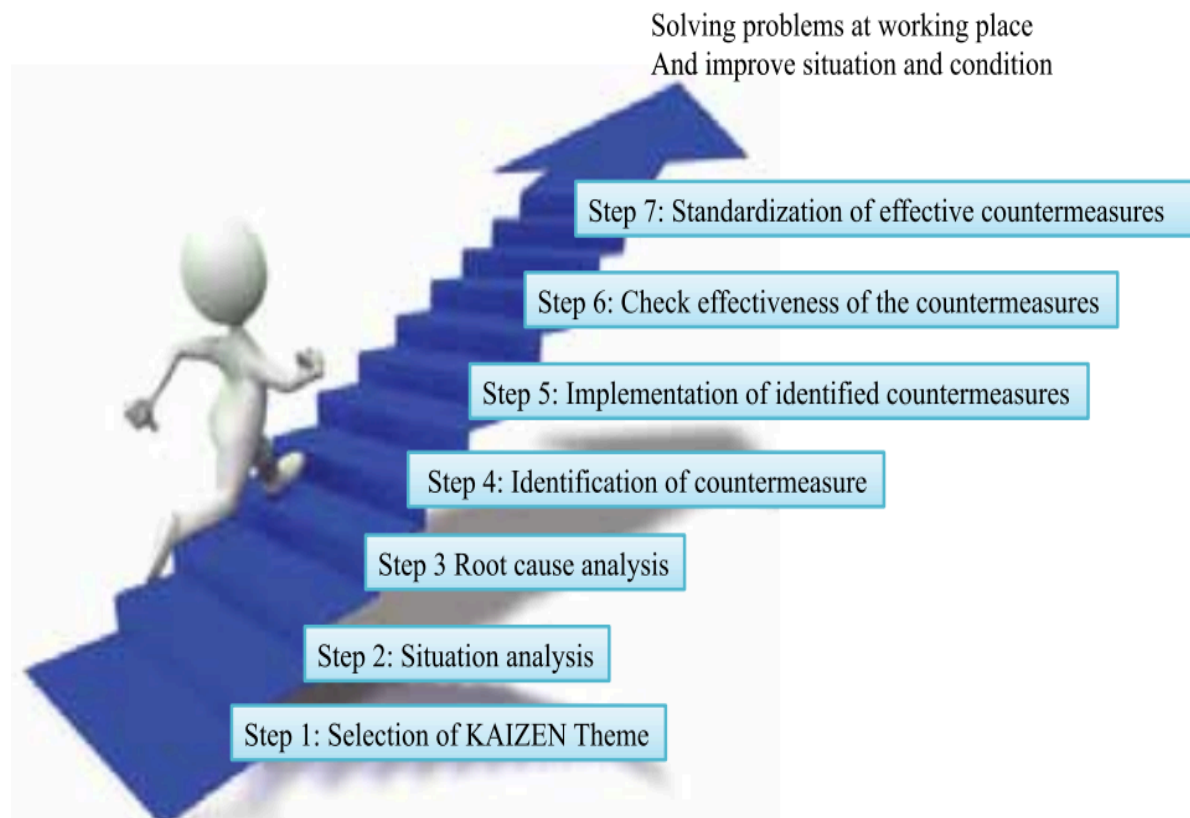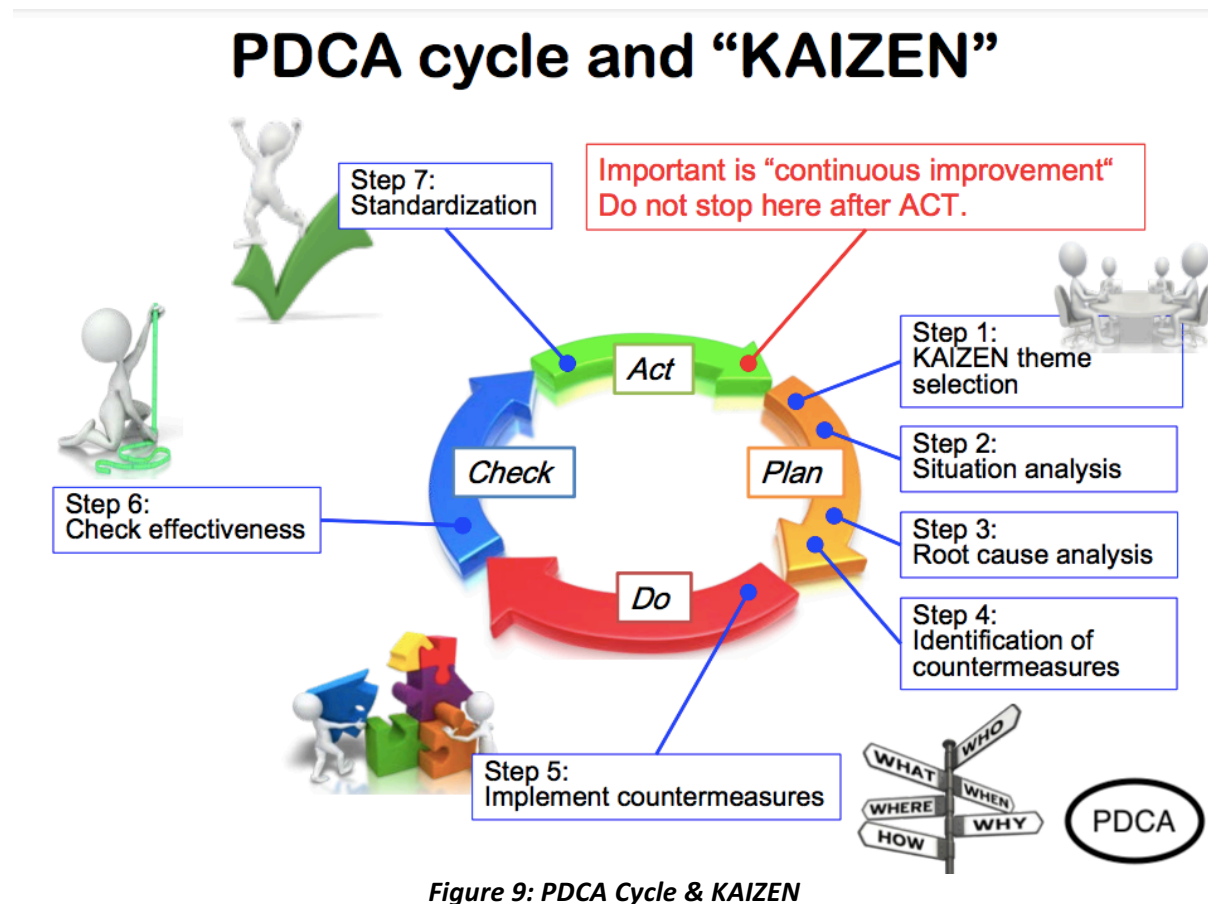

Figure 8: QC Story (Large KAIZEN Process)

The steps shown in figure # 8 are implemented in a prioritized manner as illustrated above. The Steps can also be mapped within the PDCA cycle as shown below in figure # 9.

Figure 9: PDCA Cycle & KAIZEN

Large KAIZEN (QC story) is based on the Plan-Do-Check-Act Cycle. This approach does not require the work improvement team (WIT) members to have high level technical knowledge to solve the problems. The requirement is simple ideas for improvement and their will to try them. If proposed solutions do not work, the WIT can redesign them and try it again.