

What is Kaizen?

Kaizen is an approach that focuses on continuous, simple, and small improvements to business processes rather than a few major and complex improvements or re-engineering initiatives. It is a combination of two words in Japanese—“kai,” which means “change,” and “zen,” which means “good.” In simple terms, it means “change for the better” and in a business context, it signifies “improvement.”

The concept of Kaizen originated in Japan and Masaaki Imai San and Toyota Motors have a significant role in its evolution.

Unlike other transformational or improvement approaches, Kaizen is bottom-up. It can also be considered as a problem solving process that

focuses on eliminating waste, improving productivity, and achieving sustained continual improvement in targeted activities through people involvement.

Kaizen is applied in different processes across different industries. It involves all employees in an organization—managers and workers alike. Teamwork, personal discipline, improved morale, quality circles, and suggestions for improvement are regarded as the five major elements of Kaizen.

The main improvement framework of Kaizen leverages the use of 7QC tools, 5S, TQM, TPS, Lean Production System.

An example of Kaizen in detail

A tool and die department has been receiving several complaints about delays in the delivery of tools and even missing dies. Upon investigation, it was found that they were often misplaced and considerable time was spent searching for them, leading to delays and missing items. To set things right, management decided to adopt Kaizen.

As part of the Kaizen initiative, the following steps were taken:

- Old and outdated tools and dies were removed and placed in storage.
- New pieces were sorted and arranged in different racks based on the part numbers.
- Every store keeper was given a kit of necessary tools so that he or she did not have to waste time searching for the items.
- And, the entire office layout was redesigned to provide a better workspace for tool and die makers.

What is TPM?

Total Productive Maintenance (TPM) is a maintenance management system where every employee, from top management to the production equipment operator, maximizes the effectiveness of the production system by preventing accidents, defects, and breakdowns.

TPM improves overall effectiveness by maximizing equipment effectiveness and establishing a system of *preventive maintenance (PM)* across the lifespan of a piece of equipment. TPM is by autonomous groups or individuals and by departments such as engineering, operations, and maintenance.

The main difference between traditional maintenance and TPM are:

- Focus in TPM is preventive maintenance rather than breakdown maintenance
Ownership of daily maintenance is by machine operators and not maintenance department
- Autonomous groups jointly identify opportunities for improvement in equipment and make improvements regularly
- OEE (Overall Equipment Effectiveness) is commonly used as overall effectiveness metrics

PM (Preventive Maintenance)?

PM is a schedule of planned maintenance actions aimed at preventing machinery breakdowns and failures. The primary goal of preventive maintenance is to improve equipment reliability and prevent equipment failure by proactively replacing worn components before they fail.

An example the benefits of TPM

A steel furniture manufacturer faced production losses and rejections because of the frequent breakdowns and feeding defects of an automated coil feed fabrication line. The manufacturer decided to implement TPM, and as a first step, a 15-member team was chosen for TPM training. After completing the training in spring, the team set about implementing TPM. The team discovered that although the automated coil feed fabrication line was supposed to run 90 percent of the time; 40 percent of the time was spent in idling, minor stoppages, breakdowns, setups, and adjustments. Upon completing the TPM project, daily maintenance and productive maintenance caught problems before they happened and reduced the emergency maintenance of the machine. Consequently, there was significant reduction in setup time, stoppages, and idling time.

The summary of the results is as follows:

- Overall equipment effectiveness up by 25-65 percent.
- Quality defects down by 25-50 percent.
- Maintenance expenditures down by 10-50 percent.
- And, percent planned versus unplanned maintenance increased by 10-60 percent.