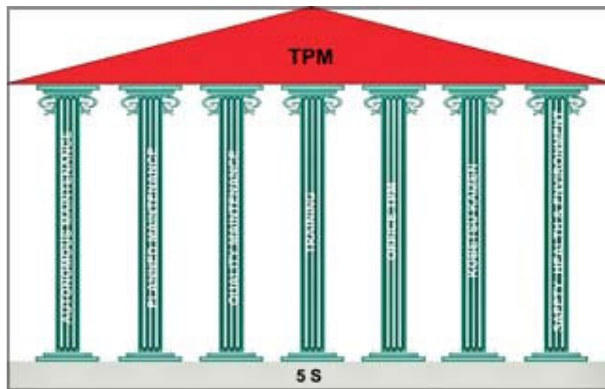


# Total Productive Maintenance

A new paradigm in manufacturing:

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Total Productive Maintenance (TPM) is a unique Japanese system which has been developed from the Preventive or Productive Maintenance (PM) concepts introduced from the USA. Preventive Maintenance was introduced in 1951 and then it developed into Corrective Maintenance in 1957. Maintenance Prevention was introduced as an activity to re-design the equipment and line, in order to be maintenance free.



TPM aims at establishing a corporate culture that will maximize production system effectiveness

The Japan Institute of Plant Maintenance (JIPM) began promoting TPM in fabrication and assembly industries and later it was actively adopted in process industries. In 1971, Nippon Denso Co. Ltd. First introduced and successfully implemented TPM in Japan. This was the beginning of TPM in Japan. Since then, TPM has spread throughout Japan, especially in the Toyota group. However, TPM has made a gradual change and the tendency to implement Condition Based Maintenance (CBM) can be seen from the early 80s. Implementing TPM in administrative and support department is increasing rapidly in Japan.

Interest in TPM outside Japan has also expanded in recent years. Many companies in the United States, Europe, Asia and South America are planning to or are actively pursuing TPM. Many companies in India have implemented TPM and achieved both tangible and intangible results. Unilever Sri Lanka and Premium Exports - Agarapathana (a subsidiary of Unilever) have implemented TPM and they received the TPM Excellence award from JIPM (Japan Institute of Plant Maintenance) in 2007.

Why is TPM so popular? Because it guarantees dramatic results, visibly transforms the work place and raises the level of knowledge and skill in production and maintenance workers. TPM helps restructure the corporate culture through improvement of human resources and plant equipment.

The production operator will get the ability to perform "Jishu Hozen" (Autonomous Maintenance) and he will transform into a maintenance technician. The maintenance technician will carry out only high quality, complex maintenance tasks and learn about executing a maintenance free equipment plan. In other words, maintenance engineers would transform into design engineers.

A unique feature of TPM is "Jishu Hozen" performed by operators and small group improvements through Kobetsu Kaizen activity (Focused improvement). TPM small group activities are an integral part of the formal activities of the organization. TPM small groups encompass the whole of the organizational hierarchy, from top management through middle management to the front line. TPM combines top down management - by objectives with bottom-up-front line, small group activities. The mechanism of TPM promotion is based on this philosophy. The success of small group activities depends on three factors, viz. motivation, ability and opportunity. While motivation and ability are matters of individual concern, opportunity is a question of environment. Satisfying all three requirements is an essential task for managers and supervisors in their roles as leaders.

The prevention philosophy in human beings and practising “gemba - gembutsu” with automation will build up a profitable corporate culture. Visuals and visual controls at the workplace and the kaizen philosophy (continuous improvement culture) creates a work friendly environment here people can work happily.

The attitude transformation from “I run you maintain,” to “I run I maintain” is a key achievement in TPM through Jishu Hozen.

TPM aims at establishing a corporate culture that will maximize production system effectiveness, organizing a “gemba-gembutsu” (the concept of “go and see the actual thing”), system to prevent losses and achieve such reduction to zero targets as “zero accidents”, “zero defects”, and “zero break downs” in the entire production system life-cycle, involving all functions of an organization including production, development, sales and management involving every member of an organization from top management to front line operators and achieving zero losses through the activities of overlapping small groups.

Even though TPM was defined as Total Productive Maintenance, recently “P” came to connote “Perfect, Production or Profit”, while “M” includes “management” besides maintenance.

5S is the foundation of a World - Class organization and no improvement method, concept can succeed without the basis of organization and standardization provided by the 5S's. 5S creates a safe, pleasant and work friendly environment and everybody loves it and increases employee's morale. Once 5S progress is at a steady pace, we can easily get the people's participation for the TPM journey. Once we establish a sustainable 5S organization with disciplined people, with disciplined thoughts and disciplined actions we can introduce any concept. That is why TPM starts with 5S.

TPM aims to establish good maintenance practices through the gradual pursuit of “the eight pillars of TPM” that would cover the entire organization including the supply chain, sales and marketing.

The eight pillars of TPM are -

1. Focused Improvement
2. Autonomous Maintenance
3. Planned Maintenance
4. Education and Training
5. Quality Maintenance
6. Early Management
7. TPM in Administration and Support
8. Safety Health and Administration

Focused Improvement is an activity performed by cross-functional project teams composed of people such as production engineers, maintenance personnel and operators. The activities are designed to minimize targeted losses that have been carefully measured and evaluated. Early management addressed both early product management and early equipment management.

