

An Introduction To Total Productive Maintenance (TPM)

Total Productive Maintenance (TPM) is best known for its use world-wide by major companies particularly in the food and chemical sectors. However, as the UK moves more and more into capital intensive advanced manufacturing the TPM approach will pay dividends in many sectors and in firms of all sizes and mark a path to the achievement of true global competitiveness.



TPM started as an approach to maintenance which aimed to integrate equipment maintenance into the manufacturing process. TPM was originated in Japan in 1971 from the Japanese Institute of Plant Maintenance (JIPM) following a couple of decades of development in various major companies. Since then TPM has expanded substantially to form a structured approach deploying a comprehensive set of tools and techniques in order to eliminate all losses across a whole organisation and throughout the value stream.

TPM has emerged as a credible way to give organisations the structure to make any improvements sustainable through employee ownership. A 12 step structure guides the organisation through the deployment of 8 Pillars (a type of major activity which is deployed to eliminate the

losses) combined with a number of more traditional improvement tools. The key to its success is the overlapping group structure deployed and the link to the organisation's Policy Deployment method.

The word 'total' in TPM signifies total organisation or total participation. Everyone in the organisation at all levels and across all functions plays an active role in TPM including contract and part time employees. It also means total life-cycle, pre-empting losses of all types throughout the life cycle of the production system. Finally it means total effectiveness, judged by maximising the Overall Equipment Effectiveness (OEE) performance measure.

OEE is a metric developed to measure the success of early TPM programmes. OEE enables organisations to benchmark and monitor their progress with simple, easy to understand metrics and it is one of the seven key measures of Quality, Cost and Delivery (QCD) which underpin all Industry Forum's offerings. It is not unknown for the initial measurement of OEE at the start of a project to be less than 40%. A well-managed TPM programme can, over a period of years raise this to over 90%. This means that the productivity of capital has effectively doubled. However, the philosophy of TPM is that the quest for improvement is unlimited and should never plateau.

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The TPM approach incorporates a proactive style of thinking, aiming at a zero condition or zero losses - zero accidents, zero defects and zero breakdowns. The traditional data driven reactive improvement approach will by itself never achieve a zero condition. The reactive data approach should be used to build the experience and understanding of the workforce to allow the adoption of a proactive approach.

TPM incorporates the familiar Demming Cycle – Plan, Do, Check, Act – and maps this onto the process model.



The role of management is critical in TPM - demonstrating and reinforcing the correct behaviour and attitude throughout the entire organisation, providing leadership and showing commitment to achieving and sustaining improvements. Management must provide a clear link between the improvement required and the policies that evolve from the long term vision and goals of the organisation. Priorities must be set and resources allocated with an appropriate level of follow up. Management must allocate time, initially for training in the appropriate tools and then and in the long term for the continual deployment of the tools.

Industry Forum can offer TPM Assessment, TPM Consultancy and TPM Training services to organisations in all sectors on a global scale. It is one of only six accredited JIPM TPM Assessment Agencies in the world and the only agency with assessors speaking English as their native first language.

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