

# TOTAL PRODUCTIVE MAINTENANCE

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# DEFINITION

*Total Productive Maintenance (TPM) is a maintenance program which involves a newly defined concept for maintaining plants and equipment. The goal of the TPM program is to markedly increase production while, at the same time, increasing employee morale and job satisfaction.*



# HISTORY:-

- Evolved from TQM.
- Japanese concept. (1951)
- Nippondenso was the first company.(1960)
- The first widely attended TPM conference held in the United States occurred in 1990.

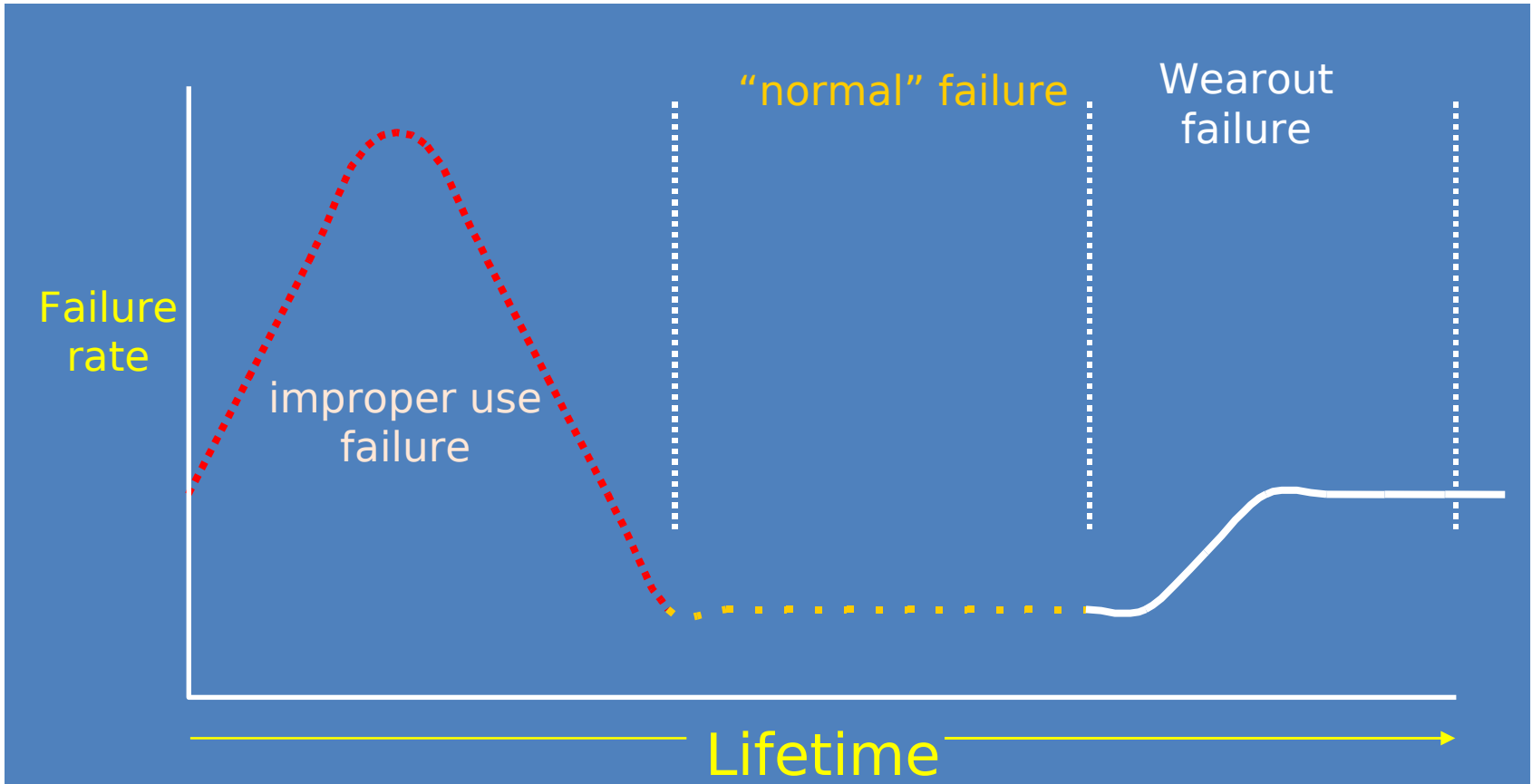


# TYPES OF MAINTENANCE

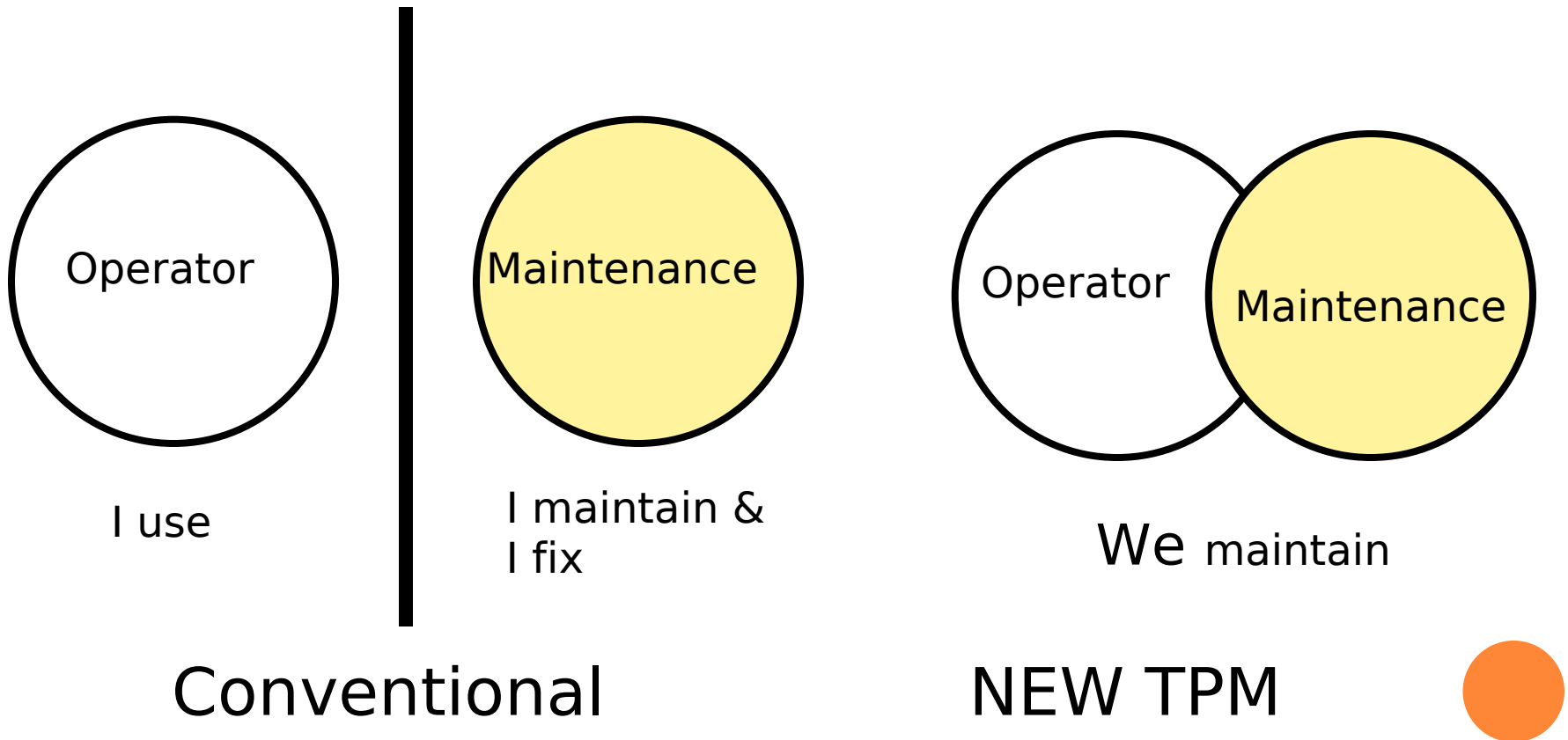
- 1. Breakdown maintenance**
- 2. Preventive maintenance**
  - 2a. Periodic maintenance ( Time based maintenance - TBM)*
  - 2b. Predictive maintenance*
- 3. Corrective maintenance**
- 4. Maintenance prevention**



# LIFETIME FAILURE RATES



# SHIFT IN ATTITUDES



# AUTONOMOUS MAINTENANCE

The principal way in which production workers participate in TPM

## Purpose

2. Helps operators learn more about their equipment.
4. Prepares operators to be active partners with maintenance and engineering in improving equipment performance and reliability



# BENEFITS OF TPM FOR OPERATORS & MAINTENANCE PERSONNEL

- Increased skills through additional training
- Better job satisfaction
  - *More challenging work*
  - *More involvement in solving equipment problems*
  - *Workers gets the feeling of owning of machine.*
- Better job security





# INTRODUCTION OF TPM IN AN ORGANIZATION

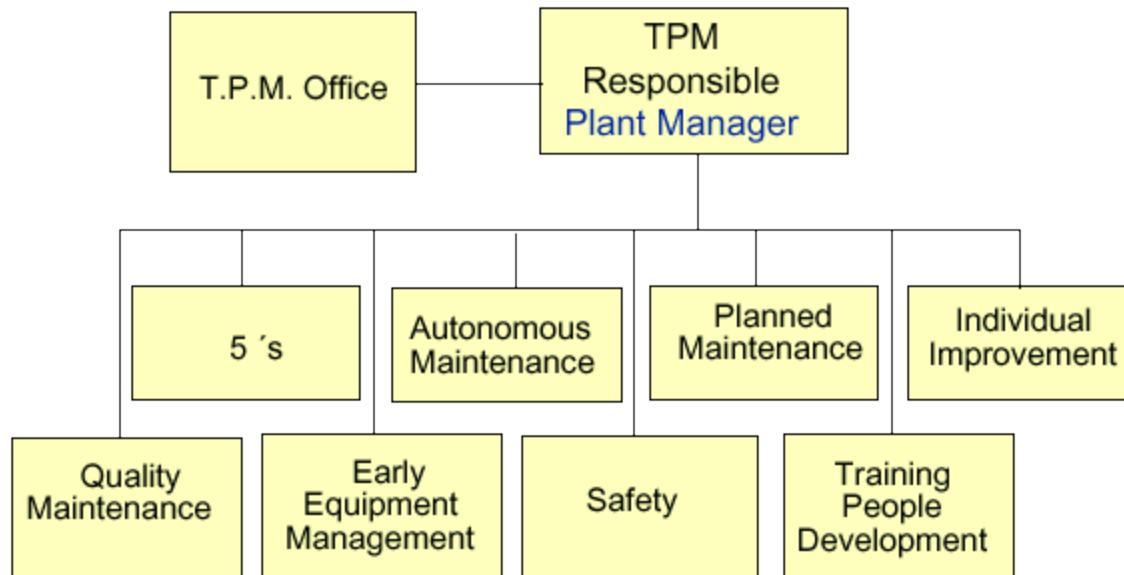


# VARIOUS STAGES :

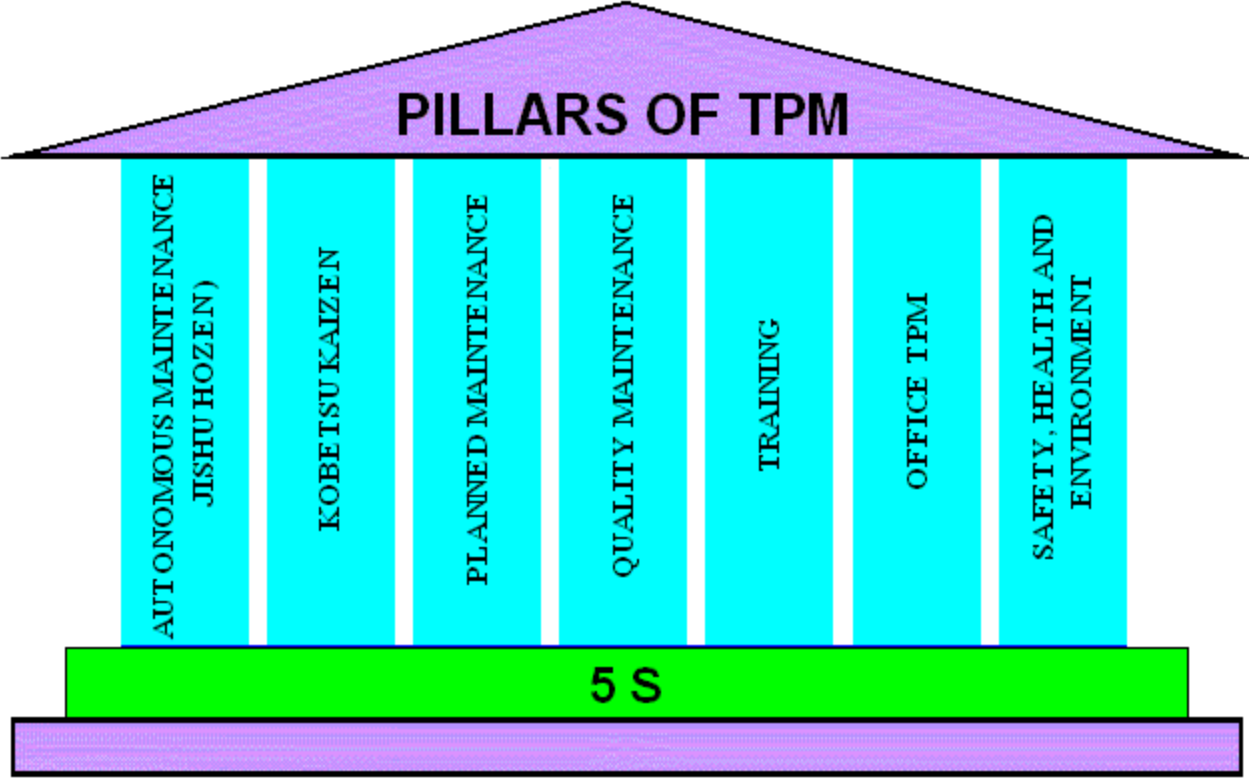
- a). PREPARATORY STAGE**
- b). INTRODUCTION STAGE**
- c). IMPLEMENTATION**
- d). INSTITUTIONALISING STAGE**



## T.P.M. PLANT WIDE STRUCTURE



# Pillars of TPM



# PILLAR 1 - 5S :

Japanese Term	English Translation	Equivalent 'S' term
Seiri	Organisation	Sort
Seiton	Tidiness	Systematise
Seiso	Cleaning	Sweep
Seiketsu	Standardisation	Standardise
Shitsuke	Discipline	Self - Discipline



## PILLAR 2 - JISHU HOZEN ( AUTONOMOUS MAINTENANCE ) :

- This pillar is geared towards developing operators to be able to take care of small maintenance tasks, thus freeing up the skilled maintenance people to spend time on more value added activity and technical repairs. The operators are responsible for upkeep of their equipment to prevent it from deteriorating.



## PILLAR 3 - KAIZEN :

- "Kai" means change, and "Zen" means good.
- This pillar aims at reducing losses in the workplace that affect our efficiencies.



## **PILLAR 4 - PLANNED MAINTENANCE :**

### ***PILLAR 4 - PLANNED MAINTENANCE :***

It is aimed to have trouble free machine and equipments producing defect free products for total customer satisfaction . Types :-

- Breakdown Maintenance
- Preventive Maintenance
- Corrective Maintenance
- Maintenance Prevention





## PILLAR 5 - QUALITY MAINTENANCE :

- QM activities is to set equipment conditions that preclude quality defects, based on the basic concept of maintaining perfect equipment to maintain perfect quality of products.

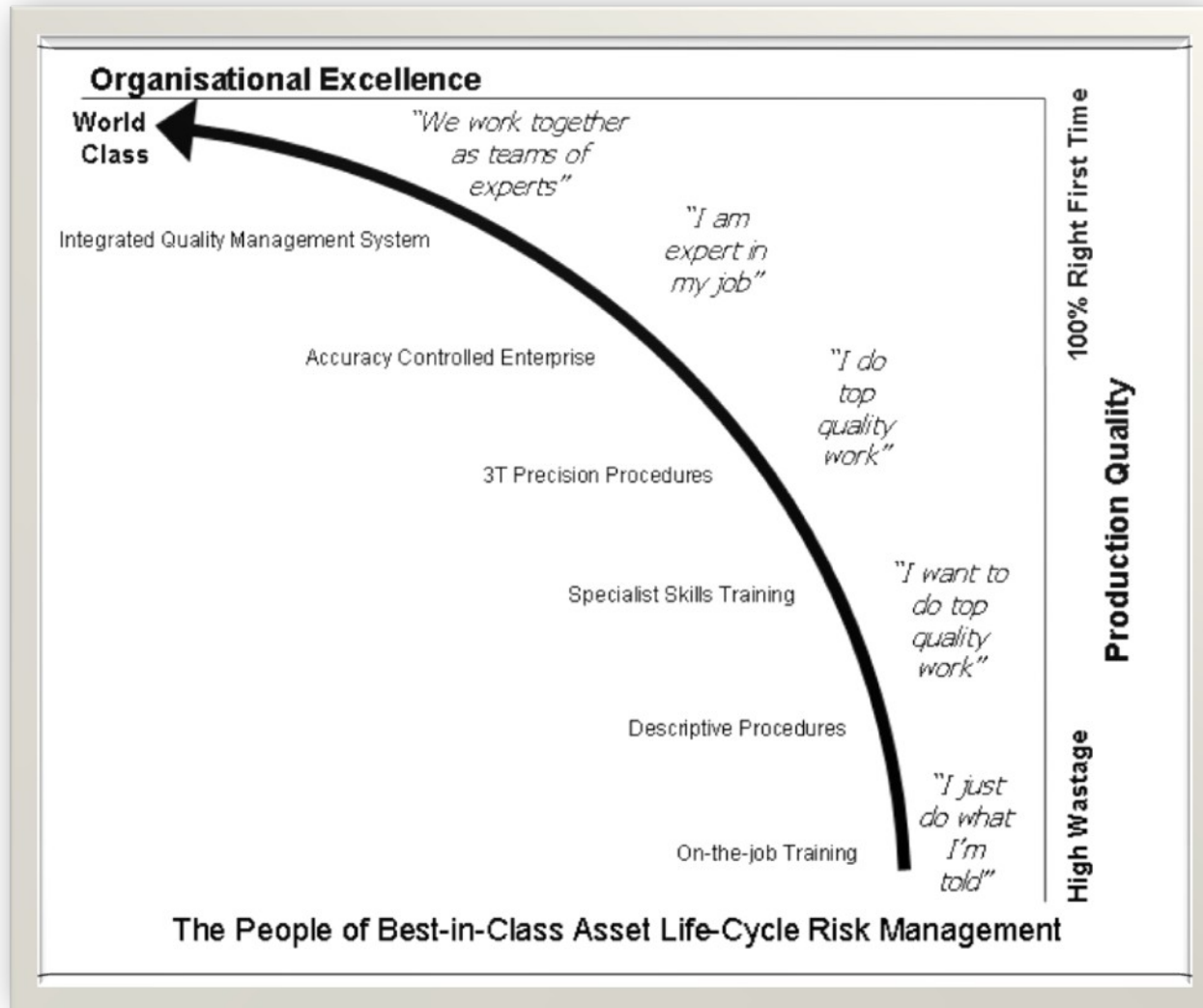


## PILLAR 6 - TRAINING :

- Phase 1 : Do not know.  
Phase 2 : Know the theory but cannot do.  
Phase 3 : Can do but cannot teach(skilled)  
Phase 4 : Can do and also teach. (expert).



# THE PEOPLE OF SUCCESSFUL TPM



# PILLAR 7 - OFFICE TPM :

- Office TPM must be followed to improve productivity, efficiency in the administrative functions and identify and eliminate losses. This includes analyzing processes and procedures towards increased office automation.



# PILLAR 8 - SAFETY, HEALTH AND ENVIRONMENT

## **Target :**

- Zero accident,
- Zero health damage
- Zero fires.



# **DIRECT BENEFITS OF** **TPM**

- OEE up by 25-65%.
- Rectify customer complaints.
- Reduce the manufacturing cost by 30%.
- Satisfy the customers needs by 100 % .
- Reduce accidents.
- Follow pollution control measures.

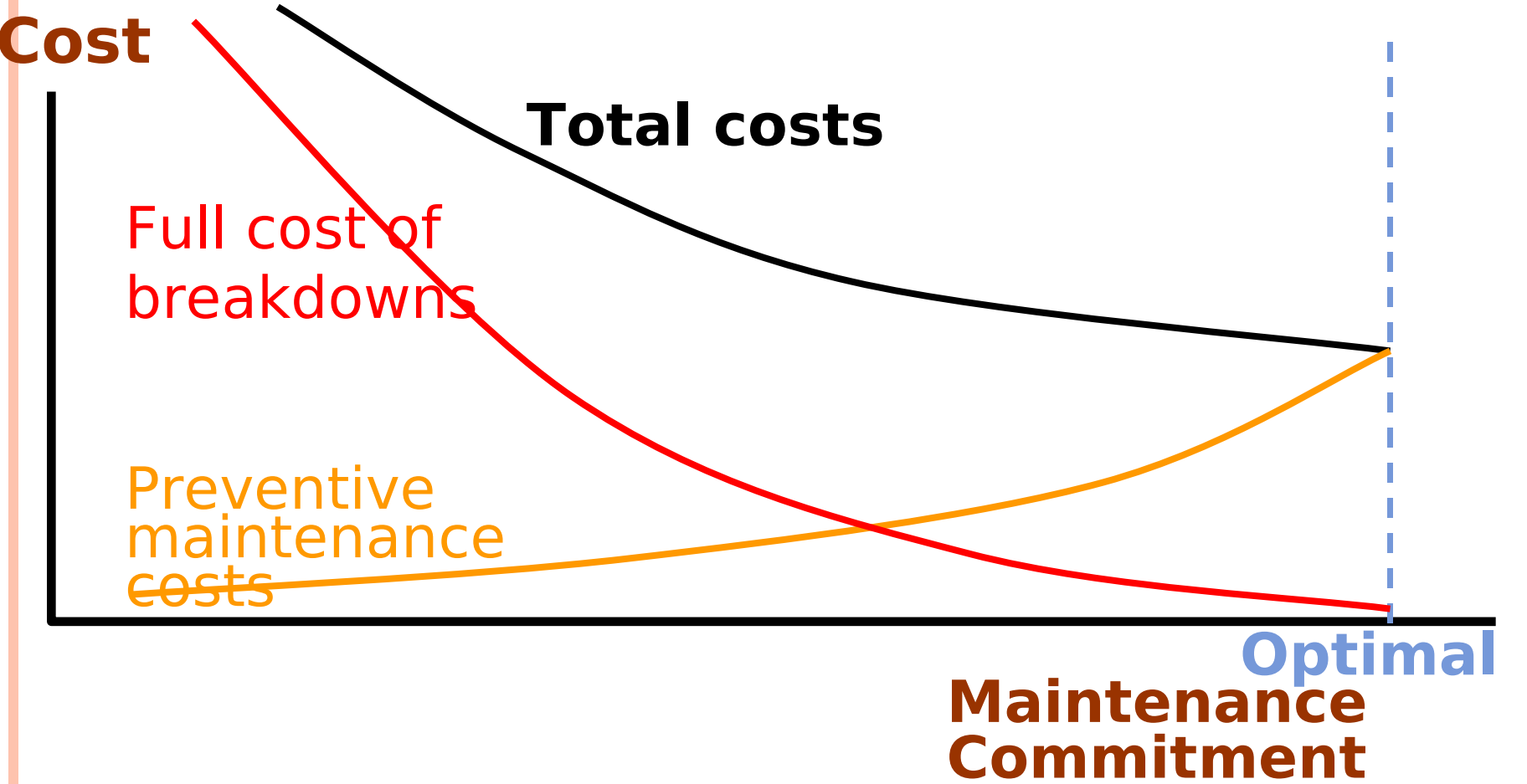


# ***INDIRECT BENEFITS OF TPM***

- Higher confidence level among the employees.
- Keep the work place clean, neat and attractive.
- Favorable change in the attitude of the operators.
- Achieve goals by working as team.
- Share knowledge and experience.
- The workers get a feeling of owning the machine.



# MAINTENANCE COSTS FULL COST VIEW





# CONCLUSION:

- Today, with competition in industry at an all time high, TPM may be the only thing that stands between success and total failure for some companies.
- If everyone involved in a TPM program does his or her part, an unusually high rate of return compared to resources invested may be expected.



## REFERENCES:

- Wikipedia
- Journal of Industrial Engineering
- Industrial Engineering & Quality Maintenance
- [www.scribid.co.in](http://www.scribid.co.in)
- [www.google.com](http://www.google.com)



***THANK  
YOU.***



# QUERIES

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