# The cost of Implementing TPM

- SMN 4842
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# The cost of Implementing TPM

- The Major Cost elements:
  - Direct cost of TPM team member
  - Direct cost of other company personal
  - The cost of external resources
  - The cost of spare parts, materials and other purchase items
  - Training and consultancy support costs
  - Lost production cost revenue resulting from the need to stop the process whilst TPM activities take place

# The Financial Benefits of Implementing TPM

- OEE is direct measure of earning capacity of facilities, can be used to measure the financial benefits arising from TPM applications
- The process in the company add value (value added) to materials or parts

# The Financial Benefits of Implementing TPM

- Example of a press machine used to produce parts from blank sheets
  - Cost of blank sheet = RM 5
  - Value of pressed part = RM 7
  - Added value = RM7 – RM5 = RM 2/ part
  - The process has earned RM 2 for the company. If the expected throughput is 50 panels per hour, the added value per hour is

    added value/hour = RM2 x 50 = RM100/hour

(expected throughput is the theoretical cycle time)

# The Financial Benefits of Implementing TPM

- Due to six major losses, the effectiveness of the press machine is only 70%, then the actual value added per hour is

  Actual value added per hour = RM100 x 0.7

  = RM70/hour

  The loss of added value due to six major losses is

  = RM100 x (100% – 70%)

  = RM30

# The Financial Benefits of Implementing TPM

- If the press were used on a single shift basis and operated on average 35 hours per week and 48 weeks per year,

  The average loading time/year = 35hrs x 48 wks
  = 1680 hrs/year

  Annual loss is a calculated based on the loading hour and loss per hour

  Annual loss = RM30 x 1680 = RM50,400/year

# The Financial Benefits of Implementing TPM

- The implementation of TPM will increase the OEE, therefore will increase earning capacity of the process.
- For each 1% improvement in OEE the earning gains is,

Loss of effectiveness =100% – 70%
= 30% = RM 50,400

1% improvement = RM 50,400/30%
= RM1680/per cent

# The Financial Benefits of Implementing TPM

- For improvement in OEE is at 5%
  - The increase in earning capacity = RM1680 x 5
    = RM 8400
  - If improvement in OEE is at 10%, the increase in earning capacity is RM 16800.

# The Financial Benefits of Implementing TPM

- Let say the cost of implementing TPM is;
  - The direct cost of TPM team member = RM 1300
  - The direct cost of other company personnel = RM 360
  - The cost of external service = RM 250
  - The cost of spare parts, materials and other purchaced items = RM 500
  - Training and consultancy support costs = RM 2500
  - Total cost = RM 7710

# The Financial Benefits of Implementing TPM

- The financial justification for undertaking TPM on the press machine can be based by the pay back period for the investment in TPM
- 5% improvement = RM7710/RM8400

  = 0.92 year (11 months)

  10% improvement = RM7710/RM 16899

  = 0.46 year (5.5 months)