Gurus in the area of Quality Management

MUHAMMAD ASIF
THE AIM OF TODAY’S LECTURE IS TO

*Take advantage of received wisdom on TQM*

Learn the philosophies of quality gurus
W. EDWARDS DEMING

• Statistics professor, specialized in sampling
• Went to Japan after WW II
• Helped Japanese focus on and improve quality
• System (not employees) is cause of poor quality
• Fourteen Points
DEMING’S PARADIGM

1. Intrinsic & extrinsic motivation
2. Management needs to improve and innovate processes to create results
3. Optimize the entire system toward its aim
4. Cooperation is better than competition
Deming’s 14 Points

1. Create & publish the aim & purpose of organization
2. Learn new philosophy of prevention
3. Cease mass inspection
4. Select a few suppliers based on quality
5. Constantly improve systems
6. Institute vigorous training
7. Instill leadership among supervisors
8. Eliminate fear among employees
9. Eliminate barriers between departments
10. Eliminate slogans only system
11. Remove numerical quotas
12. Enhance worker pride
13. Institute education & development
14. Implement these 13 points
TAGUCHI

• Before Taguchi, goalpost view of quality existed, anything that falls within specifications is OK.
• Taguchi rejected above belief, there is loss in deviating from nominal value with in specification limits
Conventionally

Cost of poor quality = \( \text{No. of items outside specs.} \times \text{Cost of rework/scrap.} \)

Short-term costs may simply be those of non-conformance, any item manufactured away from nominal would result in some loss to the customer or the wider community*

1. Through early wear-out,
2. Difficulties in interfacing with other parts,
3. Itself wide of nominal.
Loss Function

L = $K(y-m)^2$

- $K = \frac{C}{d^2}$
- $C =$ Cost of exceeding specification limits
- $d =$ allowable deviation from the nominal value used to determine the specification limits
- $L =$ Loss
- $m =$ nominal value
- $y =$ value of a quality characteristics for a particular item
Joseph Juran

- 80% of defects are controllable
- Renowned for his quality trilogy.

QUALITY TRILOGY:
- Quality Planning.
- Quality Control.
- Quality Improvement
Quality planning

Cost of poor quality

Operations begin

Time

Lessons learned

Quality control (during operations)

Sporadic spike

Chronic waste (an opportunity for improvement)

Quality improvement

Original zone of quality control

New zone of quality control
Philip B. Crosby

- “QUALITY IS FREE”
- Management must be firmly behind any quality plans
- Do it right the first time
ISHIKAWA:

• The Japanese engineer
• Continuously improve the quality
• The organization which does not make a change in 06 months is a dead organization
THOSE WHO CAN’T CHANGE THEIR MINDS CAN’T CHANGE ANYTHING

(George Bernard Shaw)