

# IE407 Total Quality Management

## Lecture 25

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## Reminder: SA grade

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- ▶ SA grade will be determined by the attendance system
- ▶ More than 8 absents will automatically lead to SA grade
- ▶ Please be careful about your attendance in lectures







## Besterfield Chapter 7: Performance Measures







# Relating Quality Cost to Business Measures



# Quality Cost Bases

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- ▶ Reporting of quality cost is more meaningful and have more impact if these are related to the overall business measures such as total sales, total profit and the like
  - ▶ Some examples of bases are
    - ▶ As a percentage of sales
      - ▶ Most accounting reports already use this practice
    - ▶ As compared to profit
      - ▶ Comparison with profit can surprisingly show that cost of quality are more than profit
    - ▶ As related to production
    - ▶ As related to unit of production
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- ▶ This facilitates comparison with other similar products



## Quality Cost Bases - 2

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- ▶ Quality cost reports are issued periodically (typically monthly) by accountants
- ▶ Data for previous period(s) is usually shown for comparison
- ▶ This can be used for preparation of budget for the next period and for forming strategy for control
- ▶ See figure 7-6 on page 171
- ▶ It is normal practice to use more than one indexes to avoid disadvantages of single index







# Analysis



# Trend Analysis

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- ▶ Comparison of present cost levels to past levels on the basis of:
  - ▶ Cost category, sub-category, product, measurement base, plants within a corporation, department, work center
- ▶ Trend analysis provides information for
  - ▶ Long-range planning
  - ▶ Instigation and assessment of quality improvement programs
- ▶ While using trend analysis due considerations should be given to chance variations and time lag between occurrence of a cost and its reporting
- ▶ The important factor to observe is the trend
- ▶ Attempt end of chapter problems





# Pareto Analysis

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- ▶ Pareto analysis help us focus attention on those costs whose reduction will bring substantial benefit
- ▶ In this analysis the cost categories are listed in descending order of respective cost. A typical pattern is usually observed
  - ▶ A small number of quality cost categories account for a large percentage of total cost. These are referred to as the “vital few”
  - ▶ A large number of quality cost categories account for the remaining small percentage of total cost. These are referred to as the “useful many”
- ▶ Projects can be developed to reduce the quality costs
- ▶ identified as vital few



## Pareto Analysis - 2

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- ▶ See examples on p. 441-443
- ▶ Do problems at the end of chapter





# Improvement Action Strategy and Plan

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- ▶ The basis of action plan is that failure have a root cause and these causes are preventable
  - ▶ Increasing inspection to detect defect will not eliminate root causes
  - ▶ Management should take structured approach towards determining and elimination of root causes
    - ▶ Management techniques like structured problem solving, Kaizen, Six Sigma, discussed in Chapter 5, are often used
  - ▶ Deming has indicated that 85% of quality problems cross departmental boundaries and functional lines
    - ▶ To solve such problems formation of cross functional teams is most appropriate
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# Limitations of Quality Cost

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- ▶ Quality cost information only provides broad direction towards problems and usually does not suggest specific actions
- ▶ Further detailed analysis is required to narrow down to pinpoint the specific problem area
  - ▶ Such as item-wise analysis of rejections, warranty claims, customer complaints
- ▶ Another limitation of use of quality cost information for improving product or service quality is that often quality cost data is not accurate
  - ▶ For this reason it is not reviewed seriously





# Malcolm Baldrige National Quality Award

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- ▶ See the following presentations available in LMS
  - ▶ Introduction to Baldrige Program
  - ▶ Introduction to the Baldrige Excellence Framework
  - ▶ Baldrige Excellence Framework
- ▶ These presentations are from NIST website:  
[www.nist.gov/baldrige/](http://www.nist.gov/baldrige/)





# Other Quality Awards

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- ▶ Japan: Deming Prize  
([https://www.juse.or.jp/deming\\_en/award/](https://www.juse.or.jp/deming_en/award/))
- ▶ Europe
  - ▶ EFQM Award (<http://www.efqm.org>)
  - ▶ Formerly European Foundation Quality Management
- ▶ Pakistan Quality Award
  - ▶ <http://www.npo.gov.pk/prime-minister-quality-award/>
- ▶ Read about these awards from the text book and/or their respective websites





# Balanced Scorecard

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- ▶ Use of only financial measures such as profit is not adequate to assess overall business performance
  - ▶ For example, financial measures provide no information about customer satisfaction
- ▶ In 1990, Robert Kaplan and David Norton proposed a more comprehensive set of measures to bring them in line with achievement of strategic goals
  - ▶ They named it balanced scorecard
- ▶ Balanced scorecard approach provides a mechanism to achieve feedback on internal business processes and external output such as customer satisfaction





# Balanced Scorecard - 2

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- ▶ Balanced scorecard suggests that we review the organization from four perspectives:
    - ▶ The learning and growth perspective
    - ▶ The business process perspective
    - ▶ The customer perspective
    - ▶ The financial perspective
  - ▶ For each perspective
    - ▶ Appropriate metrics are developed
    - ▶ Data is collected using the metrics
    - ▶ Data is analyzed to gain insight
  - ▶ See figure 7-8 on page 181 for deriving performance measures from strategy
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# Comments

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- ▶ Read concluding remarks on page 184





# References

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- ▶ Besterfield, Dale H. and others. 2019. *Total Quality Management*, 5th edition. Pearson India

