

### Project Selection

$$PV = \frac{FV}{(1 + n)^r}$$

$$NPV = PV - \text{Costs}$$

### Time Management

$$\text{PERT Estimate} = \frac{P \cdot 4M \cdot O}{6}$$

$$SD = \frac{P \cdot O}{6}$$

$$\text{Var} = \frac{P \cdot O \cdot 2}{6 \cdot 6}$$

$$\text{Float (Slack)} = LS - ES \text{ or } LF - EF$$

### Cost Management

Rough order of Magnitude (ROM) estimate

- During project initiation • 50%
- During project planning • 10 / • 50%
- During project definitive • 10%

$$CV = EV - AC$$

$$SV = EV - PV$$

$$CPI = \frac{EV}{AC}$$

$$SPI = \frac{EV}{PV}$$

$$EAC_{@ \text{ BudgetedRate}} = AC + BAC - EV$$

$$EAC_{@ \text{ CurrentRate}} = \frac{BAC}{CPI}$$

$$EAC_{@ \text{ CPI \& SPI}} = AC \cdot \frac{BAC \cdot EV}{CPI \cdot SPI}$$

$$ETC = BAC - AC$$

$$\% \text{ Complete} = \frac{EV}{BAC} \cdot 100$$

$$VAC \text{ (Variance at Completion)} = BAC - EAC$$

$$TCPI = \frac{BAC \cdot EV}{BAC \cdot AC} \cdot \frac{\text{Workremaining}}{\text{Fundsremaining}}$$

### Quality Management

Joseph Juran

- 80/20 principle
- Involvement of management
- Fitness-for-use

W. Edward Deming

- Plan-do-act-check cycle
- TQM 14 points
- 7 deadly sins

Philip Crosby

- Cost of poor quality (non-conformance)
- Prevention over Inspection
- Zero defect is the standard
- Quality means “conformance to requirements”

$$1 \sigma = 68.26\%$$

$$2 \sigma = 95.46\%$$

$$3 \sigma = 99.73\%$$

$$6 \sigma = 99.99\%$$

### Human Resource Management

Maslow's Hierarchy of Needs

- People look up to satisfy next higher level of needs only when they are satisfied with lower level of need

Frederick Herzberg's Two-Factor Theory

- Hygiene Factors and Motivation Factors
- the absence of hygiene factors can create job dissatisfaction, but their presence does not motivate or create satisfaction

Douglas McGregor's Theory X & Theory Y

- Theory X - employees are micromanaged
- Theory Y - managers have trust in employees

David McClelland's Achievement Motivation

- People are motivated by the inclination to achieve obtainable goals and by feedback

### Procurement Management

$$PTA = \frac{CP \cdot TP}{BSR} \cdot TC$$