

Feasibility Study

Information Policy

08



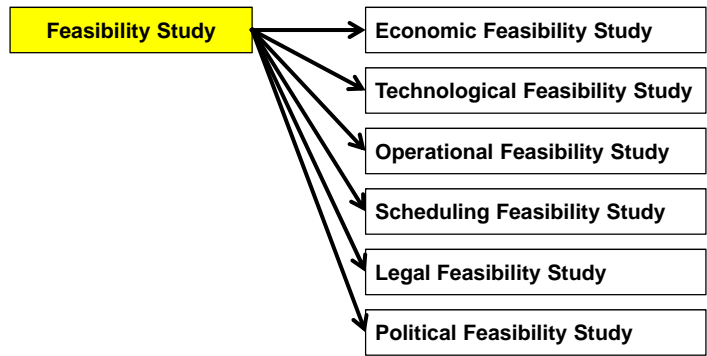
- 164323-01
- Information Policy
- Spring 2014
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- 01. Problem Solution
- 02. Problem Definition and Alternative Design
- 03. Feasibility Study

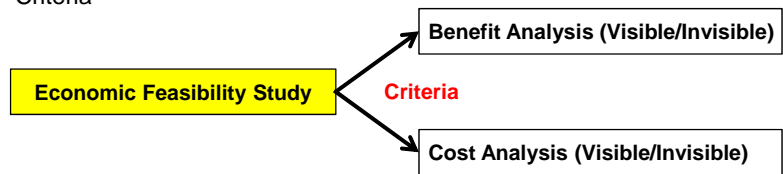
03. Feasibility Study

- Types of Feasibility Study



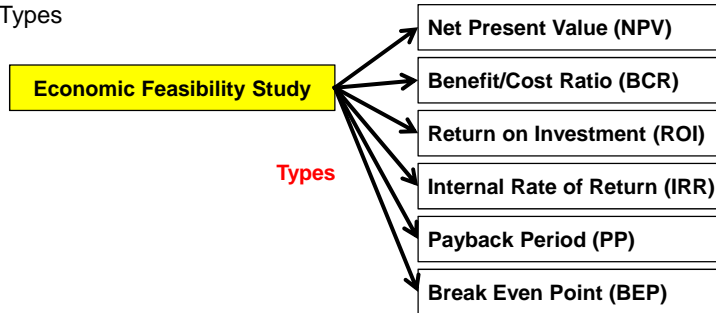
03. Feasibility Study

- Economic Feasibility Study
 - Criteria



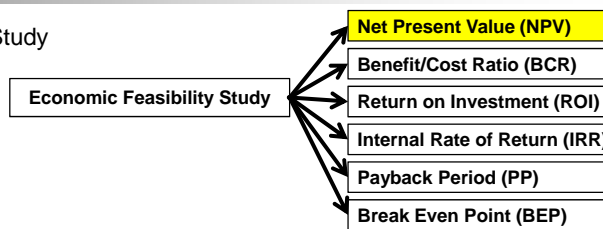
03. Feasibility Study

- Economic Feasibility Study
 - Types



03. Feasibility Study

- Economic Feasibility Study



$$NPV = -Principal + \sum_{i=1}^n \frac{payment_i}{(1 + rate)^i}$$

$$NPV = \sum_{t=0}^n \frac{(Benefits - Costs)_t}{(1 + r)^t}$$

where:
 r = discount rate
 t = year
 n = analytic horizon (in years)

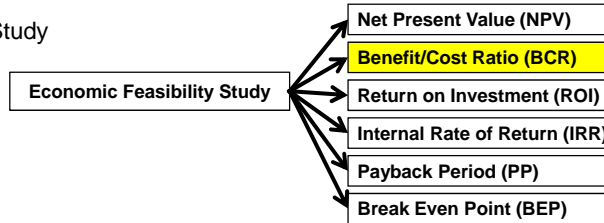
$$NPV = -C_0 + \sum_{i=1}^T \frac{C_i}{(1 + r)^i}$$

$$NPV = -C_0 + \frac{C_1}{1 + r} + \frac{C_2}{(1 + r)^2} + \dots + \frac{C_T}{(1 + r)^T}$$

- C_0 = Initial Investment
 C = Cash Flow
 r = Discount Rate
 T = Time

03. Feasibility Study

- Economic Feasibility Study



$$BCR = \frac{PV_{benefits}}{PV_{costs}}$$

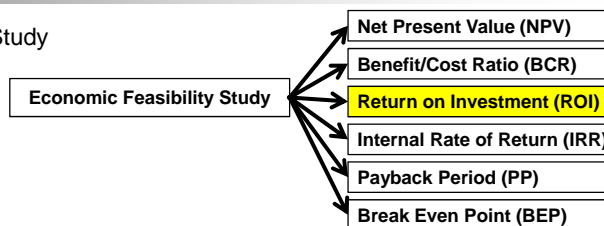
where:
 $PV_{benefits}$ = present value of benefits
 PV_{costs} = present value of costs

$$BCR = \frac{B_{total}}{C_{total}} \quad [14]$$

Where: BCR = Benefit-cost ratio
 B_{total} = Sum of discounted annual total benefit [\$]
 C_{total} = Sum of discounted annual total cost [\$]

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- Economic Feasibility Study



Calculating Financial ROI

$$\text{Simple ROI} = \frac{\text{Amount of Financial Gain}}{\text{Total Investment Amount}}$$

$$\text{Discounted ROI} = \frac{\text{Net Present Value of Benefits}}{\text{Total Present Value of Costs}}$$

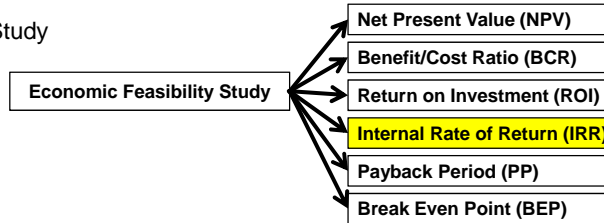
Which can also be stated:

$$ROI = (PV \text{ Benefits} - PV \text{ Cost}) / PV \text{ Cost}$$

("Cost" refers to an investment amount)

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Internal Rate of Return

n = number of cash flows

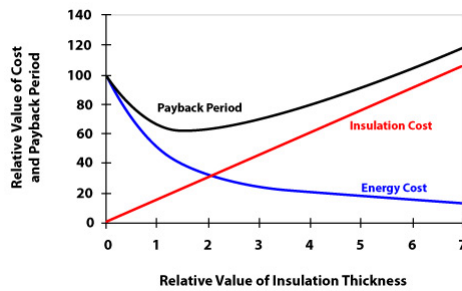
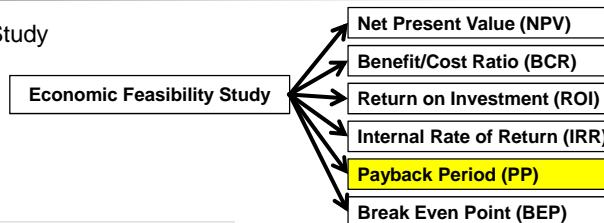
CF_j = cash flow at period j .

IRR = Internal Rate of Return

$$0 = \sum_{j=1}^k CF_j \cdot \left[\frac{1 - (1 + IRR)^{-n_j}}{IRR} \right] \cdot \left[(1 + IRR)^{-\sum q_j} \right] + CF_0$$

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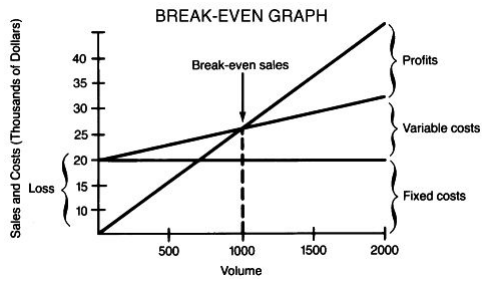
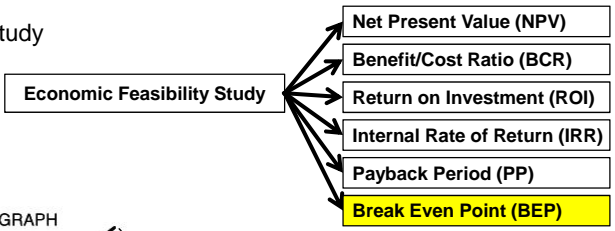
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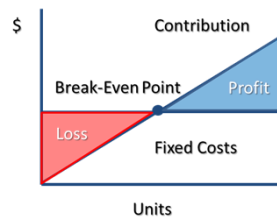
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