CSE4708: Software Project Management

Unit II : Project Evaluation & Estimation

Topic: Cost Benefit Analysis

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Week -4

Project Evaluation and Estimation

Meaning: (What, How, Who, Why)

- What: It is a specialized planning process which involves systematic, objective and comprehensive appraisal of development programmes for individual commodities and/or projects.
- How: it is conducted by assessing or apprising it's operational efficiency; technically, economically, financially and managerially.
- Who: It is usually conducted by a group of outside experts

Project Evaluation and Estimation

Meaning: (What, How, Who, Why)

- Why? It is done in order to find out projects achievement and weaknesses and to suggest ways and mean to overcoming the weakness and to improve its operation.
- In summary: It is a process of evaluating the rate of return on a project, its social profitability and its side effects on the growth rate of population, on employment , on labor and management training and on rate of reinvestment.

Project Evaluation and Estimation

Project evaluation involves 4 stages:

- Review: Review of the situation before the project is actually started
- Appraisal: This is done in order to find out how much has been accomplished and what remains to be accomplished
- Recommendation: Suggestions on ways and means to improve its operation further and to plug loopholes
- Evaluation: Evaluation of the end achieved by the project when it is complete and is in full operation

Cost – Benefit Analysis

- One of the main ways people make decisions is by using a cost benefit analysis.
- Cost benefit analysis is a process used primarily by businesses that weighs the sum of the benefits, such as financial gain, of an action against the negatives, or costs, of that action.
- The technique is often used when trying to decide a course of action, and often incorporates dollar amounts for intangible benefits as well as opportunity cost into its calculations.

Cost – Benefit Analysis

- It is the most popular and appropriate method of apprising projects .
- It helps the planning authority in making correct investment decisions to achieve optimum resource allocation by maximizing the difference between the present value of benefits and cost of a project
- It is used to describe and quantify the social advantages and disadvantages of a policy in terms of the common monetary unit.

Cost – Benefit Analysis

- Its objective function, Net Social Benefit , NSB, is expressed as:

NSB= Benefits – Costs

Cost – Benefit Analysis

There are 4 types of benefit-cost criteria commonly used:

- B-C
- B-C/I
- ΔB/ΔC
- B/C

- Note: I relates to direct investment and Δ is increment or marginal change

Cost – Benefit Analysis

B-C Criterion

- This favors large projects and makes small and medium size projects less beneficial.
- Therefore, can only be used in the determination of the scale of the project on the basis of the maximization of the difference between B & C

B-C/I Criterion

- Used in determining the total annual returns on a particular investment to the economy as a whole irrespective of the those accrue
- Note: I does not include the private investment that my have to be incurred by the beneficiaries of the project

B/C Criterion

- This is the best criterion.
- This benefit-cost ratio is the measure for evaluation of a project.
- If **B/C= 1**, the project is marginal
- If **B/C > 1**, the benefits are more that the cost
- If **B/C< 1** , the benefits are less that the cost

$\Delta B/\Delta C$ Criterion

- This is meant to determine the size of a project that has already been selected and is not for selecting a project

Cost – Benefit Analysis

- The benefit cost ratio formula does not take into account the **time horizon** of the project.
- Future benefits and costs cannot be treated at per with present benefit and costs
- Therefore , the need for **discounting the future benefits and costs** because society prefers the present to future.
- For this reason economist have come up with a number of ‘decision rules’ or criteria.

Cost – Benefit Analysis

- Cost-Benefit Analysis (CBA) is a technique used by companies to arrive at the key decision after working out costs and benefits of a particular action with the help of different models including Net Present Value, Benefit-Cost Ratio etc.

References

- Bob Hughes and Mike Cotterell, “Software Project Management ”, Tata McGraw Hill, 4th edition, 2006 .
- Software Project Management, Tutorialspoint. https://www.tutorialspoint.com/software_engineering/software_project_management.htm (accessed on 18th July 2020).