

Name : Asghar Hussain  
Id : 13461  
Subject : Software project management  
Degree : BS(SE)  
Module : 7<sup>th</sup> semester  
Submitted to : Mr Zain Shaukat

**Question No 1 :** Explain cost benefit analysis with an example solved?

**Answer:** A standard way to assess the economic benefits.

Identify and estimate all the costs and benefits of carrying out the project.

Express the cost and benefits in a common unit for easy comparison.

Cost benefit analysis is a process used primarily by businesses that weighs the sum of benefits.

Example, an example of cost benefit analysis includes cost benefit ratio where suppose there are two projects where one project is incurring a total cost of \$10000 and earning total benefits of \$14000 whereas on the other hand project two is incurring costs of \$11000 and earning benefits of \$20000, by applying cost benefit analysis the cost benefit ratio of the first project is 1.5 ( $\$10000/\$14000$ ) and the ratio of the second project is 1.81 ( $\$11000/\$20000$ ) which means project two is feasible being having high cost benefit ratio.

**Question No 2 :** What is FPA and OPA , Solve an example?

**Answer: Functional point analysis(FPA):** FPA is one of the most preferred and widely used estimation technique used in software engineering. FPA is used to make estimate of the software project including its testing in the terms of functionality or function size of the software product. However the functional point analysis may be used for the test estimation of the product.

**Example,**

Inputs 5 simple \* 2 = 10

Outputs 6 averages \* 3 = 18

Interfaces 3 average \* 7 = 21

4 complex \* 10 = 40

**Organizational process assets(OPA) :** OPA are any specific knowledge and documents including processes and plans that are created and adopted to be used in the performing organization. The OPA may be updated during the project execution as new knowledge is gained.

**Example,** OPA include the documentation, project plan template, security policies and company knowledge base are all categorized as organizational process assets.

**Question NO 3 :** Perform Cocomo II estimation on any scenario from google?

**Answer : Scenario :** Use the COCOMO II model to estimate the effort required to build software for a simple ATM that produces 12 screens, 10 reports, and will require approximately 80% as new software components. Assume average complexity and average developer/environment maturity. Use the application composition model with object points.

Object	Count	Complexity	Weight Factor	Total Objects
Screen	12	Simple	1	12
Report	10	Simple	2	20
3GL Components	0	NA	NA	0
			Total objects points :	32

It is given that 80% of components have to be newly developed. So remaining 20% can be reused.

Now compute new object points as

$$\text{NOP} = (\text{object points}) * [(100 - \%reuse)/100]$$

$$\text{NOP} = 32 * (100-20)/100 = 32*80 / 100$$

$$\text{NOP} = 25.6 \text{ object points}$$

Since productivity is given average , we can assume PROD = 13

Hence , effort = NOP/PROD

$$\text{effort} = 25.6/13$$

$$\text{effort} = 1.96 \text{ person months}$$