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Submitted to Sir

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Software project management

Q#1: Explain Cost benefit analysis with an example solved??

Ans: Cost-benefit analysis may be an easy technique for scrutiny the business worth a project can manufacture with the price of manufacturing it. Project managers use analytic thinking within the project initiation section to indicate the worth of doing a project. Throughout project initiation, the sponsor and project managers should justify the project to urge the organization's approval to pay the cash. The analytic thinking compares the project's prices to the business worth it'll deliver. Few organizations need to travel ahead with comes which will price quite the worth they're going to manufacture. Thus project managers conduct analytic thinking by gathering information on the worth of the advantages and therefore the price of the project.

So,

Let's say you determined that the advantages made by the project would be price \$15,000. And you calculated the price of manufacturing those advantages at \$10,000. Then you'd divide the advantages (15,000) by the prices (10,000) and calculate the cost-Benefit quantitative relation of one.5.

Many organizations have rules concerning what cost-benefit relationship the project should manufacture to achieve approval. In some organizations, new comes should have a cost-benefit quantitative relation of one.2 to be approved. Which means the advantages of the project exceed the prices by 2 hundredths. From the associate's external purpose of reading, a project that pays back its prices and 2 hundredths of its prices seems like a fairly smart investment. Alternative organizations use higher or lower cost-benefit ratios.

In analytic thinking, you compare the greenback worth of the price of a project, a deliverable or an amendment request to the greenback worth of the advantages

you expect it to provide. Here is another example. You'll calculate a project which will manufacture advantages price \$290,000 and can price \$272,500. Thus its advantages exceed its prices by \$17,500 or 6%. Analytic thinking on a little project is as easy as dividing the advantages by the prices to calculate the benefit-to-cost ratio: $290,000/272,500 = 1.06$.

Q#2 : What is FPA and OPA, Solve an example?

FPA:

FPA is employed to create estimate of the software package project, together with its testing in terms of practicality or operate size of the product. However, purposeful purpose analysis could also be used for the check estimation of the merchandise. The purposeful size of the merchandise is measured in terms of the operate purpose, that may be a normal of measuring to live the software package application.

Objectives of FPA :

The basic and first purpose of the purposeful purpose analysis is to live and supply the software package application purposeful size to the shopper, customer, and also the neutral on their request. Further, it's wont to live the software package project development at the side of its maintenance, systematically throughout the project regardless of the tools and also the technologies.

Example:

Compute the function point, productivity, documentation, cost per function for the subsequent data:

- 1.Number of user inputs = 24
- 2.Number of user outputs = 46
- 3.Number of inquiries = 8
- 4.Number of files = 4

5. Number of external interfaces = 2

6. Effort = 36.9 p-m

7. Technical documents = 265 pages

8. User documents = 122 pages

9. Cost = \$7744/ month

Various processing complexity factors are: 4, 1, 0, 3, 5, 4, 4, 3, 3, 2, 2, 4, 5.

Solution:

Measurement Parameter	Count	Weighing factor	
1. Number of external inputs (EI)	24	*	4 = 96
2. Number of external outputs (EO)	46	*	4 = 184
3. Number of external inquiries (EQ)	8	*	6 = 48
4. Number of internal files (ILF)	4	*	10 = 40
5. Number of external interfaces (EIF) Count-total →	2	*	5 = 10 378

So sum of all f_i ($i \leftarrow 1$ to 14) = $4 + 1 + 0 + 3 + 5 + 4 + 4 + 3 + 3 + 2 + 2 + 4 + 5 = 43$

$$\begin{aligned} FP &= \text{Count-total} * [0.65 + 0.01 * \sum(f_i)] \\ &= 378 * [0.65 + 0.01 * 43] \\ &= 378 * [0.65 + 0.43] \\ &= 378 * 1.08 = 408 \end{aligned}$$

$$\text{Productivity} = \frac{FP}{\text{Effort}} = \frac{408}{36.9} = 11.1$$

Total pages of documentation = user document+ technical document
= 122+265 = 387 pages

Documentation = Pages of documentation/FP
= 387/408 = 0.94

$$\text{Cost per function} = \frac{\text{cost}}{\text{productivity}} = \frac{7744}{11.1} = \$700$$

OPA :

Object points are a way of measuring the size of an effort, such as Source Lines Of Code (SLOC) or Task Points. They are not necessarily related to objects in Object-based programs, the objects in question include screens, reports, and language modules. The number of unlabeled objects and the complexity of each object is estimated by the Object-Point value calculated and then calculated and then used to support the measurement of the effort required. Example for OPA is given in next question.

Q #3 : Perform Cocomo II estimation on any scenario from google?

Consider a database application project with

- 1.The application has four screens with four views each and seven data tables for three servers and four clients.
- 2.Application may generate two reports of six section each from seven data tables for two servers and three clients .10% reuse of object points.

Developer's experiences and capability in similar environment is very low. Calculate the thing point count, New object point and energy to develop such project.

Step-1:

Number of screens = 4

Number of records = 2

Step-2:

For screens,

Number of views = 4

Number of data tables = 7

Number of servers = 3

Number of clients = 4

Complexity level for each screen = medium

For reports,

Number of sections = 6

Number of data tables = 7

Number of servers = 2

Number of clients = 3

Complexity level for each report = difficult

Step-3:

Complexity weight for each screen = 2

Complexity weight for each report = 8

Step-4:

Object point count

= (its Complexity weight) * sigma (Number of object instances)

= $2 * 8 + 4 * 2 = 24$

Step-5:

%reuse of object points = 10% (given)

NOP = [object points * (100 - %reuse)]/100

= $[24 * (100 - 10)]/100 = 21.6$

Step-6:

Productivity rate (PROD) = 7

Step-7:

Effort

= NOP/PROD

= 21.6/7

= 3.086 person-month