

MG 6088 SOFTWARE PROJECT MANAGEMENT

UNIT –II : PROJECT EVALUATION**PART-A****1. Define project Evaluation.**

Project evaluation is a systematic method for collecting, analyzing, and using information to answer questions about projects, policies and programs, particularly about their effectiveness and efficiency.

2. What is meant by programme?

D.C. Ferns defined a programme as “ a group of project that are managed in a coordinated way to gain benefits that would not be possible were the projects to be managed independently”.

3. What is the concept of strategic programmes?

Several projects together can implement a single strategy. For example the merging of two organizations could involve the creation of unified payroll and accounting applications.

4. Define business cycle programmes.

The collection of projects that an organization undertakes within a particular planning cycle is sometimes refer to portfolio. Decisions have to be made about which projects to implement within that budget within the accounting period.

5. Define Infrastructure programmes.

Some organizations have very integrated information systems. The distinct activities can be integrated.

6. Define Research and development programmes

Truly innovative companies especially those that are trying to develop new product for the market, are well aware that projects will vary in terms of their risk of failure and the potential returns.

7. Write the difference between programme managers and project managers.

Programme manager	Project manager
Many simultaneous projects	One project at a time
Personal relationship with skilled resources	Impersonal relationship with resource type
Need to maximize utilization of resources	Need to minimize demand for resources
Projects tend to be similar	Projects tend to be dissimilar

8. Define programmemandate.

- This should include the new services or capabilities the programme should deliver.
 - How the organization will be improved by use of the new services or capability.
 - How the programme fits with corporate goals and any other initiatives
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9. How the programme will brief?

A programme brief is now produced which would be the equivalent of a feasibility study for the programme, used by achievers in all fields.

10. Define vision statement.

A preliminary vision statement which describes the new capacity that the organization seeks.

Significance-When the project begins, the project ... The goal of the *vision statement* is to describe what the project is expected.

11. What is meant by blueprint?

The achievement of the improved capability described in the vision statement can only come about when changes have been made to the structure and operations of the organizations. These are detailed in the blueprint.

12. What are things to be considered in the blueprint?

- Business models outlining the new process required.
- Organization structure-The information systems
- Data and information requirements
- Costs, performance and service level requirements.

13. What are the benefits of management?

- 1)Mandatory compliance
- 2) Quality of service
- 3)Productivity
- 4)More motivated force
- 5)Internal management benefits
- 6)Risk reduction

14. Define technical assessment.(may/Jun2013)

Technical assessment of a proposed system consists of evaluating the required functionality against the hardware and software available. Organizational policy aimed at the provision of a uniform and consistent hardware/software infrastructure is likely to place limitations on the nature of technical solutions that might consider.

15. What are the steps in cost-benefit analysis?

- Identifying and estimating all of the costs and benefits of carrying out the project and operating the delivered application.
- Expressing these costs and benefits in common units.

16. Define development costs.

Development costs include the salaries and other employment costs of the staff involved in the development project and all associated costs.

- $TDEV = 3 \cdot (PM)^{(0.33+0.2 \cdot (B-1.01))}$

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- PM is the effort computation and B is the exponent computed as discussed above (B is 1 for the early prototyping model). This computation predicts the nominal schedule for the project.

17. Define setup costs.

Setup costs include the costs of putting the system into place. These consists of mainly the costs of the new hardware

- $ESLOC = ASLOC * (1-AT/100) * AAM$.
- ASLOC and AT as before.
- AAM is the adaptation adjustment multiplier computed from the costs of changing the reused code, the costs of understanding how to integrate the code and the costs of reuse Decision making.

18. Define operational costs.

It consists of the costs of operating the system once it has been installed. $EAC = AC + ETC$. Current variances are seen as a typical and the ... Fixed Costs, Costs do not change.

19. What is meant by cost flow forecasting?(Apr 2014)

As important as estimating the overall costs and benefits of a project is the forecasting of the cash flow that will take place and their timing. A cash flow forecast will indicate when expenditure and income will take place.

20. What are the cost-benefit evaluation techniques?

- Net profit- *net profit* and discounted cash flow automatically
- Payback period- projects will provide a true return-on-investment while meeting an acceptable Return of investment- successfully complete projects and receive a *return on investment*.
- Net present value- Successful Projects Fortunately for *project managers*
- Internal rate of return- delegation of general management authority to the Project Leader

21. Give the formula of Net Present Value (Nov/Dec2011)

$$NPV = \frac{I}{1+r} + \frac{F_t}{(1+r)^t}$$

F_t = net cash flow for period t

r = required rate of return

22. Give the formula of payback period.

$$\text{Payback Period} = \frac{\text{Investment}}{\text{Annual Cash Savings}}$$

Significance

creating a project charter to formally initiate projects

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23. Define Decision tree.(may/Jun2013)

Decision tree provide tools for evaluating expected outcomes and choosing between alternate strategies.

Advantages

Assistance in upgrading, designing and developing a software.

24. What is IRR ? How is it calculated?(Nov/Dec2011)(May/Jun2012)

The internal rate of return on an investment or project is the "annualized effective compounded return rate" or rate of return that makes the net present value (NPV as $NET \cdot 1 / (1 + IRR)^{\text{year}}$) of all cash flows (both positive and negative) from a particular investment equal to zero. It can also be defined as the discount rate at which the present value of all future cash flow is equal to the initial investment or in other words the rate at which an investment breaks even.

Given a collection of pairs (time, cash flow) involved in a project, the internal rate of return follows from the net present value as a function of the rate of return. A rate of return for which this function is zero is an internal rate of return.

Given the (period, cash flow) pairs (t, C_n) where t is a positive integer, the total number of periods N , and the net present value NPV , the internal rate of return is given by r in:

$$NPV = \sum_{n=0}^N \frac{C_n}{(1+r)^n} = 0$$

The period is usually given in years, but the calculation may be made simpler if r is calculated using the period in which the majority of the problem is defined (e.g., using months if most of the cash flows occur at monthly intervals) and converted to a yearly period thereafter.

Any fixed time can be used in place of the present (e.g., the end of one interval of an annuity); the value obtained is zero if and only if the NPV is zero.

In the case that the cash flows are random variables, such as in the case of a life annuity, the expected values are put into the above formula. Often, the value of r cannot be found analytically. In this case, numerical methods or graphical methods must be used.

25. what is the significance of a "project risk matrix" ? give an example (may/Jun2012)

- Identify the risk and give priority.
- Could draw up draw a project risk matrix for each project to assess risks
- Project risk matrix is an example of a project risk matrix

Risk	Importance	Likelihood
Software never completed or delivered	H	—
Project cancelled after design stage	H	—
Software delivered late	M	M
Development budget exceeded \leq 20%	L	M
Development budget exceeded $>$ 20%	M	L
Maintenance costs higher than estimated	L	L
Response time targets not met	L	H

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26. Give the significance of cost benefit analysis.(Nov/Dec2012)

A CBA is considered to be a subjective (as opposed to objective) assessment tool because cost and benefit calculations can be influenced by the choice of supporting data and estimation methodologies. Sometimes its most valuable use when assessing the value of a business proposal is to serve as a vehicle for discussion.

**27. when Net present value is
calculated for a
project.(Nov/Dec2012)**

Thenet present value(NPV)
ornet present
worth(NPW)is defined as
the sum of the present
value s(PVs) of incoming and
outgoing cash flows over a
period of time. Incoming and
outgoing cash flows can also
be described as benefit and
cost cash flows, respectively.

PART-B

1. What are the steps involved in project evolution?

Project evaluation is a systematic method for collecting, analyzing, and using information to answer questions about projects, policies and programs, particularly about their effectiveness and efficiency **Develop program logic and review needs**

- Develop the evaluation brief
- Commission the evaluation project
- Manage development of the evaluation design
- Manage development of the evaluation workplan
- Manage implementation of the workplan, including production of report(s)
- Disseminate report and support use of the evaluation

2. Write in detail for project management with strategic assessment.(Nov/Dec2011)

Strategic planning is defined as an organization's process of defining its strategy, or direction and making decisions on allocating its resources to pursue this strategy.

- Briefly explain what it deals with?
- What do we do?
- For whom do we do it?
- How to we excel ?
- For successful strategic assessment, there should be a strategic plan which defines:
- Organization's objectives.
- Provides context for defining programme
- Provides context for defining programme goals.
- Provide context for accessing individual project.

3. How to manage the allocation of resources within programmes with examples.(Apr2014)

In strategic planning, resource allocation is a plan for using available resources, for example human resources, especially in the near term, to achieve goals for the future. It is the process of allocating scarce resources among the various projects or business units.

There are a number of approaches to solving resource allocation problems e.g. resources can be allocated using a manual approach, an algorithmic approach or a combination of both.

There may be contingency mechanisms such as a priority ranking of items excluded from the plan, showing which items to fund if more resources should become available and a priority ranking of some items included in the plan, showing which items should be sacrificed if total funding must be reduced.

Resource allocation may be Decided by using computer programs applied to a specific domain to automatically and dynamically distribute resources to applicants.

This is especially common in electronic devices dedicated to routing and communication. For example, channel allocation in wireless communication may be Decided by a base transceiver station using an appropriate algorithm.

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4. What re the steps involves in creating a programme?

In large organization, programme management is taken care by programme director and programme executive , rather than, project manager, who will be responsible for the strategic assessment of project.

Any potential software system will form part of the user organization's overall information system and must be evaluated within the context of existing information system and the organization's information strategy.

If a well – defined information system does not exist then the system development and the assessment of project proposals will be based on a more “piece meal approach”.

Piece meal approach is one in which each project being individually early in its life cycle.

- Typical issues and questions to be considered during strategic assessment
- Issue – 1: objectives:
 - How will the proposed system contribute to the organization's stated objectives? How, for example, might it contribute to an increase in market share?
- Issue – 2: is plan
 - How does the proposed system fit in to the IS plan? Which existing system (s) will it replace/interface with? How will it interact with systems proposed for the later development?
- Issue – 3: organization structure:
 - What effect will the new system have on the existing departmental and organization structure?
 - For example, a new sales order processing system overlap existing sales and stock control functions?
- Issue – 4: MIS:
 - What information will the system provide and at what levels in the organization? In what ways will it complement or enhance existing management information system?
- Issue – 5: personnel:
 - In what way will the system proposed system affect manning levels and the existing employee skill base? What are the implications for the organization's overall policy on staff development.
- Issue – 6: image:
 - What, if any, will be the effect on customer's attitudes towards the organization? Will the adoption of, say, automated system conflict with the objectives of providing a friendly service?

5. Explain cost-benefit evaluation techniques.(Nov/Dec2011)(May/Jun2013)(Apr2014)

- a) It is one of the important and common way of carrying “economic assessment” of a proposed information system.
- b) This is done by comparing the expected costs of development and operation of the system with its benefits.
- c) So it takes an account:
 - i. Expected cost of development of system
 - ii. Expected cost of operation of system
 - iii. Benefits obtained
- d) Assessment is based on:
 - iv. Whether the estimated costs are executed by the estimated income.
 - v. And by other benefits

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- e) For achieving benefit where there is scarce resources, projects will be prioritized and resource are allocated effectively.
- f) The standard way of evaluating economic benefits of any project is done by “cost benefit analysis”

Cost benefit analysis comprises of two steps:

- Step-1: identifying and estimating all of the costs and benefits of carrying out the project.
- Step-2: expressing these costs and benefits in common units.

Step-1:

It includes

- Development cost of system.
- Operating cost of system.
- Benefits obtained by system.

When new system is developed by the proposed system, then new system should reflect the above three as same as proposed system.

Example: sales order processing system which gives benefit due to use of new system.

Step-2:

Calculates net benefit.

Net benefit = total benefit - total cost.

(cost should be expressed in monetary terms).

- Three types of cost
- Development costs: includes salary and other employment cost of staff involved.
- Setup costs : includes the cost of implementation of system such as hardware, and also file conversion, recruitment and staff training.
- Operational cost : cost require to operate system, after it is installed.

6. Explain Decision trees with examples.

Decision tree provide tools for evaluating expected outcomes and choosing between alternate strategies.

Advantages

Assistance in upgrading, designing and developing a software.

- Identify over risky projects
 - Choose best from risk
 - Take suitable course of action
 - Decision tree of analysis risks helps us to
 - Extend the existing system
 - increase sales
 - improve the management information
 - Replace the existing system
 - Not replacing system leads in loss
 - Replace it immediately will be expensive.
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7. Explain risk evaluation.(Nov/Dec2011)(May/Jun2012)(Nov/Dec2012)**Riskevaluation**

Risk evaluation is meant to Decide whether to proceed with the project or not, and whether the project is meeting its objectives.

Risk Occurs:

- When the project exceed its original specification
- Deviations from achieving it objectives and so on.
- Risk Identification and ranking
- Risk and Net Present Value
For riskier projects could use higher discount rates
Ex: Can add 2% for a Safe project or 5 % for a fairly risky one.
- Cost benefit Analysis
- Risk profile analysis
- Decision trees

8. What is meant by cash flow forecasting? Explain with example.(May/Jun2012)(Nov/Dec2012)

As important as estimating the overall costs and benefits of a project is the forecasting of the cash flow that will take place and their timing. A cash flow forecast will indicate when expenditure and income will take place.

- It estimate overall cost and benefits of a product with respect to time.
- Negative cashflow during development stage.
- +ive cashflow during operating life.
- During development stage
- Staff wages
- Borrowing money from bank
- Paying interest to bank
- Payment of salaries
- Amount spent for installation, buying h/w and s/w
- Income is expected by 2 ways .
- Payment on completion
- Stage payment

9. Explain the “internal rate of return “ method for measuring the profitability of a project. Also mention its advantage over the NPV method.(May/Jun2012).

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