2014 7a 2017 8a
2019 8b which elements do you think is the most difficult to estimate? Why?

Q. What cost elements are considered in cost benefit analysis?

Ans: The cost elements are:

- Hardware cost
- Personnel cost
- Facility cost
- Operating cost
- Supply cost.

Horse Power For Operating System

Hardware cost: Hardware costs relate to the actual purchase or lease of the computer and peripherals. Determining the actual cost of hardware is generally more difficult when the system is shared by various users than for a dedicated stand-alone system.

Personnel cost: Personnel costs include EDP staff salaries and benefits as well as pay for those involved in developing the system. Costs incurred during the development of a system are one-time costs and are labeled developmental costs.

Facility cost: Facility costs are expenses incurred in the preparation of the physical site where the application or the computer will be in operation. This includes wiring, flooring, acoustics, lighting and air conditioning.

Operating cost: Operating costs include all costs associated with the day – to – day operation of the system. The amount depends on the number of the shifts, the nature of the application and the caliber of the operating staff.

Supply cost: Supply costs are variable costs that increase with increased use of paper, ribbons, disks and the like. They should be estimated and included in the overall cost of the system.

Q. Explain the procedure for cost benefit determination. 2014 7a 17 -8b

Ans: The determination of costs and benefits has the following steps:

I Can See It Too
- Identify the costs and benefits pertaining to a given project.
- Categorize the various costs and benefits for analysis.
- Select a method of evaluation.
- Interpret the results of the analysis.
- Take action.

2019 8 c)
a) Opportunity and sunk
b) Direct and indirect
c) Fixed and tangible
d) Tangible and intangible benefit

Identify the costs and benefits: Certain costs and benefits are more easily identified than others. Direct benefits often relate one – to – one to direct costs, especially saving from reducing costs in the activity in question. Other costs and benefits may not be well defined, since they represent estimated costs or benefits that have some uncertainty. A category of costs or benefits that is not easily discernible is opportunity costs and opportunity benefits.

Categorize the various costs and benefits for analysis: The next step in cost and benefit determination is to categorize costs and benefits. They may be –

Turn
- **Tangible or intangible costs and benefits:** An outlay of cash for a specific item or activity is referred to as a ***tangible cost***. Costs that are known to exist but whose financial value cannot be accurately measured are referred to as ***intangible costs***.

Tangible benefits, such as completing jobs in fewer hours or producing reports with no errors are quantifiable. ***Intangible benefits***, such as more satisfied customers or an improved corporate image are not easily quantified.

Down
- **Direct or indirect costs and benefits:** ***Direct costs*** are those with which a dollar figure can be directly associated in a project. They are applied directly to the operation. ***Indirect costs*** are the results of operations that are not directly associated with a given system or activity.

Direct benefits can be specifically attributable to a given project. ***Indirect benefits*** are realized as a by – product of another activity or system.

For

- **Fixed or variable costs and benefits:** Some costs and benefits are constant, regardless of how well a system is used. ***Fixed costs*** are sunk costs. They are constant and do not change. Once encountered they will not recur. ***Variable costs*** are incurred on a regular basis. They are usually proportional to work volume and continue as long as the system is in operation.

what?

Fixed benefits are constant and do not change. ***Variable benefits*** on the other hand are realized on a regular basis.

Select a method of evaluation: Some common evaluation methods are –

- **Net benefit analysis:** Net benefit analysis simply involves subtracting total costs from total benefits. It is easy to calculate, easy to interpret, and easy to present.

Net benefit = total benefit – total cost.

- **Present value analysis:** In developing long – term projects, it is often difficult to compare today's costs with the full value of tomorrow's benefits. Present value analysis controls for these problems by calculating the costs and benefits of the system in terms of today's value of the investment and then comparing across alternatives.
- **Net present value:** The net present value is equal to discounted benefits minus discounted costs. It is expressed as a percentage of the investment.
- **Payback analysis:** The payback method is a common measure of the relative time value of a project. It determines the time it takes for the accumulated benefits to equal the initial investment.
- **Break even analysis:** Break – even is the point where the cost of the candidate system and that of the current one are equal. Unlike the payback method that compares costs and benefits of the candidate system, break – even compares the costs of the current and candidate system. When both costs are equal it is break – even.
- **Cash flow analysis:** Some projects, such as those carried out by computer and word processing services, produce revenues from an investment in computer systems. Cash flow analysis keeps track of accumulated costs and revenues on a regular basis.

Interpret results of the analysis and take action: When the evaluation of the project is complete, the results have to be interpreted. This entails comparing actual results against a standard or the result of an alternative investment. The interpretation phase as well as the subsequent decision phase is subjective, requiring judgment and intuition.

Q. Define the classification of cost and benefits. Or, define:

- ***Tangible or intangible cost and benefits***
- ***Direct or indirect cost and benefits*** same as above categorize step points
- ***Fixed or variable cost and benefits.***

Ans: The cost and benefit analysis can be classified into following ways:

2014 7b

- **Tangible or intangible cost and benefits:** An outlay of cash for a specific item or activity is referred to as a ***tangible cost***. The purchase of hardware or software, personnel raining and employee salaries are example of tangible costs. Costs that are known to exist but whose financial value cannot be accurately measured are referred to as ***intangible costs***. Employee morale problem caused by a new system or lowered company image is an intangible cost. In some cases, intangible costs may be easy to identify but difficult to measure.

Benefits are also classified as tangible or intangible. ***Tangible benefits***, such as completing jobs in fewer hours or producing reports with no errors are quantifiable. ***Intangible benefits***, such as more satisfied customers or an improved corporate image are not easily quantified.

2016(syllabus-2012-13 6a) Explain the concept of direct and indirect costs and benefits

- **Direct or indirect cost and benefits**: ***Direct costs*** are those with which a dollar figure can be directly associated in a project. They are applied directly to the operation. For example, the purchase of a box of diskettes for $35 is a direct cost because we can associate the diskettes with the dollars expended. ***Indirect costs*** are the results of operations that are not directly associated with a given system or activity.

Direct benefits can be specifically attributable to a given project. For example, a new system that can handle 25 percent more transactions per day is a direct benefit. ***Indirect benefits*** are realized as a by – product of another activity or system. For example, safe deposit billing system that provides profiles showing vacant boxes by size, location, and price will help management decide on how much advertizing to do for box rental.

- **Fixed or variable cost and benefits:** Some costs and benefits are constant, regardless of how well a system is used. ***Fixed costs*** are sunk costs. They are constant and do not change. Once encountered they will not recur. ***Variable costs*** are incurred on a regular basis. They are usually proportional to work volume and continue as long as the system is in operation.

Fixed benefits are constant and do not change. ***Variable benefits*** on the other hand are realized on a regular basis.

Q. Mention some evaluation method of cost benefit analysis and also define them.

Ans: Some common evaluation methods are –

Selection of method for evaluation

2020 7b

2016 session (2012-13) 6b Discuss briefly Net benefit analysis and present value analysis

- Net benefit analysis
- Present value analysis
- Net present value
- Payback analysis
- Break even analysis
- Cash flow analysi

Net benefit analysis: Net benefit analysis simply involves subtracting total costs from total benefits.

Net benefit = Total benefit – total cost.

It is easy to calculate, easy to interpret and easy to present. The main drawback is that it does not account for the time value of money and does not discount future cash flow. The following figure illustrates the use of net benefit analysis.

Cost/Benefit	Year 0	Year 1	Year 2	Total
Costs	$ - 1,000	$ - 2,000	$ - 2,000	$ - 5,000
Benefits	0	650	4,900	5,550
Net benefits	$ - 1,000	$ - 1,350	$ 2,900	$ 550

Fig: *Net benefit analysis*

Present value analysis: In developing long-term projects, it is often difficult to compare today's costs with the full value of tomorrow's benefits. As we have seen, the time value of money allows for interest rates, inflation and other factors that alter the value of the investment. Furthermore certain investment offer benefits periods that vary with different projects. Present value analysis controls for these problems

2016 (session-12-13) 6-c)What is the present value of $1500 invested at 10% interest at the end of 4th year 1.75
2020 7b- What is the present value of $2250 invested at 10% interest at the end of 5th year

by calculating the costs and benefits of the system in terms of today's value of the investment and then comparing across alternatives.

The amount that we are willing to invest today is determined by the value of the benefits at the end of a given period. The amount is called the present value of the benefit.

$(F = P(1 + i)^n)$

Net present value: The net present value is equal to discounted benefits minus discounted costs. Let, $ 3,000 microcomputer investment yields a cumulative benefit of $ 4,758.51, or a net present gain of $ 1,758.51. The net present value is expressed as a percentage of the investment – in our example:

$$\frac{1,758.51}{3,000} = 0.55\ percent$$

Payback analysis: The payback method is a common measure of the relative time value of a project. It determines the time it takes for the accumulated benefits to equal the initial investment. The shorter the payback period, the sooner a profit is realized and the more attractive is the investment. The payback method is easy to calculate and allows two or more activities to be ranked.

Break even analysis: Break even is the point where the cost of the candidate system and that of the

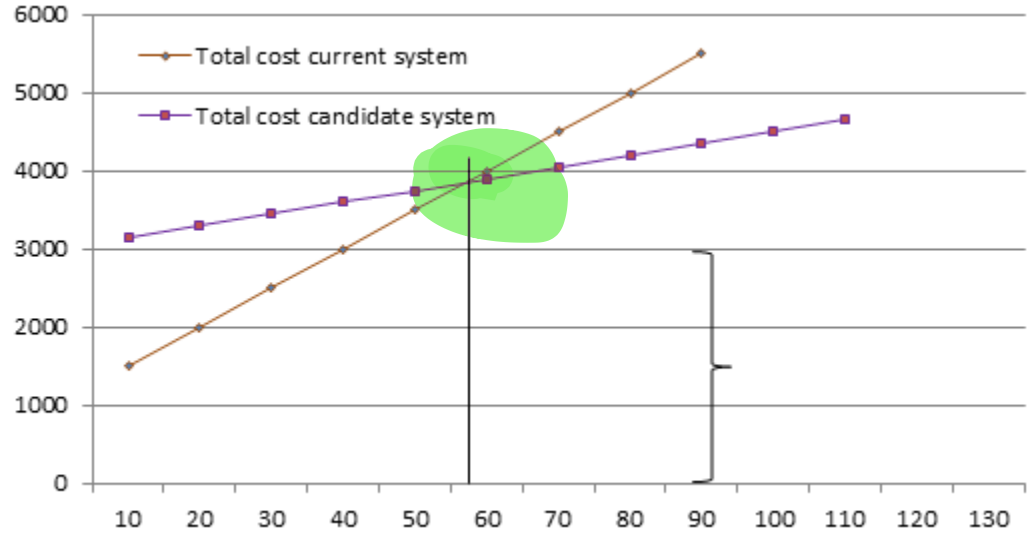

Fig: *Break – even chart.*

current one are equal. Unlike the payback method that compares costs and benefits of the candidate system, break – even compares the costs of the current and candidate systems. When a candidate system is developed, initial costs usually exceed those of the current system. This is an investment period. When both costs are equal, it is break – even.

Cash flow analysis: Some projects, such as those carried out by computer and word processing services, produce revenues from an investment in computer systems. Cash – flow analysis keeps track of accumulated costs and revenues on a regular basis.