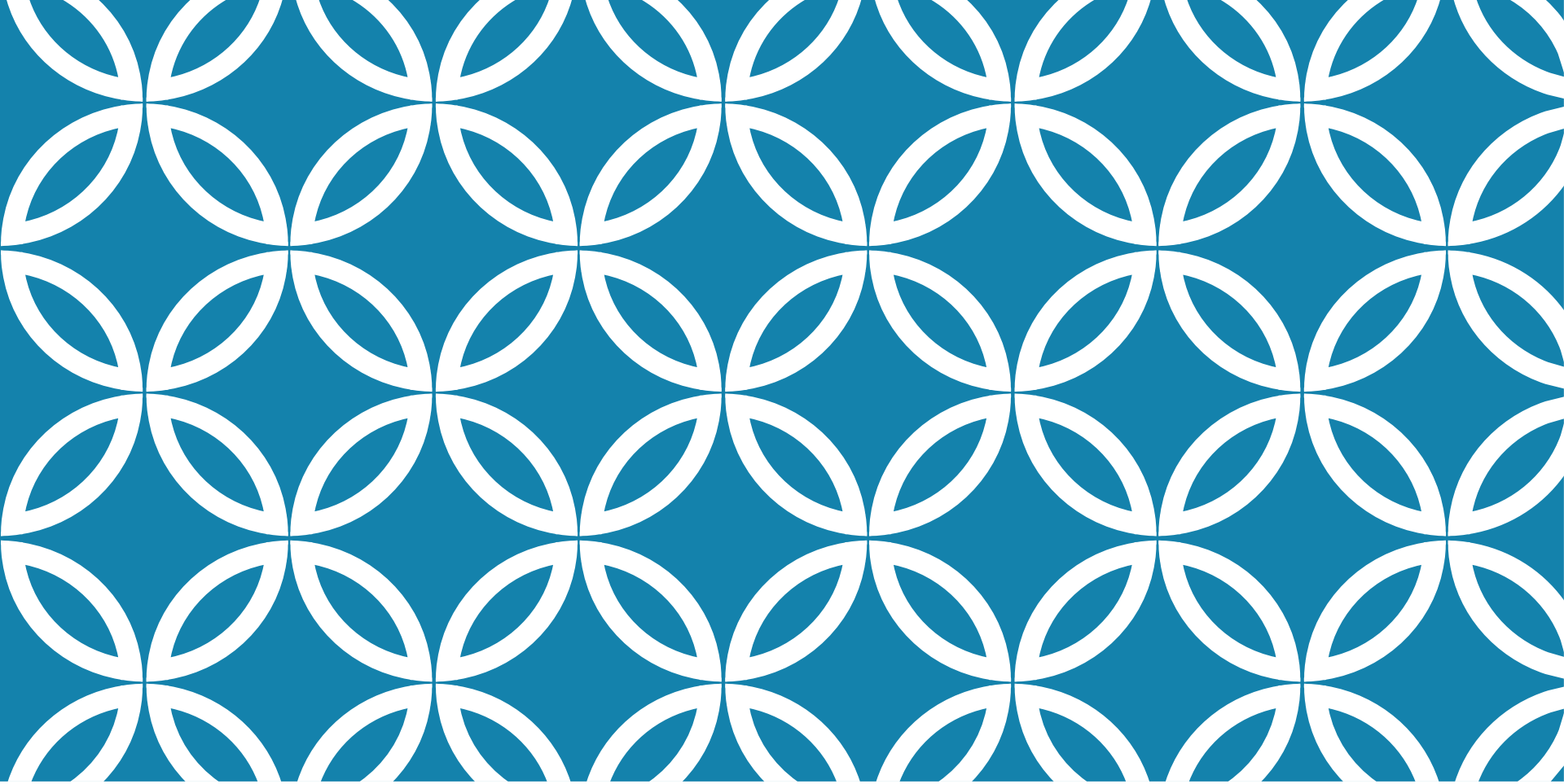

ANNUAL WORTH COMPARISON

WHY ANNUAL WORTH COMPARISON?

Many economic decision are assisted by determining the costs, expenditures, and net worth on the basis of annual or periodic timings.

Manufacturing manager is often required to justify the operations on , monthly or annual basis.

Annual goals are frequently set.

PROCEDURE

In this method all the receipts and disbursements occurring over a period are converted to an equivalent uniform yearly amount.

ADVANTAGES

It is possible to view an years gains and losses as a milestone for progress.

Cost accounting procedures, depreciation expenses, tax calculations and other summary reports are annual.

The major tool used in annual worth calculations is the capital recovery factor that converts a lumpsum into annuity.

EXAMPLE 1

A food beverage company is planning expansion of its cold storage facility. Three alternative site design proposals are being considered that uses an interest rate of 10%. Plan A and B require an expenditure of Rs.35,00,000 for land while plan C requires Rs.45,00,000 for land,. The estimated income due to facility available is annualized at Rs.24,80,000 per year. the company requires that a life of 10 years be used for analysis. Data pertaining to the project are given below,

In Rs.	Proposal A	Proposal B	Proposal C
Building and installation	60,00,000	70,00,000	40,00,000
Compressor	10,00,000	13,50,000	8,50,000
Expected energy cost for 1 year	6,50,000	4,80,000	6,50,000
Energy cost increase for each additional year	30,000	20,000	35,000
Annual maintenance cost	2,00,000	1,50,000	5,00,000
Estimated salvage value	3,50,000	4,30,000	1,80,000

Consider a machine that costs Rs.20,000 and has a five-year useful life . At the end of 5 years, it can be sold for Rs.4000 after tax adjustment. The annual operating and maintenance costs are about Rs.500. if the firm could earn an after-tax revenue of Rs.5,000 per year with this machine, should it be purchased at an interest rate of 10%?

SITUATIONS FOR EQUIVALENT ANNUAL WORTH COMPARISON

Negative cash flows that is costs or disbursements are more than receipts. But alternative should be selected.

Ex- safety measures

Two types of power converter Alpha and Beta are under consideration for a particular application. An economic comparison is to be made at an interest rate of 10%. Following cost estimation has been obtained. Determine the annual equivalent costs of the two systems.

Cost Particular (in Rs.)	Alpha	Beta
Purchase price	10,000	25,000
Estimated service life	5 years	9 years
Salvage value	3,000	5,000
Annual operating costs	2,500	1,200

A consulting firm proposes to provide “self inspection” training for clerks who work with insurance claims. The program lasts one year, costs Rs. 20,000 per month, and professes to improve quality while reducing clerical time. A potential user of the program estimates that savings in the first month should amount to Rs. 8000 and should increase by Rs. 4000 per month for the rest of the year. however . Operational confusion and work interference are expected to boost clerical costs by Rs.12,000 the first month but this amount should subsequently decline in equal increments at the rate of Rs.1000 per month. If the required rate of return on money is 12% compounded monthly and there is a stipulation that the program must pay for itself within 1 year, Calculate the Annual worth(AW) and comment on the feasibility.

NET CASH FLOW COMPARISON

A company engaging in selling of laboratory equipment estimates that profit from sales is Rs.2,00,000 every year if a mobile demonstration unit is built. A large unit with sleeping accommodation for the driver will cost Rs. 9,70,000 while a smaller unit without sleeping cabin will be Rs. 6,30,000. Salvage values for the large and small units after 5 years and 8 years will be, Rs.97,000 and Rs.35000 respectively. Lodging costs saved by the larger unit should amount Rs. 1,10,000 annually, but its transportation costs will exceed those of the smaller unit by 31,000 every year. With the money at 9% should a mobile demonstration unit be built? And if so which size is preferable?

A conventional agricultural equipment has a service life of 6 years. A newly designed equipment is 50% costlier than the conventional one but has more advantages. The operating costs of both these equipment are almost same and salvage value is negligible. What will be the service life of the new equipment that makes its costs comparable to that of the conventional one at i=10%?

A standby electric power generator was purchased 6years ago for Rs.80,000. at that time it was expected that the equipment would be used for 15 years and would have a salvage value of 10% of the first cost. The generator is no longer needed and is to be sold for Rs.25,000. Using an interest rate of 15%, determine the difference between the anticipated and actual annual capital costs.

A sheltered workshop requires a lift truck to handle pallets for a new contract. A lift truck can be purchased for Rs.2,70,000. Annual insurance costs are 3% of the purchase price, payable on the first of each year, an equivalent truck can be rented for Rs,15,000 per month payable at the end of each month. Operating costs are same for both the alternatives. For what minimum number of months must a purchased truck be used on the contract to make purchasing more attractive than leasing? Interest rate is 12% compounded monthly. Assume that the purchased truck has no salvage value.

Two machines models A and B perform the same function. Type A machine has a low initial cost of Rs. 95000, relatively high operating cost of Rs.19,000 per year more than those of type B machine, and a short life of 4 years. Type B machine costs Rs. 2,51,000 and can be used for 8 years. The scarp value from either machine at the end of the life will barely cover its removal cost. Which is preferred when the rate of return is 8%?