

+ : Q No # 1 :-

+ : GIVEN DATA :-

Number of communication channels = 6

Additional stake holders = 2

+ : Required data :-

Identify the number of communication channels after increasing the scope of work?

+ : Solution :-

As we know that

$$\text{number of communication channel} = \frac{n(n-1)}{2}$$

The number of people involved in six communication channels \Rightarrow

$$6 = \frac{n(n-1)}{2}$$

$$12 = n(n-1) = n^2 - n$$

$$n^2 - n - 12 = 0$$

$$n^2 - 4n - 3n - 12 = 0$$

$$n(n-4) + 3(n-4) = 0$$

$$(n-4)(n+3) = 0$$

$$n-4=0, n+3=0$$

$$n=4, n=-3$$

So The number of people involved = 4

As, there are additional stake holders,

so the total number of people are;

$$n = 4 + 2$$

$$n = 6$$

Now, the required communication

$$\text{channel} = \frac{6^3 (6-1)}{2}$$

$$= 3(5)$$

New communication channel = 15 Answer

Q No # 2 :-

∴ Given data :-

total no. of Package = 10

for each package, planned values, Actual cost and range of completion is known.

∴ To find :-

For each package.

- 1) Extend value (EV) = ?
- 2) cost variance variable (CV) = ?
- 3) schedule variable (SV) = ?
- 4) cost performance index (CPI) = ?
- 5) schedule " " (SPI) = ?
- 6) comment on each package = ?

∴ Solution :-

work page 1 :-

① Extend value :-

By formula

$EV = \text{Planned value} \times \text{Rate of performance}$

$$EV = P \times RP$$

$$EV = \$100000 \times 100\%$$

$$= \$100000 \times 1$$

$$EV = \$100000$$

② cost variance :-

$$CV = EV - AC$$

$$= \$100000 - 120,000$$

$$\boxed{EV = -20000}$$

③ schedule variance (SV) :-

$$SV = EV - PV$$

$$100000 - 100000$$

$$\boxed{SV = 0}$$

④ Cost performance Index (CPI) :-

$$CPI = \frac{EV}{AC} = \frac{100000}{120000} =$$

$$\boxed{CPI = 0.83}$$

⑤ schedule performance Index (SPI) :-

$$SPI = \frac{EV}{PV} = \frac{100000}{100000} =$$

$$\boxed{SPI = 1}$$

Comment on work page 1 :-

→ As we see the $SV = 0$ and $SPI = 1$ that means that project is exactly on the plan path 100%.

→ As we see that CV is (-ive) $\frac{1}{2}$, cost performance index is less than 1 which means that the project is over budgeted.

Work page # 2 :-

① Extend value (EV) :-

$$EV = P_v \times R_p$$

$$EV = 100000 \times 100\%$$

$$EV = 100000 \times 1$$

$$\boxed{EV = 100000 \text{ f}}$$

② cost variance (CV) :-

$$CV = EV - AC$$

$$= 100000 - 110000$$

$$\boxed{CV = -10000 \text{ f}}$$

③ schedule variance (SV) :-

$$SV = EV - PV$$

$$= 100,000 - 100,000$$

$$\boxed{SV = 0}$$

④ cost performance Index (CPI) :-

$$CPI = \frac{EV}{AC} = \frac{100000}{110000}$$

$$\boxed{CPI = 0.90}$$

⑤ schedule performance Index (SPI) :-

$$SPI = \frac{EV}{PV} = \frac{100000}{100000}$$

$$\boxed{SPI = 1}$$

Comments:-

Project is exactly on the base line as $SU = 0$ and $SP1 = 1$ but in terms of cost the project is over budgeted as CV is (-ive) and CPI is less than 1.

Ans: Work Sheet 3:-

① Earned value (EV):-

$$EV = P_u \times R_p$$

$$= 100000 \times 90\%$$

$$\boxed{EV = 90,000 \text{ \$}}$$

② Cost variance (CV):-

$$CV = EV - PV$$

$$90,000 - 80,000$$

$$\boxed{CV = 10,000 \text{ \$}}$$

③ Schedule variance (SV):-

$$SV = EV - PV$$

$$90,000 - 100,000$$

$$\boxed{SV = -10,000 \text{ \$}}$$

④ CPI :-

$$CPI = \frac{EV}{AC} = \frac{90000}{80000} \quad \boxed{CPI = 1.125}$$

⑤ SPI :-

$$SPI = \frac{EV}{PV} = \frac{90000}{100000} = \boxed{SPI = 0.9}$$

Comment:-

The project is over budgeted and over burdened. Because CV and CPI is (+ive) and above then 1 but in terms of scheduling, the project is potentially behind the bus line as SV = (-ive) and SPI is less than 1.

Q No # 3 :-

∴ Sol :- \$2,000 \$3,000 \$3,000 \$4,000



$$NPV = -C_0 + \frac{C_1}{1+r} + \frac{C_2}{(1+r)^2} + \dots + \frac{C_r}{(1+r)^r}$$

$$P_{V_0} = -C_0$$

$$P_{V_0} = -9000$$

$$\Rightarrow P_{V_1} = \frac{C_1}{1+r} = \left(\frac{2000}{1 + \frac{10}{100}} \right) = P_{V_1} = \underline{1818.18}$$

$$\Rightarrow P_{V_2} = \frac{C_2}{(1+r)^2} = \frac{3000}{\left(1 + \frac{10}{100}\right)^2} = P_{V_2} = \underline{2479.34}$$

$$\Rightarrow P_{V_3} = \frac{C_3}{(1+r)^3} = \frac{3000}{\left(1 + \frac{10}{100}\right)^3} = P_{V_3} = \underline{2253.94}$$

$$\Rightarrow P_{V_4} = \frac{C_4}{(1+r)^4} = \frac{4000}{\left(1 + \frac{10}{100}\right)^4} = P_{V_4} = \underline{2732.05}$$

$$NPV = -C_0 + \frac{C_1}{1+r} + \frac{C_2}{(1+r)^2} + \frac{C_3}{(1+r)^3} + \frac{C_4}{(1+r)^4}$$

$$= -9000 + 1818.18 + 2479.34 + 2253.94 + 2732.05$$

$$NPV = \$ 283.51$$

Comments :-

A Positive NPV means the combined PV of all cash inflows exceeds the PV of each outflow.

- *) The NPV of \$283.51 suggests that the combined PV of all cash inflows exceeds the PV of each outflow by \$283.51.
- *) This project is acceptable as it adds profit of \$283.51 to the company.

Q NO# 4 :-

		Level of Interest	
		Low	HIGH
POWER	Low	A Minimal effort	B keep informed
	HIGH	C keep satisfied	D key players

1. Power / Interest matrix :-

1) Stake holder in group A :-
on monitoring, Need only minimum effort

2) Stake holder in group B :-
as they may be able to influence more powerful stakeholders. Should be kept informed

3) Stake holder in group C :-
of interest is low. Generally expected to be passive, but may move into group D on an issue of particular interest. Are powerful but level

4) Stake holder in group D :-
interested. Their co-operation is of key importance for new strategies. Are both powerful and

Q NO # 5 :-

Check list for Risk Management:-

STAGE 1:- (Initiation)

- 1) Assemble risk management resources.
- 2) Appoint the team leader and ensure a breadth of skills/experience within the team.
- 3) Assign risk management responsibilities appropriate to task.

STAGE 2:- (Proposal Familiarization)

- 1) Specify objectives and criteria.
- 2) Familiarise the team with proposal, assemble the documentation and define the key objectives.
- 3) Assess the proposal in relation to the Agency's objectives and strategies.
- 4) Determine assessment criteria for proposal.
- 5) Define key elements (target 20-50 elements) items or activities) to structure risk analysis.

*:: Stage 3 :- (Risk Analysis)

(12)

*1) Identify Risks :-

- 1) Prepare a comprehensive schedule of risks for each element.
- 2) Describe each risk and list the main assumptions

*2) Assess risk likelihoods and consequences :-

- 1) Assemble data on risk and their consequences.
- 2) Assess risk likelihoods.
- 3) Assess risks impact.

*3) Identify significant risks :-

- 1) Rank risks to reflect impacts and likelihoods.
- 2) where applicable, estimate risk factors.
- 3) Discard / accept minor risks.
- 4) Identify moderate risks for management measures.
- 5) Identify major risks for detailed risk action planning &

4) STAGE # 4 :- (Risk response planning)

- 1) Identify feasible responses.
- 2) For each moderate and major risks, identify the feasible responses.
- 3) Responses may include:
 - (a) Risk Prevention
 - (b) impact mitigation
 - (c) risk transfer and insurance.
 - (d) risk acceptance.
- (4) Describe each feasible response and list main assumptions.
- (5) Select the best response.
- (6) Evaluate the benefits and costs for each response.
- (7) Select the preferred response.

5) Stage # 5 :- (Reporting) :-

- 1) For designated proposals, produce the risk management plan.
- 2) For other projects, collate and summarize risk action schedules and measures.

2) Step # 6 :- (Risk management implementation) :-

1) Implement measures and action strategies.

2) Monitor the implementations.

(a) Assign responsibilities

(b) Timing.

(3) undertake periodic review and performance evaluation.