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SECTION :

"B"

SUBJECT :

CONSTRUCTION
MANAGEMENT.

Q no 1:

Given data:

Number of communication

channels = 6

Additional stakeholders = 2

Required:

Identification of number
communication.

After increasing the scope of work

Channels = ?

Sol: -

Communication channel.

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

So By putting values.

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

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

$$12 = n^2 - n$$

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

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

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

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

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

People involved are 4.

And there are additional Stakeholders, which is 2

$$\text{So, } n = 4 + 2$$

$$n = 6$$

Channel Communication

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

$$= 15$$

So communication channel is

$$\underline{\underline{15.}} \quad \text{Ans.}$$

Q No : 2
 Answer

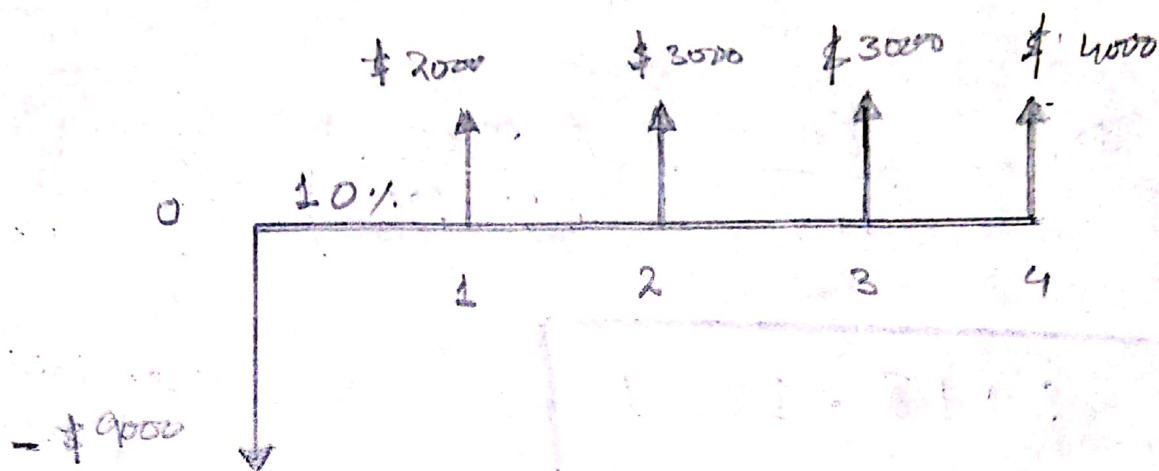
Work Package	BCWS Planned Value (PV) \$	ACWPS Actual Cost (AC) \$	Progress %	BCWP Earned Value (EV) \$	CV EV - AC \$	CPI EV/AC	SPI EV/PV	SV EV - PV \$
1	100,000.00	120,000.00	100%	100,000.00	20,000.00	0.83	1.00	-
2	150,000.00	110,000.00	100%	150,000.00	10,000.00	0.91	1.00	-
3	100,000.00	80,000.00	96%	90,000.00	10,000.00	1.21	0.90	10,000.00
4	100,000.00	125,000.00	20%	20,000.00	45,000.00	0.64	0.20	20,000.00
5	150,000.00	75,000.00	50%	50,000.00	25,000.00	0.67	0.50	50,000.00
6	100,000.00	"	0%	-	-	0	0	100,000.00
7	100,000.00	-	"	-	-	0	0	100,000.00
8	150,000.00	-	"	-	-	0	0	150,000.00
9	100,000.00	-	"	-	-	0	0	100,000.00
10	100,000.00	-	"	-	-	0	0	100,000.00

Comment :

Project is over budget and
lag behind.

Q NO: 3

Answer:



Required:

→ Calculate Net Present Value (NPV)

→ Comment on Result.

Solution:

$$NPV = -C_0 + \frac{C_1}{1+r} + \frac{C_2}{(1+r)^2} + \frac{C_3}{(1+r)^3} + \dots + \frac{C_T}{(1+r)^T} \rightarrow \textcircled{A}$$

$$P_{v0} = -C_0$$

$$P_{v0} = -9000.$$

For 1st year:

$$P_{v1} = \frac{C_1}{1+r} = \left(\frac{2000}{1 + 10/100} \right)$$

$$P_{v1} = 1818.18 \$$$

- C_0 = initial investment

C = Cash flow

r = Discount rate.

For 2nd year.

T = Time.

$$C_1 = 2000$$

$$C_2 = 3000$$

$$C_3 = 3000$$

$$C_4 = 4000.$$

$$P_{v2} = \frac{C_2}{(1+r)^2} = \frac{3000}{(1 + 10/100)^2}$$

$$P_{v2} = 2479.34 \$$$

For 3rd year:

$$P_{v3} = \frac{C_3}{(1+r)^3} = \frac{3000}{(1 + 10/100)^3}$$

$$P_{v3} = 2253.94 \$$$

For 4th Year:

$$PV_4 = \frac{C_4}{(1+r)^4} = \frac{4000}{(1+10/100)^4}$$

$$PV_4 = 2732.05 \text{ \$}$$

Case \rightarrow (A)

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

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

$$NPV = 283.51 \text{ \$}$$

Comment:

\Rightarrow Positive NPV means the combined PV of all cash inflows exceed the PV of such outflow.

⇒ The Profit is 283.51 \$ to the Company, so the project is acceptable.

⇒ The NPV of 283.51 suggest that the combined PV of all cash inflows exceed the PV of cash outflows by 283.51

Qno # 4

Answer:

Power / Interest Matrix:

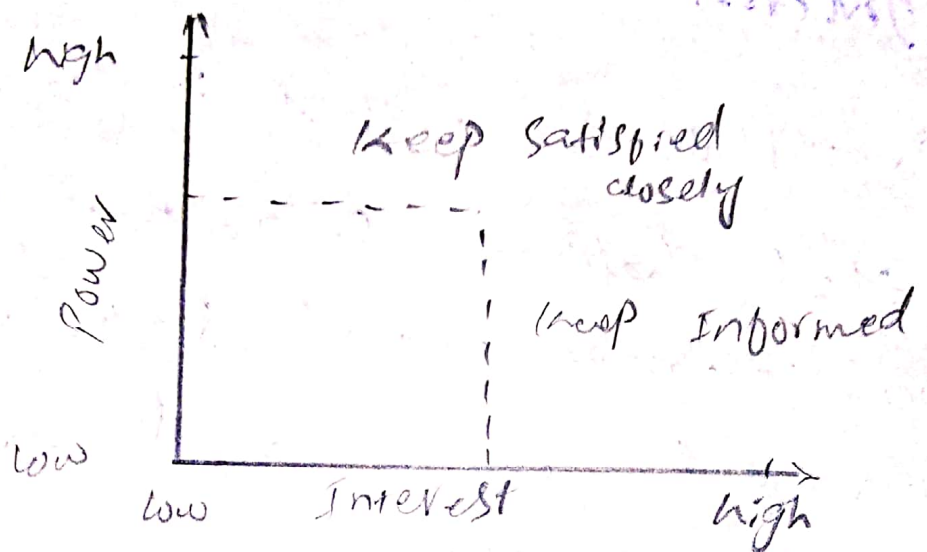
The Power/Interest matrix is a simple tool that helps to simple tool that helps to categorize project stakeholders with increasing power and interest in project.

→ The matrix helps to focus on the key stakeholders who can make or break the project. In turn, this Power/Interest matrix helps us in stakeholder prioritization.

Layout of the matrix.

The Power interest matrix contains four quadrants. Each quadrant gives an indication ~~gives~~ of level of stakeholder management that we will have to influence the type

of communication style. The four quadrants of Power/Interest matrix are shown.



High Power - High Interest.

These stakeholders are decision makers and have biggest impact on project success and hence we must closely manage their expectations.

High Power - Low Interest

These stakeholders needed to be kept in loop, these stakeholders need to be kept satisfied even though they aren't interested because they yield power.

These type of stakeholders should be dealt cautiously, because they may use their power in a not desired way.

in the project if they become unsatisfied.

Low Power - High Interest.

These people should be kept adequately informed and must talk to them to ensure that no major issues are arising. These people can often be very helpful with detail of project.

Low Power - Low Interest:

Monitor these stakeholders but we should not bore them with excessive communications.

Qno # 5

Answer.

For a project of residential house different stages to be considered in the risk management are as under:

Stage 1:

"INITIATION"

- Assemble risk management resources.
- Appoint the team leader and ensure a breadth of skills within team.
- Assign Risk management responsibilities appropriate to task.

"Stage 2"

"proposal familiarization"

- Identify objectives and criteria.
- Familiarise the team with the proposal.

Assemble documentation and define the key objective.

- Assess the proposal, in relation to the agency's objective and strategies.
- Determine assessment criteria for proposal.
- Define key element to structure risk analysis.

Stage: 03

"Risk Analysis"

IDENTIFY Risks:

- Prepare a comprehensive schedule of risks for each element.
- Describe each risk and list the main assumptions.
- ASSES Risk likelihoods and consequences:
 - ⇒ Assemble data on risk and

their consequences.

- Assess risk likelihood.
- Assess risk impact.

IDENTIFY SIGNIFICANT RISKS.

- Rank to reflect impact and likelihood.
- Where applicable, estimate risk factor.
- Discard/accept minor risks.

Identify Major Risks for detailed risk action planning.

Stage 04:

Identify feasible responses.

→ For each moderate and major risk, identify the feasible responses.

⇒ Responses may include.

- a) Risk prevention.
- b) Impact mitigation.
- c) Risk transfer and insurances.
- d) Risk acceptance.

- ⇒ Describe each feasible response and list main assumptions.
 - ⇒ Select the best response
 - ⇒ Evaluate the benefit and cost for each response.
 - ⇒ Select preferred response.
 - ⇒ Develop management measure and action schedules
 - ⇒ Specify Risk management measure and action schedules.
 - ⇒ Specify risk management measure for moderate risks.
 - ⇒ develop risk action schedules for major risks.
- a) Actions required
 - b) Resources.
 - c) Responsibility.
 - d) Timing.

Stage 5

Reporting:

- For designated proposals, produced the risk management plan.
- ⇒ For other projects locate and summarize risk action schedules and measure.

~~Stage 6~~

Stage # 06

"Risk management Implementation"

- ⇒ Implement measures and action. (projects)
- ⇒ Monitor the Implementation.
 - (a) Assign. responsibilities.
 - (b) Timing.
- ⇒ Undertaking periodic review and performance evaluation.