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Section : B

Paper : Construction
Management

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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
Number of communication channels = $\frac{n(n-1)}{2}$

The number of people involved in six communication channels \Rightarrow

$$6 = \frac{n(n-1)}{2} \Rightarrow n^2 - n - 12 = 0$$

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

$$\cancel{n^2} \Rightarrow n^2 - 4n + 3n - 12 = 0$$

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

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

$$n-4=0$$

$$n=4$$

$$n+3=0$$

$$n=3$$

So the number of people involved = 4.

As there are additional stakeholders so total number of people are:

$$n = 4 + 2$$

$$n = 6$$

$$\text{Now the required communication channel} = \frac{6(6-1)}{2}$$

$$= \frac{3 \times 6(6-1)}{2} = 3(5) \Rightarrow 15$$

New communication channel = 15.

Answer

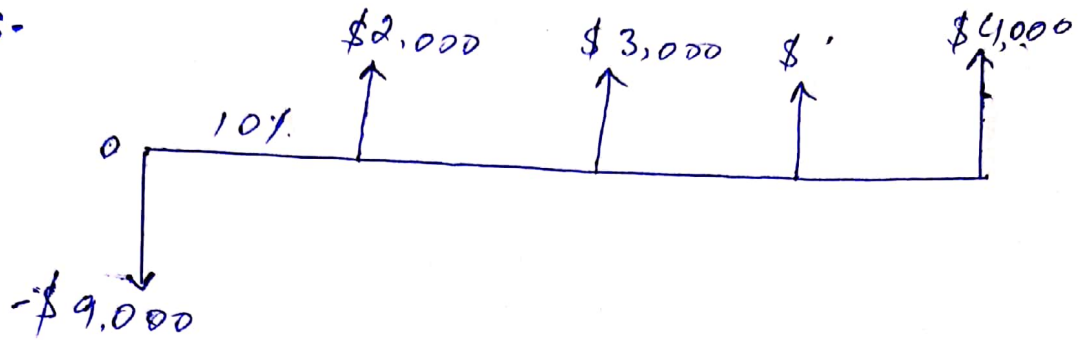
Q no.2

page.4

Work package	BCWS	ACWP	Progress	BCWP	(CV)	CPI	SPI	SV
	Planned value (PV)	Actual cost (AC)	%	Earned value (EV)	EV-AC	EV/AC	EV/PV	EV-PV
1	\$ 100,000.00	\$ 120,000.00	100%	\$100,000.00	\$ (20,000.00)	0.83	1.00	\$ -
2	\$ 100,000.00	\$ 110,000.00	100%	\$100,000.00	\$ (10,000.00)	0.91	1.00	\$ -
3	\$ 100,000.00	\$ 80,000.00	90%	\$ 90,000.00	\$ 10,000.00	1.13	0.90	\$ (10,000.00)
4	\$ 100,000.00	\$ 125,000.00	80%	\$ 80,000.00	\$ (45,000.00)	0.64	0.80	\$ (20,000.00)
5	\$ 100,000.00	\$ 75,000.00	50%	\$ 50,000.00	\$ (25,000.00)	0.67	0.50	\$ (50,000.00)
6	\$ 100,000.00	\$ -	0%	\$ -	\$ -	0.00	0.00	\$(100,000.00)
7	\$ 100,000.00	\$ -	0%	\$ -	\$ -	0.00	0.00	\$(100,000.00)
8	\$ 100,000.00	\$ -	0%	\$ -	\$ -	0.00	0.00	\$(100,000.00)
9	\$ 100,000.00	\$ -	0%	\$ -	\$ -	0.00	0.00	\$(100,000.00)
10	\$ 100,000.00	\$ -	0%	\$ -	\$ -	0.00	0.00	\$(100,000.00)
BAC								

Q NO 3.

Sol:-



Discount 10 %

$$PV = FV / (1+r)^n$$

For 1st year :-

$$PV = \frac{2000}{(1+0.10)^1} \Rightarrow \boxed{1818.18 \$}$$

for second year :-

$$PV = \frac{3000}{(1+0.10)^2} \Rightarrow \boxed{2479.34 \$}$$

For 3rd year :-

$$PV = \frac{3000}{(1+0.10)^3} \Rightarrow \boxed{2253.94 \$}$$

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For 4th year :-

$$PV = \frac{4000}{(1+0.10)^4} = 2732.05 \$$$

Thus

$$PV_0 = -9000$$

$$PV_1 = 1818.18 \$$$

$$PV_2 = 2479.34 \$$$

$$PV_3 = 2253.94 \$$$

$$PV_4 = 2732.05 \$$$

$$NPV = 283.515 \text{ Ans.}$$

Comments: → A positive NPV means the combined PV of all cash inflows exceeds the PV of each out flows.

→ The NPV of 283.51 suggest that the combined PV of all cash inflows exceeds the

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the PV of cash outflows
by 283.51.

→ This project is acceptable
as its add profit of 283.51\$
to the company.

Q No 4.

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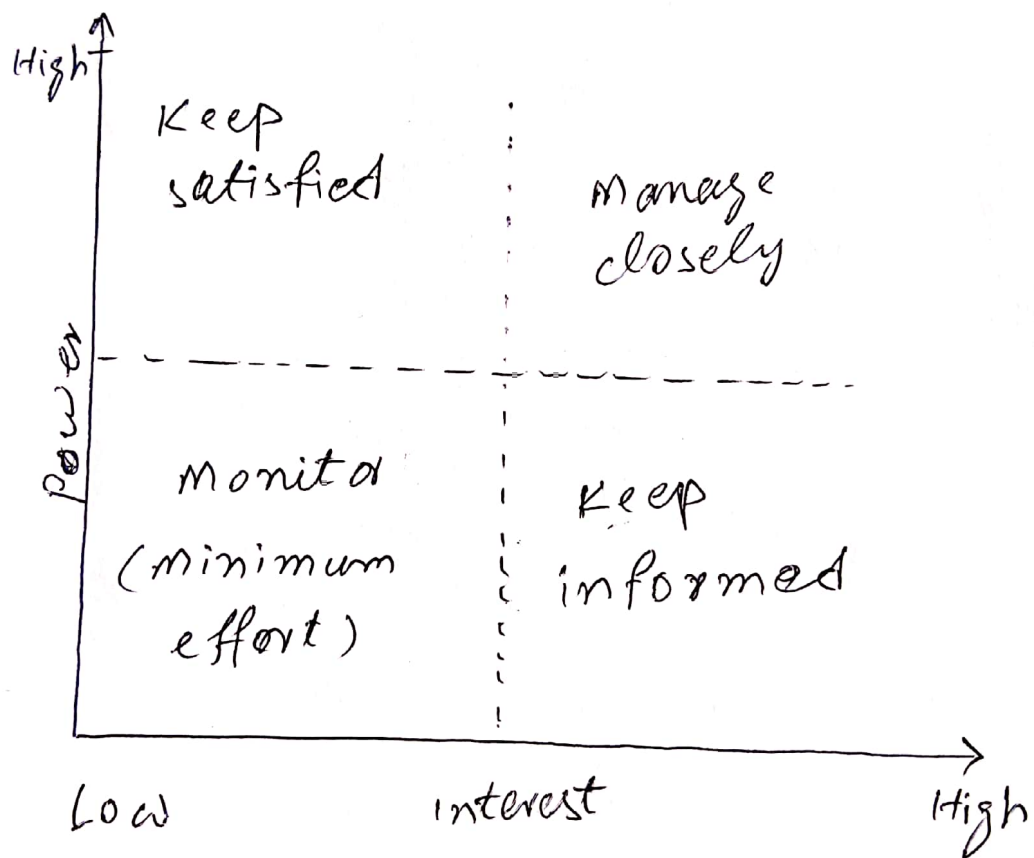
Answer: Power/Interest Matrix

- The power/interest matrix is a simple tool that helps to categorize project stakeholders with increasing power and interest in project.
- This matrix helps to focus on the key stakeholders who can make or break the project. In turn, the power/interest matrix helps us in stakeholder prioritization.

Lay out of the matrix:

The power/interest matrix contains four quadrants. Each quadrant gives an indication of the level of stakeholder

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management that we will have to employ and may also influence the type of communication style. The four quadrant of power/interest matrix are shown below.



- i) High power - High interest
- ii) High power - low interest
- iii) Low power - high interest
- iv) Low power - low interest.

Q No. 5 :-

check list for Risk
Management :-
stages

stage 1 :- Initiation

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

stage 2 :- Proposal Familiarization

- Specify objectives and criteria.
- Familiarize the team with the

proposal, assemble documentation and define the key objectives.

→ Assess the proposal in relation to the Agency's objectives and strategies.

→ Determine Assessment criteria for proposal.

→ Define key elements (target 20-50 elements, items or activities) to structure risk analysis.

Stage 3. Risk Analysis :-

→ Identify risks:-

→ Prepare a comprehensive schedule of risks for each element.

→ Assess risk likelihoods and consequences:-

→ Assemble data on risk their consequences.

→ Assess risk likelihoods.

→ Assess risk impacts.

→ Identify significant risks:-

→ Rank risk to reflect impacts and likelihoods.

→ where applicable, estimate risk factors.

→ Discard/accept minor risks.

→ Identify moderate risks for management measures.

Stage 4. Risk Response planning

→ Identify feasible planning

→ For each moderate and major

risk, identify the feasible responses

→ Responses may include;

a) risk prevention

b) impact mitigation

c) risk transfer and insurance

d) risk acceptance.

→ Develop management measures and action schedules

→ Specify Risk management measures for moderate risks.

→ Develop risk action schedules for major risks.

a) Actions required (what is to be done)

b) Resources (what and who?)

c) Responsibilities (who?)

d) Timing (when?)

Stage 5 : Reporting

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

Stage 6. Risk Management implementation:

- Implement measures and action strategies.
- Monitor the implementation.
 - a) Assign Responsibilities
 - b) Timing.
- Under take periodic review and ~~perforfor~~ performance evaluation.