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Section = "C"

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Management.

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Question No. 01

Answer question No. 01

Solution:

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

The number of people involved in six communication

Question No # 01

Channels \Rightarrow

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

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

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

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

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

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

$$(n-4) = 0$$

$$n+3=0$$

$$\Downarrow$$

$$n=4$$

$$\Downarrow$$

$$n=-3$$

So the number of people involved = 4

As, there are additional stake holders so total number of people are.

$$n = 4 + 2$$

$$n = 6$$

Now, the required communication

$$\text{channel} = \frac{6(6-1)}{2} = 3(5)$$

$$\text{New communication channel} = \boxed{15} \text{ Ans}$$

Question NO # 02

Answer Question No. 02

Term	FORMULA
Earned value	$EV = PV \text{ to date} \times RP$
Cost variance	$CV = EV - AC$
Schedule variance	$SV = EV - PV$
Cost Performance Index	$CPI = EV/AC$
Schedule performance Index	$SPI = EV/PV$
Estimate at completion (EAC)	$EAC = BAC/CPI$
Estimate time to complete original time estimate.	

Earn value.

$$EV = PV \text{ to date} \times RP$$

Value (1)

$$EV = 100,000 \times \frac{100}{100}$$

$$EV = 100,000 \times 1$$

$$EV = 100,000$$

Value (2)

$$EV = 100,000 \times \frac{100}{100}$$

$$EV = 100,000 \times 1$$

$$EV = 100,000$$

Value No. (03)

$$\begin{aligned} &= 100,000 \times \frac{90}{100} \\ &= 100,000 \times 0.9 \\ &= 90,000 \end{aligned}$$

Value No. (04)

$$\begin{aligned} EV &= 100,000 \times \frac{80}{100} \\ &= 0.8 \times 100,000 \\ &= 80,000 \end{aligned}$$

Value No. (05)

$$\begin{aligned} EV &= 100,000 \times \frac{50}{100} \\ EV &= 50,000 \end{aligned}$$

Cost Variance. $CV = EV - AC$

Value No. (1)

$$\begin{aligned} CV &= 100,000 - 120,000 \\ &= -20,000 \end{aligned}$$

Value NO #02

$$\begin{aligned} CV &= 100,000 - 110,000 \\ &= -10,000 \end{aligned}$$

Value NO #03

$$\begin{aligned} CV &= 100,000 - 80,000 \\ &= 20,000 \end{aligned}$$

Value No. (4)

$$CV = 100,000 - 125,000 \\ = -25,000$$

Value No. (5)

$$CV = 100,000 - 75,000 \\ = 25,000$$

Values from (6) to (10)

Same values

$$CV = 100,000$$

Schedule Variance

$$SV = EV - PV$$

Value No. (01)

$$SV = 100,000 - 100,000 \\ = 0$$

Value No. (02)

$$SV = 100,000 - 100,000 \\ = 0$$

Value No. (03)

$$SV = 90,000 - 100,000 \\ = -10,000$$

Value No. (04)

$$= 80,000 - 100,000 \\ = -20,000$$

Value No (05)

$$SV = 50,000 - 100,000$$

$$SV = -50,000$$

Value No (06) to (10)

$$SV = 0 - 100,000$$

$$= -100,000$$

Cost Performance Index

$$CPI = EV/AC$$

Value (1)

$$CPI = 100,000 / 120,000$$
$$= 0.83$$

Value (2)

$$CPI = 100,000 / 110,000$$
$$= 0.90$$

Value (3)

$$CPI = 90,000 / 80,000$$
$$= 1.13$$

Value (4)

$$CPI = 80,000 / 125,000$$
$$= 0.64$$

Value NO (05)

$$SPI = 50,000 / 100,000$$

$$\text{Value No } (6 \text{ to } 10) = 0.5$$

same values.

Value NO # (06) to (10)

$$CPI = \frac{0}{0} = 0$$

Schedule performance Index.

$$SPI = EV / PV$$

Value No. (01)

$$SPI = 100,000 / 100,000$$

$$= 1$$

Value No (02)

$$SPI = 100,000 / 100,000$$

$$= 1$$

Value No (03)

$$SPI = 90,000 / 100,000$$

$$= 0.9$$

Value No. (04)

$$\begin{aligned} SPI &= 80,000 / 100,000 \\ &= 0.8 \end{aligned}$$

Value No. (05) = 50,000 / 100,000

Value No (6 to 10) = 0.5

$$\begin{aligned} SPI &= 0 / 100,000 \\ &= 0 \end{aligned}$$

Estimate at Completion
(EAC).

$$EAC = BAC / CPI$$

$$BAC = 10,000,000$$

$$CPI = 4.495$$

$$= 10,000,000 / 4.495$$

$$= 2,224,690$$

Original time Estimate /
SPI

$$= 2,224,690 / 4.45$$

$$= 499,930$$

$$= 909 \text{ (weeks)}$$

The project is behind the
Schedule.

Question No # 03

Answer Question (03)

Solution:

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

$$PV_0 = -C_0$$

$$PV_0 = -9000$$

$\therefore -C_0 = \text{initial investment}$

$C = \text{cash flow}$

$r = \text{Discount Rate}$

$T = \text{Time}$

$$PV_1 = \frac{C_1}{1+r} = \left(\frac{2000}{1 + \frac{10}{100}} \right)$$

$$\boxed{PV_1 = 1818.18}$$

$$C_1 = 2000$$

$$C_2 = 3000$$

$$C_3 = 3000$$

$$C_4 = 4000$$

$$PV_2 = \frac{C_2}{(1+r)^2} = \frac{3000}{\left(1 + \frac{10}{100}\right)^2}$$

$$\boxed{PV_2 = 2479.34}$$

$$PV_3 = \frac{C_3}{(1+r)^3} = \frac{3000}{\left(1 + \frac{10}{100}\right)^3}$$

$$\boxed{PV_3 = 2253.94}$$

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

$$\boxed{PV_4 = 2732.05}$$

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

$$= -9000 + 1818 \cdot 18 + 2479 \cdot 34$$

$$+ 2253 \cdot 94 + 2732 \cdot 05$$

$$NPV = \boxed{\$ 283.51}$$

Question No (04)

Answer No (04).

Stakeholders in group (A):
Need only minimum effort on monitoring.

Stakeholders in group (B):
Should be kept informed as they may be able to influence more powerful stakeholders.

Stakeholders in group (C):
Are ~~power~~ powerful, but level of interest is low. Generally expected to be passive, but may move into group D on an issue of particular interest.

Stakeholder in group (D)
Are both powerful

and interested. Their Co-operation is of key importance for new strategies.

power/interest matrix

		Level of Interest	
		Low	High
Power	Low	A minimal Effort	B Keep informed
	High	C Keep satisfied	D key players

Question No (05)

Answer question No. (05)

Risk management checklist:

Stage 1:

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

Stage 2:

Proposal familiarisation:

- Specify objective 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 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
- Describe each risk and list the main assumptions
- **Assess risk likelihoods and consequences.**
 - Assemble data on risk and their consequences.
 - Assess risk likelihoods
 - Assess risk impacts.

Identify significant risks.
Rank risks to reflect impact and likelihoods where applicable, estimate risk factors.

Discard/accept minor risks
Identify moderate risks for management measure

Identify major risk for detailed risk action planning.

Stage # (4).

Risk Response Planning.

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 insurance

(d) Risk acceptance:

- select the best response
- evaluate the benefits and costs for each response -
- select the preferred response.