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Subject =>

Construction Management

Submitted to =>

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Answer No: 1

Given Data:-

Number of Communication Channel = 6

Additional Stake holder = 2

Required Data :-

Identify the Number of Communication Channels after Increasing the scope of work = ?

Solution :-

$$\text{Number of Communication Channel} = \frac{n(n-1)}{2}$$

The number involved in six communication channels

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

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

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

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

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

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

$$(n-4) = 0$$

$$\boxed{n = 4}$$

$$n + 3 = 0$$
$$\boxed{n = -3}$$

So the number of People Involved = 4  
As there are additional Stake holders So  
total number of people are

$$n = 4 + 2$$
$$\boxed{n = 6}$$

Now

The Required communication channels

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

$$= 3 \cancel{6} \frac{(6-1)}{\cancel{2}}$$

$$= 3(5)$$

New Communication channels =  $\boxed{15}$

## Answer No (02)

BCWS	ACWP	% Progress	BCWP = EV
100,000	120,000,00	100%	100,000
100,000	110,000,00	100%	100,000
100,000	80,000,00	90%	90,000
100,000	125,000	80%	80,000
100,000	75,000	50%	50,000
100,000	0	0	0
100,000	0	0	0
100,000	0	0	0
100,000	0	0	0
100,000	0	0	0
<u>1,000,000</u>	<u>510,000</u>		<u>320,000</u>

Cost Variance = EV - AC

1)  $100,000 - 120,000 = -20,000$

2)  $100,000 - 110,000 = -10,000$

3)  $90,000 - 80,000 = 10,000$

4)  $80,000 - 125,000 = -45,000$

5)  $50,000 - 75,000 = -25,000$

6)  $0 - 0 = 0$

7) 0

8) 0

9) 0

10) 0

$\Sigma = -90,000 \rightarrow$  over budget

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

$$\frac{320,000}{510,000} = 0.62$$

It has spent 38% more than it should spend till this date.

$$\text{Schedule Variance} = EV - PV$$

$$1) 100,000 - 100,000 = 0$$

$$2) 100,000 - 100,000 = 0$$

$$3) 90,000 - 100,000 = -10,000$$

$$4) 80,000 - 100,000 = -20,000$$

$$5) 50,000 - 100,000 = -50,000$$

$$6) 0 - 100,000 = -100,000$$

$$7) 0 - 100,000 = -100,000$$

$$8) 0 - 100,000 = -100,000$$

$$9) 0 - 100,000 = -100,000$$

$$10) 0 - 100,000 = -100,000$$

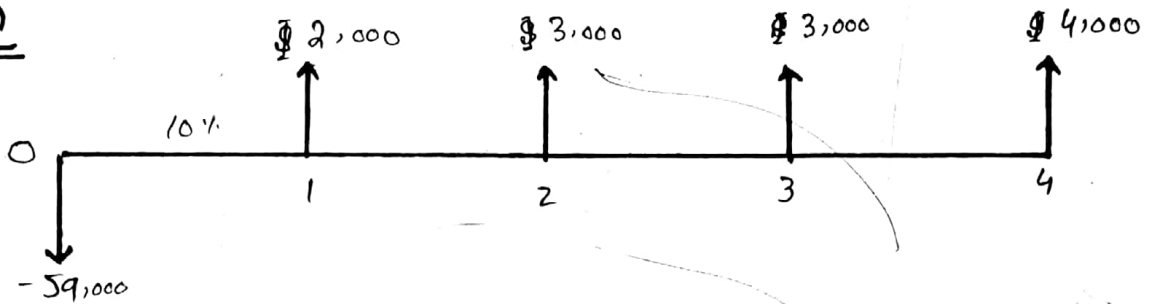
$$\Sigma = -580,000 \text{ — Behind schedule.}$$

$$SPI = \frac{EV}{PV} = \frac{320,000}{1,010,000} = 0.32$$

This project must have 68% accomplished more than actually has at this point. Thus the project is behind schedule and over budget.

# Answer No 3

## Solution



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

$$PV_0 = -C_0$$

$$PV = -9,000$$

$$PV_1 = \frac{C_1}{1+r} = \left( \frac{2,000}{1 + \frac{10}{100}} \right)$$

$$PV_1 = 1818.18$$

$$PV_2 = \frac{C_2}{(1+r)^2} = \frac{3,000}{\left(1 + \frac{10}{100}\right)^2}$$

$$PV_2 = 2479.34$$

$$PV_3 = \frac{C_3}{(1+r)^3} = \frac{3,000}{\left(1 + \frac{10}{100}\right)^3}$$

$$PV_3 = 2253.94$$

$-C_0$  = Initial Investment

$C$  = Cash Flow

$r$  = Discount Rate

$T$  = time

$$C_1 = 2000$$

$$C_2 = 3000$$

$$C_3 = 3000$$

$$C_4 = 4000$$

$$P_{v4} = \frac{C_4}{(1+r)^4}$$
$$= \frac{4000}{(1 + 10/100)^4}$$

$$P_{v4} = 2732.05$$

$$NPV = -C_0 + \frac{C_1}{1+r} + \frac{C_2}{(1+r)^2} + \frac{C_3}{(1+r)^3} + \frac{C_4}{(1+r)^4}$$
$$= 9000 + 1818.18 + 2479.39 + 2253.94 + 2732.05$$

$$NPV = \$ 283.51$$

## Answer No-4

### (1) Identify Your Stakeholders

Start by brainstorming who your stake holder are as part of this. Think of all the people who are affected by your work. who have influence or Power over it or have an interest in its successfull or unsuccessfull conclusion. The table will identify the people who might be stake holder in your Job or in your project.

Your boss	Share holders	Government
Senior executives	Alliance Partners	Trade associations
Your Co-workers	Suppliers	The Press
Your Team	Lenders	Interest Group
Customers	Analysis	The public
Prospective customers	Future recruits	The community
Your Family	key contributors	key advisors

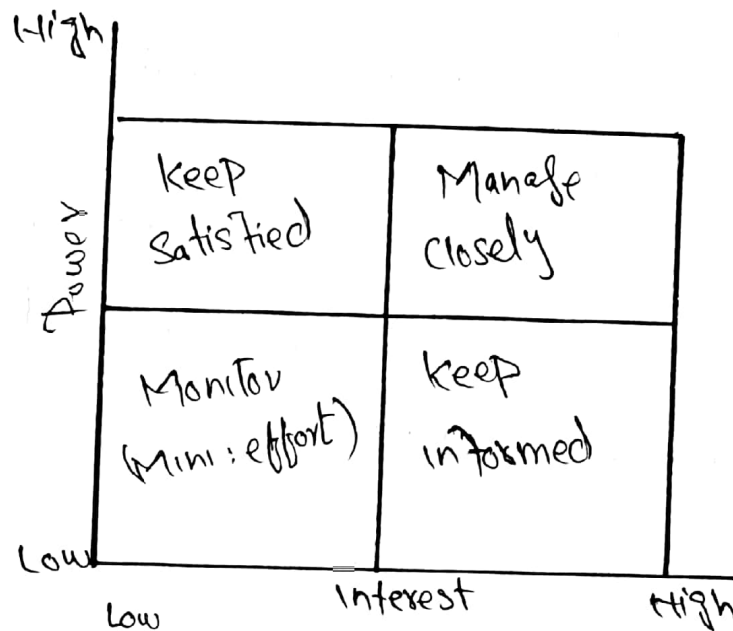
### (2) Prioritize Your Stakeholders

You may now have a list of people and organization that are affected by your work. Some of these may have the power either to block that work or to advance it. Some may be interested in what you are doing, while other



may not care so you need to work out who you need to prioritize.

You can map out your stakeholder and classify them according to their power over your work and their interest in it.



The position that you allocate to stakeholder on the grid show you the action you need to take with them

### (3) Understand Your key stake holders

You now need to discover how your key stake holder feel about your project you also need to work out how best to engage them and how to communicate with them.

Questions that can help you understand your stakeholder include.

- (1) what financial or emotional interest do they have in the outcome of your work. is it positive or negative.

# Answer No 5

For a Project of residential house the different stages to be considered in Risk Management check lists are :

## Stage #01

### 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 #02

### Proposal Familiarization:

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

## Stage #03

### Risk Analysis

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

Asses risk likely hoods and consequences

- (1) Assemble data on risk and their consequences
- (2) Assess risk likely hoods
- (3) Assess risk impacts

Identify signification risk

- (1) Rank risks to reflect impacts and likely hoods.
- (2) where applicable, estimate risk factors.
- (3) Discard/accept minor risks.
- (4) Identify moderate risk for management measure.

## Stage #04

### Risk Response Planning

- Identify feasible Responses
- For each moderate and major Risks Identify the Feasible responses.
- Responses may include.
  - (1) Risk Prevention
  - (2) Impact mitigation.

(3) Risk transfer and insurance.

(4) Risk acceptance.

→ Describe each feasible response and list main assumptions.

→ Select the best response.

(1) Evaluate the benefits and costs for each response.

(2) Select the preferred response.