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Q 1:- You have a team of project managers reporting to you. Recently a new manager relatively inexperienced has joined your team. Considering his level of experience you assign him to a small project. Considering low complexity and few stakeholders involved, you envision the project to have no surprises or hiccups. You have identified the number of communication channels to be only 6. However with increase in scope of work 2 additional stakeholder who need to be communicated with join the team. You ask the manager to identify the number of communication channels now?

Ans:- 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

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

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

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

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

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

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

$$(n-4) = 0$$

$$n = 4$$

$$n+3 = 0$$

$$n = -3$$

So the number of people involved = 4

As; There are additional stake holders.

So that total number of people are;

$$n = 4 + 2$$

$$n = 6$$

Now, the required communication

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

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

$$= 3(5)$$

New communication channel = 15 Ans.

Q2. If you have a project of 10 package planned value. Actual cost and percentage to completion is given. Calculate earned value, cost variance, schedule variance, cost performance index and schedule performance index? (comment if the project is ahead/behind schedule or over/under budget).

BCWS	ACWP	% Progress	BCWP = EV
100,000	120,000.00	100%	$100,000 \times \frac{100}{100} = 100,000$
100,000	110,000.00	100%	= 100,000
100,000	80,000.00	90%	$100,000 \times \frac{90}{100} = 90,000$
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>100,000</u>	<u>0</u>	<u>0</u>	<u>0</u>
1000000	510,000		320000

Cost Variance = EV = AC (Actual cost)

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

2)

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) $0 - 0 = 0$

8) $0 - 0 = 0$

9) $0 - 0 = 0$

10) $0 - 0 = 0$

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

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

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

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

Schedule Variance

$$= EV - PV$$

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

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

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

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

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

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

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

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

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

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

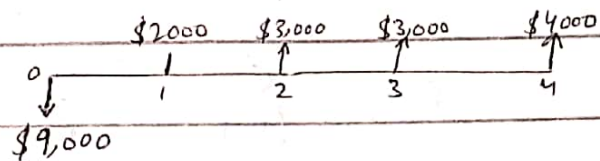
$\Sigma = -580,000 \rightarrow$ Behind schedule

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

This project must have 68%
accomplished more than actually
has at this point.

Thus, The project is behind
schedule and over budget.

Q 3:- A company is planning to invest 9000\$ in a project today. The project is expected to have life of four years. The expected cash flow for next four years is shown and the discount rate is 10%. Calculate net present value (NPV) and comment on the result?



Given data:-

- C_0 = Initial investment

C = Cash Flow

r = Discount Rate

T = Time

$C_1 = 2000$

$C_2 = 3000$

$C_3 = 3000$

$C_4 = 4000$

Solution:-

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

$$PV_0 = -C_0$$

$$PV_0 = -9000$$

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

$$PV_1 = 1818.18$$

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

$$PV_2 = 2479.34$$

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

$$PV_3 = 2253.94$$

$$PV_4 = \frac{C_4}{(1+r)^4}$$

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

$$PV_4 = 2732.05$$

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

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

$$NPV = \$283.51$$

Q4. Being a Project Manager, how would you identify the stake holders by power/interest Matrix?

Ans:-

1. Identify your stakeholders.

Start by brainstorming who your stakeholders 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 successful or unsuccessful conclusion.

The table below identifies some of the people who might be stakeholders in your job or in your projects.

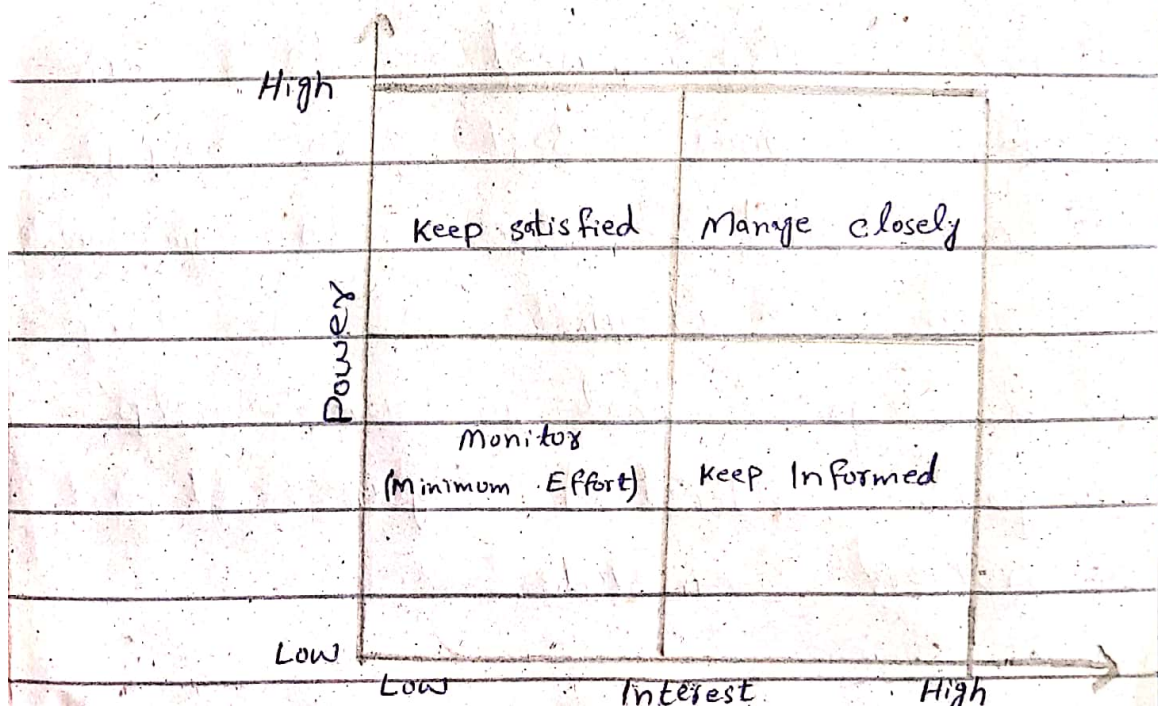
Your boss	Share holders	Government
Senior executives	Alliance partners	Trades associations
Your co-workers	Suppliers	The press
Your team	Lenders	Interest groups
Customers	Analysts	The public
Prospective customers	Future recruits	The community
	"	"
Your family	Key contributors	Key advisors

2. Prioritize Your stakeholders.

You may now have a list of people and organizations 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 others may not care, so you need to work out you need to prioritize.

You can map out your stakeholders and classify them according to their power over work and their interest in it, on a Power Grid. (Our Interactive Screen App makes this step easy to accomplish, or you can download a template of the grid by clicking on the "download template" button at the end of this article.

Figure 1: Power/Interest Grid for stakeholder Prioritization.



The position that you allocate to a stakeholder on the grid shows you the actions you need to take with them:

→ High power, highly interested people

→ High power, less interested people

→ Low power, highly interested people

→ Low power, less interested people

3. Understand your key stakeholders

You now need to discover how your key stakeholders 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 stakeholders include:

- What financial or emotional interest do they have in the outcome of your work? Is it positive or negative?

- What motivates those most of all?

- What information do they want from you, and what is the best way of communicating with them?

- What is their current opinion of your work? Is it based on good info?

- If they aren't likely to be positive, what will win them around to support your project?

- Who else might be influenced by their opinions? Do these people become stakeholders in their own right?

Q5:- For a project of residential house what are the different stages to be considered in the risk management checklist?

Ans:- Checklist For Risk Management

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 tasks.

Step 2 Proposal Familiarization.

- Specify objectives and criteria.
- Familiarise the team with the proposal, assemble documentation and define the key objectives.

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

- Determine assessment criteria for proposal

- Define key elements to structure risk analysis.

Stage 3. Risk Analysis.

- Identify risks.

- Prepare a comprehensive schedule of risk for each element.

- Describe each risk and list the main assumptions.

- Assess risk likelihoods and consequences

- Assemble data on risk and their consequence

- 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

• Identify major risks 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.

• Describe each feasible response and list main assumptions.

• Select the best responses.

• Evaluate the benefits and costs for each response.

• Select the preferred response.

Stage 5.

Reporting-

→ For designated proposal, 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.

→ Undertake periodic review and performance evaluation.