

NAME

HAMZA KHAN

ID

7782

Subject

Construction Management

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Submitted to

Engr. Zeeshan Ahmad.

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 Stakeholders into 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, total number of People are;

$$n = 4 + 2$$

$$n = 6$$

Now, the required communication

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

$$= 3(5)$$

New Communication Channel = 15 Ans

Q#2

Ans:

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
100,000	0	0	0
<u>100,000</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) $100,000 - 110,000 = -10,000$

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.

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

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

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

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

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

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

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

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

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

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

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

$$\Sigma = -580,000 \Rightarrow$$

Behind Schedule

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

This Project must have 68% accomplished more than actually has at this point,

Thus the Project is behind Schedule & 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:

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

$$PV_0 = -C_0$$

$$PV_0 = -9000$$

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

$$PV_1 = 1818.18$$

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

$$PV_2 = 2479.34$$

$$PV_3 = \frac{C_3}{(1+r)^3} = \frac{3000}{\left(1 + \frac{10}{100}\right)^3} \Rightarrow PV_3 = 2253.94$$

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

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

$$PV_4 = 2732.05$$

$$NPV = -C_0 + \frac{C_1}{1+r} + \frac{C_2}{1+r} + \frac{C_2}{(1+r)^2} + \frac{C_3}{(1+r)^3} + \frac{C_4}{(1+r)^4}$$
$$= 9000 + 1818.18 + 2479.34 + 2253.94 + 2732.05$$

$$NPV = \$ 283.51$$

Q#4 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 it's ~~own~~ successful or unsuccessful conclusion.

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

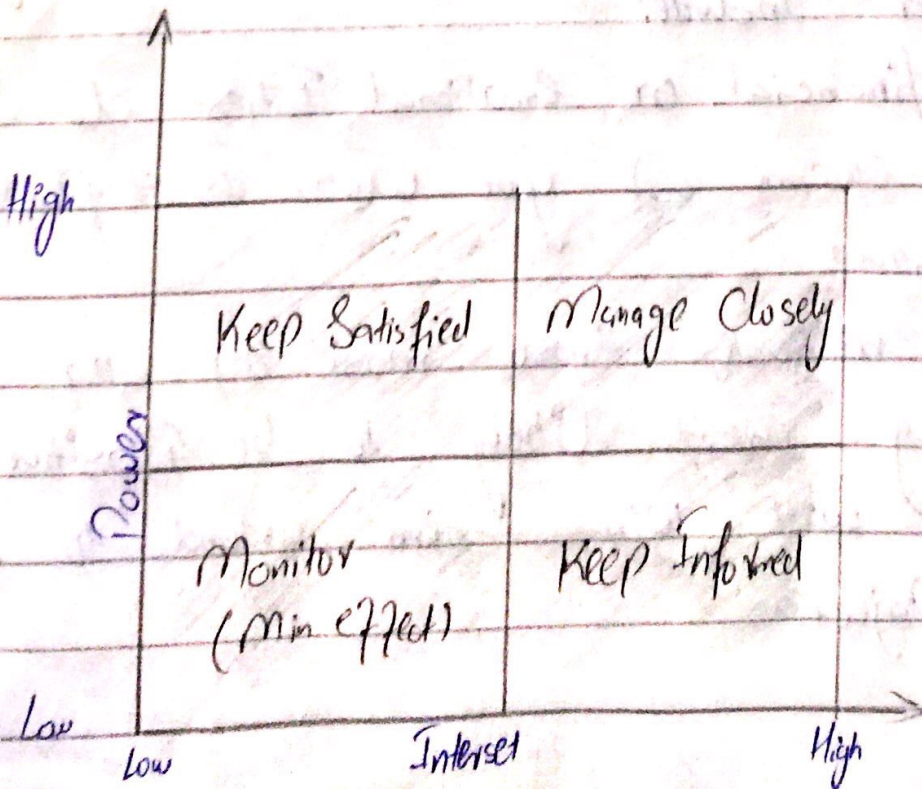
Your boss	Shareholders	Government
Senior executives	Alliance partners	Trade association
Your Co-workers	Suppliers	The Press
Your team	Lenders	Interest groups
Customers	Analysts	The Public
Prospective Customer	Future recruit	The Community
Your family	Key contributors	Key advisors.

② Prioritize your Stakeholders

You may know have a list of people & 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 who need to be prioritized.

You can map out your stakeholders, and classify them according to their power over your work and their interest in it on a Power/Interest grid (see figure 1)

Figure 1: Power/Interest Grid for Stakeholder Prioritization.



High Power, highly Interested People (manage closely)
You must fully engage these people & make
the greatest efforts to satisfy them.

High Power, less Interested People (Keep Satisfied)
Put enough work in with these people to
keep them satisfied, but not so much that they
become bored with your message.

Low Power, highly Interested People (Keep Informed)
adequately Inform these people and talk
to them to ensure that no major issues are
arising.

Low Power, less Interested (Monitor):

Again monitor
these people, but don't bore them with
excessive communication.

③ Understand your Key Stakeholders.

you now need to discover how your key stakeholder ~~can~~ feel about your project.

you also need to work out how best to engage them & how to communicate with them.

Question that can help you understand your stakeholder include:

- What financial or emotional interest do they have the outcome of your work? Is it positive or negative?
- What motivates those most of all?
- if they aren't likely to be positive, what will win them around to support your project?

- if you don't think that you will be able to win them around, how will you manage their opposition?

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

You can ask your stakeholders these questions. Directly. People are often quite open about their views and asking for their opinions is often the first step in building a successful relationship with them.

A simple way to summarize the level of backing you have from your stakeholders is color-code. For example show advocates & supporters in green, blockers and critics in red, & those who are neutral in orange.

Q#5: For a Project of Residential house what are the different stages to be considered in the Risk management Checklist?

Ans:

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 objective and Criteria.
- Familiarise the team with the Proposal, assemble documentation and define the key objectives.
- Assess the proposal, ~~present~~ documentation & define the key objectives in relation to the Agency's objectives & strategies.
- Determine assessment criteria for Proposal.
- Define key element (target 20-50 elements, items or activities) to - Structure risk analysis.

Stage 3 Risk Analysis

* Identify risks:

- Prepare a Comprehensive Schedule of risk each element.

- Describe each risk and list the main assumption.

* Assess risk likelihoods and consequences:

- Assemble data on risk & their consequences

- Assess risk likelihoods.

- Assess risk impacts.

* Identify Significant risks:

- Rank risks to reflect impacts and likelihoods.

- Where applicable estimate risk factors.

- Discard/accept minor risks.

- Identify moderate risk for management measure.

Identify major risk for detailed risk action planning.

Stage 4 Risk Response Planning.

* Identify feasible responses.

* Responses may include:

(a) Risk prevention

(b) Impact migration

(c) risk transfer & insurance.

(d) risk acceptance.

□ Select the best response.

Develop risk action schedules for major risk

(a) Actions required (what is to be done?)

(b) Resources (what and who?)

(c) Responsibilities (who?)

(d) Timing (when?)

Stage 5 Reporting

* For designated proposal, produce the Risk management plan.

- for other projects, collate & summarize risk action schedules & measures.

Stage 6 Risk management Implementation:

- Implement measure & action strategies.

- Monitor the implementation.

(a) Assign responsibilities.

(b) Timing

Undertake periodic review performance evaluation.