Western

The University of Western Ontario

ENGSCI 9510 Engineering Planning & Project Management

Assignment # 3

- ✓ **Start Date: All sections June 6 at midnight in the WebCT assignment area**
- ✓ **Due Date: All sections June 22 at midnight in WebCT drop box.**
- ✓ **Question 1: 1 mark; Question 2: 3 marks; Question 3: 1 mark**
- ✓ **Reference material from topics 7, 9, 10 is generally what is required to properly complete this assignment.**

Question 1 – The Risk to the Project Manager's Success Posed by Communication Paths

The PMBOK tells us that there are n(n-1)/2 communication paths or n(n-1)/2 = paths in any team environment. When it comes to meetings, you get to beat this model because the number of communication paths is limited so long as the "Hey guys only one meeting – listen up" rule is in play.

Consider a Hazardous Materials building being rebuilt on the property of a hospital less than 100 m from a primary school. Not only does the area need to be safely renovated without interruption to the school year, but it has now been discovered that there is asbestos in the building and abatement costs are not in the budget. Tempers are growing short in the owners and contractors meeting and the communication is breaking down. As the project manager for the general contractor you understand that cooler heads must prevail so that the trades all know what the plan will be to ensure a safe and financially viable solution. There is no genuine risk to the school children, but you are worried that if the group doesn't all get the same message, one of the trades representatives will notify the school.

A. Sketch a group of n people sitting around a table <u>not having a meeting</u> and demonstrate that the potential for n(n-1)/2 = paths holds by using 4 consecutive examples. Use n=4,5,6,7 and

comment upon the relationship between communication paths and the number of people involved. (Is is linear, inversely proportional, exponential etc…)

B. Now, sketch a group of n people sitting around a table having a meeting where the "Hey guys only one meeting – listen up!" rule is in play. Use n=4,5,6,7 and comment again upon the relationship between communication paths and the number of people involved. Derive the equation for communication paths in a meeting. Write it down.
C. Draw the appropriate conclusion regarding why meetings are theoretically a more effective way of communicating.

Question 2 – Earned Value Analysis

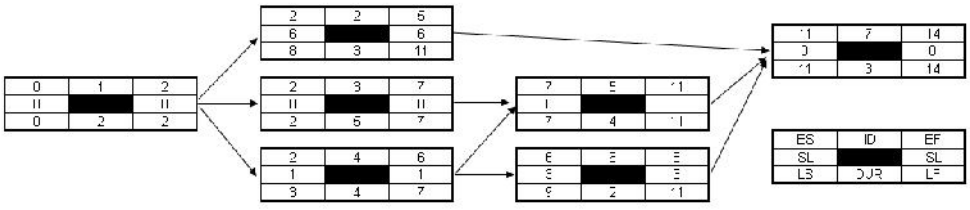
The following information relates to a hypothetical tendered contract for re-painting the Ambassador Bridge between Windsor and Detroit. Painting can proceed during only 7 months of each year due to the prevailing weather conditions (April to October 2012 + April to October 2013). You are the project manager for the painting firm. The situation is described below. An Excel spreadsheet has been provided for your convenience in completing this exercise – particularly as the figures referenced below are eye charts too tiny to work with.

A. Compute the CV, SV, SPI, CPI for each of the 7 status report periods
B. Plot the EV and the AC on the PV graph provided.
C. It is October 2012. Explain to the bridge consortium your assessment as to whether your painting firm has made enough progress to consider itself on schedule at the end of October 2012. At the same time report to your manager the financial status as of the end of October 2012.
D. It is October 2012. Explain to only your manager this time the future expected status of the work at the end of October in 2013. If the work spills over into 2014, there will be a penalty of

$100,000 USD. Should you advise your management you are likely to pay?

Figure 1 presents the project network. Figure 2 presents the project baseline noting those activities using the 0/100 (rule 3) rule, and 50/50 (rule 2) rule. Rule 1 is the percent complete rule. Although the early start time is period 0, the budget is not placed in the time phased baseline until period 2 when the activity is planned to be finished (EF). The same procedure has been used to assign costs for activities 2 and 7. Activities 2 and 7 use the 50/50 rule. Thus 50% of the budget for each activity is assigned on its respective early start date (time period 2 for activity 2 and period 11 for activity 7) and 50% for their respective finish dates. Remember, when assigning earned value as the project is being implemented, if an activity actually starts early or late, the earned value must shift with the actual start times. For example, if activity 7 actually starts in period 12 rather than 11, the 50% is not earned until period 12.

Figure 1 – Network Diagram



ES – Early Start
EF – Early Finish
SL – Slack or Float
LS – Latest Start
LF – Latest Finish

Figure 2 – Baseline - See Attachments to this assignment for native Excel file

Schedule Information							Baseline Budgeted Weekly Time Periods (1-14)													
EV Flag	Activity / Work Package	Duration	Earliest Start	Latest Finish	Slack	Total Planned Value PV	1	2	3	4	5	6	7	8	9	10	11	12	13	14
0	1	2	0	2	0	6		6												
0	2	3	2	11	6	20			10		10									
0	3	5	2	7	0	30			9	6	6	6	3							
0	4	4	2	7	1	20			8	2	5	5								
0	5	4	7	11	0	16								4	4	4	4			
0	6	2	6	11	3	16							8	8						
0	7	3	11	14	0	8												4		4
Total PV (Budget)							0	6	27	8	21	11	12	12	4	4	4	4		4
Cumulative PV (Budget)							0	6	33	41	62	73	85	98	102	106	110	114	114	118

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Status Report Ending Period 1						
Task	% complete	EV	AC	PV	CV	SV
1	0		3	0		
Cumulative totals			**3**	0		

Status Report Ending Period 2						
Task	% complete	EV	AC	PV	CV	SV
1	finished	6	5			
Cumulative totals		6	**5**			

Status Report Ending Period 3						
Task	% complete	EV	AC	PV	CV	SV
1	finished	6	5			
2	0%		5			
3	30%		7			
4	25%		5			
Cumulative totals			**22**			

Status Report Ending Period 4						
Task	% complete	EV	AC	PV	CV	SV
1	finished	6	5			
2	0%		7			
3	50%		10			
4	50%		8			
Cumulative totals			**30**			

Status Report Ending Period 5						
Task	% complete	EV	AC	PV	CV	SV
1	finished	6	5			
2	50%		8			
3	60%		12			
4	70%		10			
Cumulative totals			**35**			

Status Report Ending Period 6						
Task	% complete	EV	AC	PV	CV	SV
1	finished	6	5			
2	50%		10			
3	80%		16			
4	finished		15			
Cumulative totals			**46**			

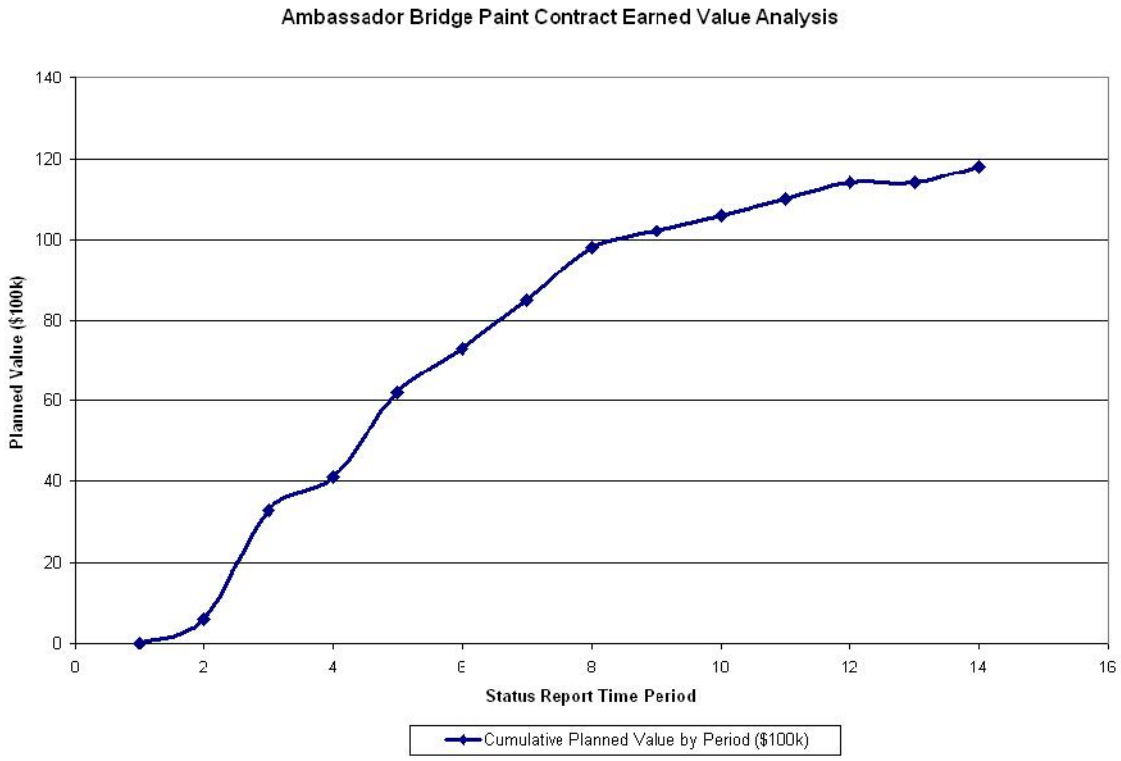
Status Report Ending Period 7						
Task	% complete	EV	AC	PV	CV	SV
1	finished	6	5			
2	finished		14			
3	finished		20			
4	finished		15			
5	0%		0			
6	50%		9			
Cumulative totals			**63**			

A Table for Recording the Indices…

Period	SPI	CPI	PCIB
1			
2			
3			
4			
5			
6			
7			

SPI = EV/PV
CPI = EV/AC
PCIB = EV/BAC

A Basic Plot you can add to in order to demonstrate the health of the project…..



Question 3 – Emotional Intelligence

(Read Option 2 below first...) Option 1: Go to YouTube.com; Search "Terry Tate Office Linebacker". Sit back, relax, and enjoy four or five of these famous Reebok advertisements. In your estimation is Terry a good leader? Specifically referring to the 5 characteristics of emotional intelligence, comment upon Terry's suitability as a leader in this parody of office life.

Option 2. It must be noted by the students that there are instances of mature language and subject matter in the referenced videos. Please if you are not comfortable with reviewing the videos, simply as an alternative complete a 1 full page essay concerning where you have seen or have not seen emotional intelligence where you expected it in the workplace. Do not review the videos if you are uncomfortable with harsh language or mature subject matter.

http://youtube.com/watch?v=RzToNo7A-94
http://youtube.com/watch?v=MRkiouh5NEI
http://youtube.com/watch?v=6EHhwxRIs2Y
http://youtube.com/watch?v=CtJOzE1GJWw
http://youtube.com/watch?v=17jplpjCaec
http://youtube.com/watch?v=omLI8Swat4s