1. Identify the three primary methods of cost estimations. In your opinion, which cost estimation method would you prefer to utilize if you were a project manager? Explain your decision making process.

1. Analyze the following statement: All projects overrun cost estimations and therefore we do not need cost estimations. Support your response with examples.

Accurately estimating the cost of a project is the ultimate planning foundation for any project. If estimates are as close to the real cost of the project as possible then the work can be conducted and coordinated efficiently. Since perfectly accurate estimates are rare it becomes even more important to be as accurate as possible. We know there are three early estimates that one needs for any project and those are effort, duration and cost. Effort must be estimated first because when you understand the actual effort that will be required then you can dole out the resources to determine the duration of the project and ultimately be able to give a more accurate estimate of the costs including labor and non-labor.

When estimating effort you could use the following steps:

1. Determine how accurate your estimate needs to be.

2. Create an initial estimate of how many effort hours will be needed for each portion of the project and then the project as a whole.

3. Next include any specialist resources hours i.e. Training, legal, administrative, etc.

4. Do not forget to add in rework since generally noting is perfect the first time and more often than not rework is involved.

5. Project management time is the effort required to actively and successfully manage a project so for example if the estimate of effort is 1000 hours then the project management effort would be approximately 150 hours since it is generally 15% of the projects time.

6. Always add into your estimated effort contingency hours. This should reflect the risk or uncertainty associated with the estimate.

7. You will need to calculate the total effort by simply adding all the detailed work components.

8. Review your calculations and make adjustments. Remember if it does not look right then you need to take a second look to make sure your assumptions are realistic and make the adjustments.

9. Document your assumptions since you will never know all of the particulars of any project for sure making it important to document any and all assumptions you make with the estimate.

Doing this you should be able to come as close as possible to estimating the effort involved in your project.

Next you ask why it is important to estimate a project correctly. The answer to this is relatively simple and although it is rare that a project estimate would be totally accurate it is extremely important to get as close to the reality of costs as possible. The simple answer is you need a realistic estimate of the cost of the project whether bidding on a project or presenting to your own corporation a project the cost of the project is of primary importance in most situations making it of vital importance that the estimate of the project be as accurate as possible.

Finally you ask why overestimating a project can be just as detrimental as underestimating a project. In order to answer that question let me just give you a few of the arguments against overestimating a project.

1. If a project is overestimated the work will expand to fill the available time. i.e. If you give someone 5 days to complete a task that could be completed in 4 then it is most likely the entire 5 days will be spent on the task. They will find something to do with that extra day. (Parkinson's Law).

2. When given too much time they will procrastinate until late in the project then they will reach a point where they rush to finish their task and most likely will not finish on time. (Goldratt's Student Syndrome).

Business Dictionary. (nd). Parkinson's Law. Retrieved on 9/25/12 from: http://www.businessdictionary.com/definition/Parkinson-s-Law.html

Mochal, T. (2006). Estimate Project Costs after you have Estimated Effort and Duration. From: http://www.techrepublic.com/article/estimate-project-costs-after-you-have-estimated-effort-and-duration/6080089

Mochal, T. (2006). Use this process to estimate effort hours. Retrieved on 9/25/12 from: http://www.techrepublic.com/article/use-this-process-to-estimate-effort-hours/6142489.

Pruchniewski, J. (2010). Critical Chain Project Management. Retrieved on 9/25/12 from: http://www.experts123.com/a/critical-chain-project-management.html

Silva, R. (2009). Is it Better to Overestimate or Underestimate? Retrieved on 9/25/12 from: http://ruisilva.wordpress.com/2009/10/03/is-it-better-to-overestimate-or-underestimate/

1. Describe the process for determining the critical path in a network. Also, discuss how a PM would manage critical path tasks differently than noncritical path tasks.

Draw the network and determine the logical relationships between the activities in it.  Determine the duration for each activity.  Perform the forward pass calculation to determine the critical time for the network.  Perform the backward pass calculation to establish the slack for each activity in the network.  If an activity has 0 slack, then it is a critical activity.  The critical path is composed of the critical activities identified in this manner.  It is possible to have more than one critical path in a network.

By definition, critical tasks are those tasks that if delayed will delay the completion of the entire project.  Therefore, these tasks should be managed more closely than non-critical tasks.

In cases where the activity times are not known with certainty, the tasks assumed to be critical at the beginning of the project may turn out not to be so critical.  Therefore, when tasks times are uncertain, all tasks that may reasonably delay project completion must be carefully managed.