IT Project Management using PMP INFO20172
Term Assignment Description

CASE STUDY: GREEN COMPUTING RESEARCH PROJECT

(Adapted from Schwalbe)

Part 1: Project Integration Management

You work for We Are Big, Inc., an international firm with more than 100,000 employees in several countries. A strategic goal is to help improve the environment while increasing revenues and reducing costs. The Environmental Technologies Program just started, and the VP of Operations, Natalie, is the program sponsor. Ito is the program manager, and there is a steering committee made up of 10 senior executives, including Natalie, who oversees the program. Several projects operate within this program, including the Green Computing Research Project. The CIO and project sponsor, Ben, have given this project high priority and plan to hold special interviews to hand-pick the project manager and team. Ben is also a member of the program steering committee. Before coming to We Are Big, Ben sponsored a project at a large computer firm to improve data center efficiency. This project, however, is much broader. The main purpose of the Green Computing Research Project is to research possible applications of green computing, including the following:

- Data center and overall energy efficiency
- Disposal of electronic waste and recycling
- Telecommuting
- Virtualization of server resources
- Thin client solutions
- Use of open source software
- Development of new software to address green computing for internal use and potential sale to other organizations

The budget for the project is $500,000, and the goal is to provide an extensive report, including detailed financial analysis and recommendations for which green computing technologies to implement. Official project request forms for the recommended solutions will also be created as part of the project. Ben decided to have five people working full-time on this six-month project and to call on people in other areas as needed. He wanted to be personally involved in selecting the project manager and to have that person help him select the rest of the project team. Ben wanted to find people already working inside the company, but he was also open to reviewing applications for potential new employees to work specifically on his project as long as they could start quickly. Because many good people were located in different parts of the world, Ben thought it made sense to select the best people he could find and allow them to work virtually on the project. Ben also wanted the project manager to do more than just manage the project. The project manager would also do some of the research, writing, and editing required to be producing the desired results. Ben was also open to paying expert consultants for their advice and to purchasing books and related articles as needed.

Tasks:

1. Prepare a project charter for the Green Computing Research Project. Again, assume that the project will take six months to complete and that the budget is $500,000. Use the project charter examples from Chapters 3 and 4 as guidelines. Assume that part of the approach is to select the project team as quickly as possible.

Part 2: Project Scope Management

Congratulations! You have been selected as the project manager for the Green Computing Research Project. The company's CIO, Ben, is the project sponsor, and Ito is the program manager for the larger Environmental Technologies Program. Now you need to put together your project team and get to work on this high-visibility project. You will work with Ben to hand-pick your team. Ben had already worked with the HR department to advertise team openings internally and outside the company. Ben also used his personal contacts to let people know about this important project. In addition, you are encouraged to use outside consultants and other resources as appropriate. Initial estimates suggest that about $300,000 of the funds budgeted for this project will go to internal staffing, and the rest will go to outside sources. The main products you will create are a series of research reports—one for each green computing technology listed earlier and a final report that includes all data. You will also produce formal project proposals for at least four recommendations to implement some of these technologies. Ben suggested that the team should develop at least 20 different project ideas and then recommend the top four based on extensive analysis. Ben thought that some type of decision support model would make sense to help collect and analyze the project ideas. You are expected to tap into resources that are available from the Environmental Technologies Program, so you need to include some of those resources in your project budget. Ben mentioned that some research had already been done on increasing the use of telecommuting. Ben also showed you examples of what he considered good research reports. You notice that his examples are very professional, with plenty of charts and references; most are 20 to 30 pages and are single-spaced.
Ben has also shown you examples of good formal project proposals for We Are Big, Inc. These proposals are quite detailed as well; they often reference other research and include a detailed Business case.

Tasks:

1. Develop a scope statement for the project. Be as specific as possible in describing product characteristics and deliverables. Make assumptions as needed.

2. Develop a work breakdown structure (WBS) for the project. Break down the work to level 3 or level 4, as appropriate. Be sure to base your WBS on the project scope statement, stakeholder requirements, and other relevant information. Remember to include the work involved in selecting the rest of your project team and outside resources as well as coordinating with the Environmental Technologies Program. Use the project management process groups as level 2 WBS items or include project management as a level 2 WBS item to make sure you include work related to managing the project.

3. Use the WBS you developed in Task 2 to create a Gantt chart for the project in Microsoft Project 2016. Use the outline numbering feature to display the outline numbers. Click Tools on the menu bar, click Options, and then click Show outline number. Do not enter any durations or dependencies.

Part 3: Project Time Management

As project manager, you are actively leading the Green Computing Research Project team in developing a schedule. You and Ben found three internal people and one new hire to fill the positions on the project team as follows:

- Matt is a senior technical specialist in the corporate IT department. He works in the building next to yours and Ben's. He is an expert in collaboration technologies, and he volunteers in his community to help organize ways for residents to dispose of computers, printers, and cell phones.
- Teresa is a senior systems analyst in the IT department in a city 500 miles away from your office. She just finished an analysis of virtualization of server resources for her office, which has responsibility for the company's data center.
- James is a senior consultant in the strategic research department in a city 1,000 miles away from your office. He has a great reputation as being a font of knowledge and excellent presenter. Although he is over 60, he has a lot of energy.
- Le is a new hire and former colleague of Ben's. She was working in Malaysia, but she was planning to move to your location and begin work about four weeks after the project started. Le wrote her doctoral thesis on green computing.

While waiting for everyone to start working on your project, you talked to several people who were working on other projects in the Environmental Technologies Program and you did some research on green computing. You can use a fair amount of the work already done on telecommuting, and you have the name of a consulting firm to help with that part of your project, if needed. Ito and Ben both suggested that you get up to speed on available collaboration tools because much of your project work will be done virtually. They knew that Matt would be a tremendous asset for your team in that area. You have contacted other IT staff to get detailed information on your company's needs and plans in other areas of green computing. You also found out about a big program meeting in England next month that you and one or two of your team members should attend. Recall that the Green Computing Research Project is expected to be completed in six months, and you and your four team members are assigned full-time to the project. Your project sponsor, Ben, has made it clear that delivering a good product is the most important goal, and he thinks you should have no problem meeting your schedule goal. He can authorize additional funds, if needed. You have decided to hire a part-time editor and consultant, Deb, to help your team produce the final reports and project proposals. You know Deb from a past job. Your team has agreed to add a one-week buffer at the end of the project to ensure that you finish on time or early.

Tasks:

1. Identify at least four milestones for this project. Write a one-page paper that describes each milestone using the SMART criteria.
2. Using the Gantt chart you created for Task 3 in Part 2, and the new activities and milestones you proposed in Task 1 above, estimate the task durations and enter dependencies as appropriate. Remember that your schedule goal for the project is six months.

Part 4: Project Cost Management

Your project sponsor has asked you and your team to refine the cost estimate for the project so that a solid cost baseline exists for evaluating project performance. Recall that your schedule and cost goals are to complete the project in six months or less for under $500,000. Initial estimates suggested that about $300,000 would be spent on internal labor. You mistakenly thought that travel costs would be included in that $300,000, but now you realize that travel is a separate cost item. The trip to England early in the project cost $6,000, which you had not expected.

Tasks:

1. Prepare and print a one-page cost estimate for the project, similar to the one provided in Chapter 7. Use the WBS categories you created earlier, and be sure to document assumptions you make in preparing the cost estimate. Assume a burdened labor rate of $100/hour for yourself (the project manager), $90/hour for Teresa, James, and Le, and $80/hour for Matt. Assume about $200/hour for outsourced labor.
2. Assume that you have completed three months of the project and have actual data. The BAC was $500,000 for this six-month project. Also assume the following:
   - PV = $160,000
   - EV = $150,000
   - AC = $180,000

   Using this information, write a short report that answers the following questions.

   a. What is the cost variance, schedule variance, cost performance index (CPI), and schedule performance index (SPI) for the project?
   b. Use the CPI to calculate the estimate at completion (EAC) for this project. Use the SPI to estimate how long it will take to finish this project. Sketch an earned value chart using the preceding information, including the EAC point. See Figure 7-5 as a guide. Write a paragraph that explains the information in the chart.
   c. How is the project doing? Is it ahead of schedule or behind schedule? Is it under budget or over budget? Should you alert your sponsor or other senior management and ask for assistance?

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What you are to do:

- Read the case study carefully.
- Complete each of the Tasks following each section (Part).
- Prepare a Final Report consisting of all the Task deliverables.

The deliverables are:

Status Report (5 Marks)

- A written status report (softcopy only), submitted to the SLATE mailbox before the start of class on that day. See detail below.

Final Report (20 Marks)

- The Final Report (softcopy only) containing:
    a. The checklist (completed);
    b. ALL the deliverables from the Tasks, in the order listed in the checklist. The **Final Report is to be submitted as one Word document and one .mpp file – not a series of documents, not as a .zip file. Marks will be deducted for this.**

Lessons Learned (5 Marks)

- A lessons learned report (one page minimum).

See Slate for each due date.

Deliverable Details

Status Report

Write a brief statement describing what your team has attempted and what it has accomplished so far. This is your class project team, not Ben's team.

Include the deliverables from Part 1 and Part 2, and appropriate Project Management tasks.

The mark received will be influenced by the quantity of your accomplishments and the degree of detail in your Gantt view. Submit this via SLATE.

Final Report

The report is to be delivered in a professional manner, including spelling and grammar (Ask yourself – would you be proud to hand this to an employer of an example of your work?). The first page is to be the "Check list and Title Page". Complete the checklist as evidence that you have all elements in the report and in their proper order. It is to include ALL tasks (as you may have had to revise the Charter or WBS, for example). Complete the appropriate class day (e.g., Tuesday) and the team members' first and last names. It is due via SLATE mailbox before class on class day. After that time, the report is late. Within the first 24 hours after due time, a penalty of 10% of the assignment allowance will be assessed. After 24 hours but before 48 hours, there will be a 20% penalty. After 48 hours, a submission is unacceptable and will not be graded.

Check list:

- Appropriate cover page
- Completed Check list page
- Project Charter (Part 1, Task 1)
- Scope Statement (Part 2, Task 1)
- WBS – List Form (Part 2, Task 2)
- Gantt chart (Part 2, Task 3)
- SMART paper (Part 3, Task 1)
- Milestone Report (Part 3, Task 2)
- Gantt chart (Part 3, Task 3)
- Cost estimate (Part 4, Task 2 revised version)
- Report elements sequenced as required.

- Your Microsoft Project file.

The Lessons Learned Document

By the last day of class, each team will submit a written document via SLATE mailbox outlining the lessons in project management they have learned through doing this assignment. The document is to be one single-spaced page, or more.