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Project Management Module #4

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1. Define project risk and risk management.

According to the text, the Project Management Institute defines project risk as “an uncertain event or condition that, if it occurs, has a positive or negative effect on one or more project objectives” (243). This definition informs us that risks are not always associated with negative consequences. In fact, because risks are uncertain, they have the potential of producing both positive and negative outcomes. Risk management is defined as the “art and science of identifying, analyzing, and responding to risk factors throughout the life of a project and in the best interests of its objectives” (243). In short, problems will arise, however, what project managers do when risks arise is key to their success and/or failure.

2. Briefly define the four key stages of risk management.

The text describes the four key stages of risk management as the following: risk management, analysis of probability and consequences, risk mitigation strategies, and control and documentation.

- **Risk identification**—the process of determining the specific risk factor that can reasonably be expected to affect your project. There are various identifiable risks such as financial risks, technical risks, commercial risks, execution risks, & contractual or legal risks.
 - **Analysis of probability and consequences**—the potential impact of these risk factors, determined by how likely they are to occur and the effect they would have on the project if they did occur. Basically, risks will occur, however, what is the likelihood of them doing so, and what will their impact be?
 - **Risk mitigation strategies**—steps taken to minimize the potential impact of those risk factors deemed sufficiently threatening to the project. Project managers can predict that risks will occur, therefore, it is incumbent upon them to construct the necessary systems designed to mitigate the harms associated with those risks.
 - **Control and documentation**—creating a knowledge base for future projects based on lessons learned. This process affords project managers with the documented systems they can refer to in the event risks occur in the future.
3. In the text, the risk identification stage may identify various types of risk. Pick any two to define and provide an example of.
- **Financial risk**—Financial risks refers to the financial exposure a firm open itself to when developing a project. An example of this would be an oil company who wants to construct an offshore rig in the ocean.
 - **Technical risk**—When new projects contain unique technical elements or unproven technology, they are being developed under significant technical risk. An example of this is NASA’s Space Launch System carrying the Orion spacecraft, the first of its kind.

4. There are four risk mitigation strategies. Briefly define them.

The four risk mitigation strategies are Accept risk, Minimize Risk, Share Risk and Transfer Risk.

Accept Risk: Project managers accept the fact that risks will occur, however, not all risk are sufficient to warrant any action. Thus, they accept the fact that although risks are minimal, the likelihood of them taking place are slim.

Minimize Risk: All projects come with risks, some larger than others. Therefore, companies must take measures to minimize potential risks depending on their sizes. The bigger the risk, the bigger the need to minimize them.

Share Risk: Because risks are a common occurrence in project management, it is often shared amongst multiple members. This is to ensure that everyone is equally responsible for a project's successful completion, or its unfortunate failure.

Transfer Risk: Transfer risks occur when the nature of the risk cannot be changed through either "elimination or minimization" (253).

5. Define cost estimation. Describe why it is important in the project management process.

According to the text, cost estimation is defined as the process at which determines if a project is both viable and profitable (276). Cost estimation is important in the project management process because it creates a "reasonable budget baseline" that factors in all the costs associated with the project to determine if the project has any chance of success.

6. List the common sources of project costs. There are five. (No need to define them!)

- Labor
- Materials
- Subcontractors
- Equipment and facilities
- Travel

7. Compare and contrast direct and indirect costs. Secondly, compare and contrast fixed and variable costs.

Direct costs are those assigned to the aspect of the project that generated the cost (277). For example, laborers who are on the site putting in the daily work towards the project's completion. In contrast, indirect costs are linked to two features such as overhead, and selling and general administration. An example of this would be the depreciation of equipment.

Fixed costs do not vary over the course of time, they remain the same. In contrast, however, variable costs are those that can change; they can accelerate or increase because of their usage (279).

8. What is a parametric cost estimate and how does it differ from an analogous estimate?

Parametric estimation is the development of detailed estimates of current projects by taking older work and inserting a multiplier to account for the impact of inflation, labor, and materials increases, and other reasonable direct costs (280). However, analogous estimation is used when there is limited information available about the current project being planned (281). Thus, the difference between the two is that the former relies upon information that is readily available based on past projects, while the latter obtains its estimates from information that is limited.

9. What is a learning curve and why is it important?

A learning curve is when team members are able to complete tasks at a faster rate because of experience than they would due to lack of experience. This is important because it helps project managers determine how they can readjust cost estimate. This can help reduce the cost of a project yet increase profitability as well.

10. What are some reasons why developing an accurate cost estimate can be difficult?

Project managers are faced with the challenging prospect of developing an accurate cost estimate associated with the completion of projects. Some of the reasons why this can be difficult is due to low initial estimates that fail to consider other costs that are required for the successful completion of a project. Another reason this can be difficult is due to the unexpected technical difficulties. Unfortunately, the technical problems are understated thereby minimizing the harm they may cause. Finally, another reason why developing an accurate cost estimate can be difficult is due to external factors such as a recession that impacts the global economy.

11. Compare and contrast top-down and bottoms-up budgeting.

According to the text, top-down budgeting requires direct input from the organization's top management (292). This means that top management provides their input into the estimation of projected costs. Whereas bottom-up budgeting approaches begin inductively from the work breakdown structure to apply direct and indirect costs to project activities (293). This means that project managers are required to estimate the costs of activities and specific funds for certain tasks.

12. Define activity-based costing.

Activity-based costing (ABC) is a budgeting method that assigns costs first to activities and then to the projects based on each project's use of resources (293). The basis of ABC's is that the more activities managers engage in, the more costs that accompany the

process. Thus, ABC's aim to predict the cost of activities with the understanding that they consume resources.