

Estimating the Project Resources

Resources include materials, equipment, and people. After the project manager and the project team have worked together to determine the sequence of the activities, they now have to determine which resources are needed for each activity, as well as how much of each resource. As you can guess, resource estimating goes hand in hand with cost estimating (which we'll discuss in Chapter 7). After all, if you need a metric ton of pea gravel, that's a resource estimate, but someone's got to pay for that metric ton of pea gravel.

To estimate the demand for the project resources, you'll need several inputs:

- Schedule management plan
- Activity list
- The attributes of each activity
- The availability of the resources you'll need, in the form of two calendars:
 - *Resource* calendars let you know when individual resources are available. This calendar tells you when Bob has scheduled a vacation, when a piece of equipment that your project needs is already scheduled for use, and even when facilities like meeting rooms are available.
 - *Project* calendars communicate when the project work may take place. For example, your project may allow work to happen between 6 A.M. and 6 P.M., Monday through Friday. Your project calendar will also identify any holidays when the project work won't happen.
- Risk register
- Activity cost estimates
- Enterprise environmental factors
- Organizational process assets

Using Expert Judgment

The project manager and the project team have worked together to create the WBS, the activity list, and the sequence of activities, so it makes sense that they'll continue to work together to create the resource estimates. And they do. According to the PMBOK, the project management team may work with experts to help make the best decisions. This is using the old standby, "expert judgment," when the project manager relies on someone more knowledgeable to help make the best decision.

Identifying Alternatives

As the project management team determines what resources are needed, there will be plenty of opportunities to determine which solution is the best solution for the project. Whenever more than one solution is presented, this is called *Alternative analysis*. Alternative analysis comes in many different flavors:

As the name implies, these are dependencies outside examples include the delivery of equipment from a another project, or the decision of a committee, and

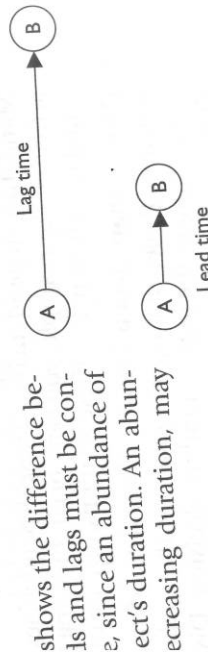
Some relationships are internal to the project or the project team must create the software as part of the software can be tested for quality control.

Have dependencies for passing your PMI exam. It's apply for the exam. You've an external dependency with application—it's somewhat out of your hands. You also try dependencies, such as when you study, your mental of the chapters you study. Take charge and keep and passing the exam. You can do this!

d Lags

to activities to slightly alter the relationship between a finish-to-start relationship may exist between applying the paint. The project manager in this scenario of lead time to the activity of painting the warehouse. day before the priming is scheduled to end. Lead time because time is subtracted from the downstream activity the project.

Imagine a project to install wood floors in an office building-to-start relationship between staining the floors and them. The project manager has elected, because of the add two days of lag time to the downstream activity of ellac cannot be applied immediately after the stain, but s. Lag time is considered a positive value, since time is



time is always "accelerated time" and is negative time is moving closer to the project start date. Lag time is always is considered positive time because the project manager is e project schedule.