Mastering Projects Series

Estimating

Projects miss their original time and cost estimates for many reasons. Although external changes or unpredictable surprises cause some of these misses, often the original estimates were just plain wrong.

Why Are So Many Estimates Wrong?

Many project teams have a very difficult time accurately estimating how long a task or a project will take. Why are we so bad at it? Here are some of the reasons that I've seen.

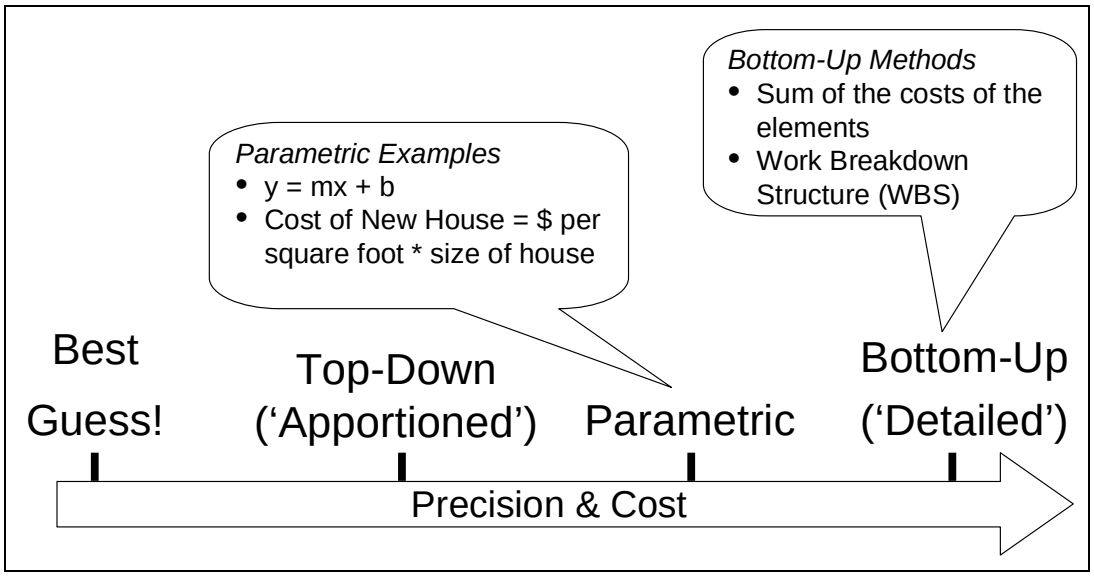
- *Rush to execution:* We tend to skimp on planning so we can get to the "real work" quickly.
- *Fuzzy or inaccurate definition of scope:* We can't estimate what we can't describe. All estimates are suspect if the scope of the project is not clear.
- *Failure to account for problems:* Our estimates don't have room for surprises and problems, even though we know that they will happen. Murphy is alive and well.
- *Not enough historical information:* Estimates based on "gut feel" are usually wrong. Estimates are more accurate when they are backed by real experience and information from past projects.

Fortunately, there are estimating methods that can help.

Techniques for More Accurate Estimates

The most common approach to estimating is the *best guess* method. Although widely used, it gives poor results – inconsistent and inaccurate! However, there are several other approaches to estimating. You can use them whether you are estimating cost or time.

Top-down is the fastest, lowest cost, and least precise method. In this method, break a project into several major components, and then estimate each component based on previous experience with comparable work. Make appropriate adjustments a for differences between the new project and the ones it is being compared to. Often a management team uses this method to get an early estimate without incurring the time and expense of involving everyone working on the project. *Top-down* is most accurate when the estimators have past experience that is similar to the new project, and when high-level historical data is available.



Parametric estimating uses a formula to predict the time and cost of future work based on past actuals. For example, a homebuilder can make a rough estimate of the cost of building a new home by using a cost per square foot parameter. New ultra-luxury condominiums in the Pearl recently sold for nearly $1000 per square foot, so if you want to buy that 3000 square foot beauty, you can estimate that it will cost about $3,000,000. Parametric estimating is low cost and fast if you have good benchmark data. It is especially useful when you are estimating something that has been done many times before.

In *bottom-up estimating* the owner of each low level task in the project makes an estimate. The individual estimates are totaled to get a project estimate. Since you need comprehensive and detailed task breakdowns to do this, you can't do bottom up estimating until you are well into the planning phase of the project. This method is the most expensive – it can involve a lot of time and people – but potentially the most accurate.

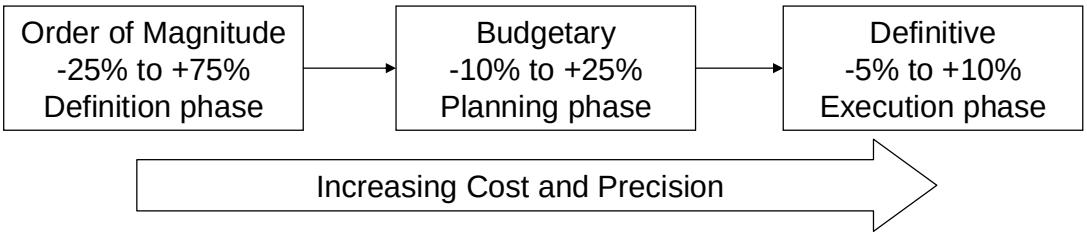
None of these techniques is always best. Apply them in different situations. They often work well when used together in approach called *phased estimating.* Phased estimating applies the different techniques at different times – starting out with low cost, fast estimates and later, when information is more certain, going to more precise and expensive methods. It works especially well in environments where things are changing rapidly.

Here are some tips for phased estimating in a changing environment:

- Don't spend excessive time generating high precision estimates early in the project. Estimates at this time are by their nature imprecise because they are based on uncertain information.

- As uncertainty gradually decreases, re-estimate and progress to more detailed (and costly) estimating methods .
- Set clear accuracy expectations with management and the project team in each phase.

For example, the figure below shows the use of a top-down approach to create an order of magnitude estimate during the definition phase, saving the bottom-up approach for a definitive estimate later in the project.



Accurate estimating is hard, but it is an important tool in your arsenal of project management weapons. Business success requires that you deliver projects within forecasted time and budget. You must be good at estimating to do that.

About the Author

Jeff Oltmann is on the faculty of the department of Management of Science and Technology at the OGI School of Oregon Health and Science University. He is also a principal consultant at Synergy Professional Services, LLC in Portland, Oregon (www.spspro.com). Jeff welcomes your questions and ideas. You can contact him at jeff@spspro.com.

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