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# Software Estimation Without Guessing

## Effective Planning in an Imperfect World

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The  
Pragmatic  
Programmers

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Effective Planning  
in an Imperfect World



George Dinwiddie  
*edited by Adaobi Obi Tulton*

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## Effective Planning in an Imperfect World

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## Evaluating and Changing Plans

As discussed in [Chapter 1, Starting Something New, on page ?](#), a primary reason to estimate prior to starting a project is to provide those with the fiducial responsibilities with enough information to make responsible choices and plans. This need changes after the project starts, but doesn't go away. There are some who would try to freeze the decisions and plans and expect the project management to conform to those plans no matter what happens. This seems silly to me.

As time goes on, conditions change. We learn new information that gives us different insights on the data we had. The world does not stop for us. As you learn new things, you'll likely want to reconsider your plans in the light of what you now know.

## Reporting Progress to Stakeholders

We've already looked at [Chapter 4, Checking Progress, on page ?](#) for steering our project, but you might want a less detailed view when reporting progress to other stakeholders. They need to know how things are going so they can make plans and decisions at a macro level, but you don't want to invite micromanagement of work within the project. Give them the honest information they need.

If they need more detail, or the data worries them, then you can share a more detailed view with them. Most of the time, that more detailed data needs some tacit knowledge of the project to understand it. They probably don't have the time to stay up to date on the tacit knowledge of the project—hence the recommendation to give them a useful summary. If they need a more detailed understanding, it will probably be best to go over your signs of progress with them, helping them to understand the context within the project as they help you to understand the context surrounding it. Don't just give them numbers; tell them the story.

### Telling The Story

Rory, the CEO of Empire Enterprises, stopped Marion in the hallway. "Last month I heard you were releasing the new call center software to at the end of this month. Today I heard that it's not going to be complete. When will it be done?"

Marion replied, "Both of those things are true. We are releasing this month for use by the Applied Magnetics division. They have the lightest needs, and we can put the system into production there while we continue to extend it for other divisions. It will likely be suitable for the Paints and Pigments division three or four months after that. In fact, there are several divisions that will come online about the same time, once we demonstrate our confidence."

Rory looked puzzled. "Last time we rolled it out enterprise-wide all at once."

"Last time we had much lower expectations for the system. It evolved over time since then, and it's been customized for different divisions in different ways. This time we're planning for these customizations from the beginning, but not holding up those who need less customization. We're also allowing for changing priorities and unanticipated future discoveries. Would you like to see the current plan?"

## Capacity for Other Work

When we finish this project, what will we do next? Do we just wander off into the sunset, leaving the organization to attend to whatever is their primary focus? Or does the organization have other development work they want us to do?

Most modern organizations run on software. And most of them have an inexhaustible appetite for new functionality or improvements to what they have. When you finish this current project, they likely have a few items already in mind. As you work on it, they may be wondering when would be a good time to start them. Is there a good pausing point coming up on the current work so that something new can be done with minimal disruption?

"When will our current development capacity be available for these new ideas?" What will you tell them? Will you be stuck finishing all the work that was started, or can you offer them reasonable cutoff points where value has been achieved, and further work can be deferred? No one wants to be stuck in a long-term plan that no longer fits current priorities.

Whether the stopping point is at the end of the originally planned project, or somewhere short of that, the business will want to know what options they have available. Setting intermediate waypoints that are releasable offers them more options.

## Trimming Expectations

Sometimes the success of a project is judged less by what value it brings, than by whether it meets expectations. We see this behavior frequently in the stock market. If a profitable company reports strong earnings, but it's slightly below their earnings forecast, then its stock is likely to take a hit in the market. When Ebay Inc missed the analysts' consensus earnings forecast by a penny a share in January 2005, its stock price fell 19%.<sup>1</sup> People don't like negative surprises. To avoid this reaction, companies often offer guidance ahead of time to soften the blow.

1. <http://articles.latimes.com/2005/jan/21/business/fi-ebay21>

In similar fashion, it's prudent to keep stakeholders informed of significant risk to expectations. That's not to say you want to relay every tidbit of bad news to them. You do want to keep them abreast of the trends, however. And new information may trigger a reevaluation of their plans. They may have different priorities when facing the fact they might not get all they wanted.

#### Everyday Milestones

You may remember that I decided to run some errands on the way to the train station. ([Casual Sense of Progress, on page ?](#)) This made this trip to the train station somewhat different from ones in the past. Let's check in and see how this is going.

"OK, *that* took a bit longer than I expected. Let me look ahead. I should be able to get through the next three items by 10:00, and the last three by 11:00 if I skip the other ones on the list. Then I can drive to the cafe by 11:30 for lunch, and have plenty of time to make my train."

Sometimes the last items on the list aren't the lowest priority, but things you want to do last because they depend on the others. Or maybe they're things that are most sensitive to potential changes in the context around the project, so you want to delay them to the last possible moment to be able to account for the maximum amount of change. Do you remember avoiding spending the night on the side of the road in [Benefit of Headlights, on page ??](#)? Whatever the reason, it's possible that ticking off items in the planned order is not the preferred approach.

### Canceling the Project

One of the biggest and perhaps best outcomes of changed estimation of a project is that you cancel the project. If it looks that you won't achieve your objectives within the time and cost budgets you've set out, cancelling early is preferable to continuing to the bitter end. Step back and reconsider your objectives. Perhaps you can reach the same outcomes with an entirely different approach. Perhaps you should look to make an impact with different outcomes. In any event, continuing down a path that leads to a dead end is not what you want. Better to cut your losses early. (See Sunk Cost Fallacy in [Cognitive Biases, on page ?](#).)

Even if you are on track for meeting your original objectives, it's possible that new options have been discovered that are a better investment today than continuing this project. It could be worthwhile to switch to that new option now, rather than delay it.