

# REDUCING PROJECT FAILURE

## OVER-COMMITMENT AND CORRECTIVE ACTIONS

By Neil Potter

### Introduction

All projects experience some level of over-commitment at different times. When the level of over-commitment is minor or sporadic, adding a few more hours, days or resources can help. However, when over-commitment is severe or chronic and commitments cannot be met, very expensive delays and quality problems can result.

This article describes an example of how a project can check its level of over-commitment and provides some of the corrective actions that can be taken. Tailor this example to fit your needs or use it as a starting point to generate your own commitment check.

The over-commitment problem can start at the beginning of a project or develop during project execution. Over-commitment is usually due to the work being underestimated, or because the estimate communicated was adjusted to be politically acceptable.

In each case it is tempting to plod on without actually knowing where you are, hoping the end will come. A project that is over-committed faces the following expensive risks:

- a) Nothing can be finished by the deadline because it was assumed that there would be enough time to complete all the work.
- b) A very large delay is likely just before the deadline when the remaining work to be done is clear and undeniable.
- c) More money will be needed than originally budgeted, thereby reducing the profit or gain realized from the project.
- d) The product or solution will be delivered close



to the original deadline, but with very poor quality, thereby causing customer dissatisfaction and extensive rework.

These risks make the over-commitment issue worth investigating and addressing early and often in the project.

One calculation that can be done to check for over-

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## RIGHT-SIZING PROCESSES

### WHEN TO STOP DEFINING A PROCESS

By Mary Sakry

Processes can do a lot of things. They can remind people of how to do tasks, teach one about a topic, highlight areas to change to improve results, and leave a paper trail for an audit. We have always been advocates of small and useful processes over bloated and verbose ones.

When people think of process improvement, it is

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commitment is to compare the estimate of the work remaining with the resource level *actually* available. This sounds simple, but it can be quite revealing when done considering true resource availability.

Calculate the available resource time by multiplying the number of workdays remaining before the deadline by the number of people assigned to the project. Then multiply the result by the availability of each resource (e.g., 50% or 80%), keeping in mind vacations, holidays, training and work on other projects.

For example, let's suppose that your project has the following factors:

- Current project effort estimate for the work remaining = 400 effort-days (the equivalent time one person would need working full-time).
- Current planned resources = 8 people for 50 calendar-days, assuming work can be done in parallel.

The question is, are we OK? It would appear that  $8 \times 50 = 400$  days is adequate. But let us check further. After discussion with the team, we find that:

- Availability of resources is 4 people working 40% (half-time) and 4 people working 80% (full-time). This assumes that 20% is lost to meetings, emails, sickness, and unplanned distractions.
- Vacations = 8 people for 3 days (on average) between now and the deadline.
- Company holidays = 8 people for 3 days.
- Conferences and other training = 4 people for 5 days and 4 people for 3 days.
- Total available time to spend =  
     $[(4 \text{ people} \times 40\%) \times (50 - 3 - 3 - 5 \text{ days})] +$   
     $[(4 \text{ people} \times 80\%) \times (50 - 3 - 3 - 3 \text{ days})]$   
    = 193.6 effort-days
- Amount the project is over-committed by =  $400 - 193.6 = 206.4$  effort-days

In this example, the team initially thought that having eight people for 50 days would be adequate, until they factored in true resource availability. After the calculation they realized that they needed a lot more effort-days. Without a major re-plan, they will either ship an incomplete product or need

a large delay close to the deadline.

When you do your calculations, if your estimate of the work remaining is 10-20% more than the resource time you have, you might be able to recover by working one weekend-day each week, or 1.6 additional hours (20%) each day. If your work estimate is 20-30% more, then you can potentially recover and meet the deadline by working additional hours again, hiring more labor or increasing the availability of each resource. These corrective actions also assume that task dependencies don't put you over the deadline.

Recovering 25% or more time is, however, unlikely, and is the signal for a significant re-plan.

If your estimate is approximately equal to the available effort, then you have a chance of finishing, assuming that enough work can be done in parallel and you don't have a major dependency delay. However, you must minimize delays, actively manage risks and monitor the critical path to enhance your chances of staying on track.

If your estimate is 20% less than the available resources, you can reduce staffing (or their availability), accelerate the deadline, delay the start of the project, allocate more time for testing or increase scope.

When you find that you can't recover the time needed to meet the original deadline, consider the following options:

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### When over-commitment is severe or chronic and commitments cannot be met, very expensive delays and quality problems can result.

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- *Understand what need the deadline is based upon* and see if it is acceptable to deliver less scope earlier or the existing scope later. When pressed, the customer might suggest further options.
- *Check your assumptions.* Detailing the design, schedule, resource and quality assumptions reveals more potential options to make your deadline achievable. For example, you might have assumed that version 16 of component X must be used, when in fact version 15 is simpler and adequate. Share your assumptions with others for feedback.

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- *Examine the schedule's critical path.* Are there tasks or delays on the critical path that can be shortened to buy time?
- *Clarify resource availability.* Ask whether other



resources can become available (from inside the company or contracted from outside).

- *Clarify the customer's quality expectations* and determine whether the product is being over-engineered for the current release. Do you need to build a Bentley or would a Camry be a good solution for now?
- *Identify sections of the product that could be simplified and still meet customer expectations.* Involve all project team members in this analysis since they will more likely have insight. For example, does the user interface need six custom views or are two views adequate, one for the beginner, and one for the expert?
- *Investigate improvements that could relieve deadline pressure.* For example, could the unit test procedures be peer reviewed (inspected) to identify redundancies prior to test?
- *Determine sections of the project that should be purchased or built.* What work has been outsourced that could be done more quickly in-house? What work in-house should be outsourced?

Admitting and communicating that a significant re-plan is required takes much courage. As you debate when and how to tell management and the customer about the project's status, remember that the earlier you say something, the smaller the problem is, and the more time you and they have to take corrective action. Telling them the day prior to the deadline is an unwanted surprise.

## RIGHT-SIZING PROCESSES

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common to assume that a huge library of very detailed processes are required that everyone follows. To the contrary, the best process improvement effort trains people to think about processes and to modify them so that they work effectively for their project.

Let us take a risk identification and analysis process, for example. An appropriate risk identification process would be one that helps a project anticipate potential problems and take action to either prevent a problem or be ready when it materializes.

*When is a risk process adequate?* It is adequate when a project experiences fewer problems and can anticipate and head off problems. For complex or large projects, a risk process might be several pages and include calculations for risk priority, costs and mitigation plans. On the other hand, for a small routine project, a simple risk brainstorm and discussion, using a 1-10 scale for likelihood and impact might be plenty.

*When is an integration and build process adequate?* It is adequate when a project is able to perform integration and build activities and assemble products correctly. For simple systems, this might be less than a page in length. For large systems, the process definition might be 100 pages, organized with various layers of hierarchy.



So when is a process the right size? It is the right size when it can be followed and the desired result achieved. The amount of detail will depend on the skill level of the user, the complexity of the task and the risk of the intended result not being achieved.

# Practical Solutions for Your Project Challenges

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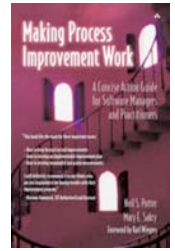
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**Foreword by Karl Wieggers**

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**References**

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