



MicroAgility Institute for Business Agility



Risk and the Estimating Process

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Table of Contents

- 1 Introduction
- 2 Risk and the Estimating Process
- 3 About Author

1 Introduction

In many cases, risk analysis is done at the end of the project initiation process, which is really too late. Risk analysis must take place from the start of the project, well before any estimates are committed. In fact, the estimating process is intricately intertwined with risk analysis.

2 Risk and the Estimating Process

As the project is developed into a Work Breakdown Structure, and is further decomposed to activities and tasks, assumptions are made about the scope of the effort, the stakeholders, and the “As Is” and “To Be” conditions. Further, the estimation of task duration, sequencing and staffing is riddled with assumptions about the staffing to be provided, timeliness of deliverables, work schedules, and competing priorities.

For example, if the project contains an on-line web component, there are assumptions about the number of screens, the number of databases to be accessed, the complexity of the interactions, the expected response times, and the number of concurrent users. Other assumptions involve the availability of a decision maker, the number of competing stakeholders with opinions to be resolved, and the number of interviews/meetings/re-meetings required to resolve key decisions. Variations in these items can cause large variations in the project cost and duration, so there is significant risk involved in the estimating assumptions.

So, how to deal with these assumptions?

One way is to take the time to carefully assess each, and resolve it prior to committing an estimate. This is an idealistic approach that usually is unworkable due to the time required, the availability of key customer resources, and the general lack of environment knowledge at the initiation phase.

A second, and recommended approach, is to record every assumption made, and treat it like a risk. This treatment should include:

- Record the risk, in as much detail as possible. Don't make it too simple. For example, don't record “Customer availability”. Rather, get specific, such as “We will need turnaround on deliverables within 3 days, and response to open issues and questions on a timely basis each week. Customer has many competing priorities and will need to devote scheduled time to the project to stay on schedule”. This makes it much clearer what the risk is.
- List your estimating assumption. In the case above, this may be that you expect the Client Sponsor to appoint a knowledgeable decision maker full time who will respond to 80% of the issues, and that the Sponsor will devote 4 hours a week to issue resolution and risk management, and also 8 hours each for 4 major deliverables, within 3 days of delivery.
- Note that the estimating assumption should match what is in your project estimate and project plan. It must be realistic. Do not assume best case. Many projects start to fall behind because the risk

assumptions were too optimistic, and did not allow for normal interruptions, difficulties, and disagreements.

- Indicate the probability of the risk exceeding the estimating assumption. High, Medium, Low is usually acceptable for this.

- Indicate the impact if the risk exceeds the estimating assumption. Clearly, this depends on the degree and your ability to manage the risk, but use your judgment to identify the risks that will have the biggest impact. Use metrics whenever possible. For example, if you think that the customer could be 1 week late on 4 deliverables, show a 4 week delay as the impact (clearly lateness in a review does not always extend the project by the same amount, since some activities can still proceed, but once again do not be overly optimistic in this estimate).

- Identify who will be responsible for managing the risk. This should not always be the Project Manager. Sometimes risks are assigned to Sponsors, Users, Managers, or Team Members, as well as the Project Manager.

Keys to successful risk management include:

1. Identify risks in detail - include all stakeholders in this analysis
2. Be realistic in estimating assumptions for each risk
3. Be specific in your mitigating actions, including assignment of tasks
4. Review risks and actions regularly
5. Escalate when mitigation for a risk is not working well enough

- List the specific tasks to manage the risk. I stress “specific tasks”. Do not say “frequent communication”, it is too vague. Instead, say “At the weekly status meeting the PM will ask the Sponsor how many hours were consumed in the past week on the project, will project activity for the next week, will ask the Sponsor if these hours are available, and will give a list of tasks to the Sponsor for the next week, with due dates. The Sponsor will give advance notice to the PM if any activity for the next week or foreseen further in the future, is in jeopardy due to competing priorities.” Also, it is a good idea to put risk management actions into the project plan, so they are tracked like other tasks.

- On a regular basis (frequency depends on the severity of the risk, and the timing within the project), review each risk and record the current status. Are the actions being taken? Are they working? Is the risk still in acceptable range? Are new risks occurring? Are new actions needed? Risks may also be closed if it is determined that the risk is fully mitigated or no longer exists.

The list of risks should be available to the team and the sponsor (with exception of any risks that are confidential which should be kept in a separate list). It should be reviewed with the team and the Sponsor, and updated to reflect the changed actions and status. In addition, any risks which are not successfully mitigated within the estimating assumptions should be converted to issues, with resolutions.

The risk register must be reviewed and updated periodically. At least monthly is a good rule of thumb, but often weekly or more is needed, if risks are severe or if there is a period of many competing priorities. In addition, some major events call for a review of the risks. A change in the Sponsor, key users, or Project Manager should always be accompanied by the review of the project, including risks. Start of a new project phase is also usually a good time to review the risks, the plan, the scope, and other project assets. Also, review your issue list periodically. Some issues may be short-term, but may hint at larger risks inherent that need to be managed.

Different philosophies exist about building contingency (slack) into the schedule, to allow for unforeseen issues, or risks that are not fully mitigated. This is dangerous for several reasons:

- Unless specifically identified as slack and managed closely, extra slack time will be consumed gradually by normal activity, and it will not be available for the intended use. It allows the team to get away from firm completion dates.
- Extra slack in the schedule usually carries extra cost as well, which will need to be approved.
- The approach of adding slack will almost certainly reduce the team's effort to manage risks, and your ability to get aggressive risk management tasking accepted.

My advice is to be very careful with your estimating assumptions, with the identification and assignment of mitigating actions, and with the tracking of these actions and risks, but do not add any contingency to the plan. If you do, identify it specifically in the plan as tasks and do not allow any time or cost to be charged to it without careful review and approval by the PM and Sponsor. In addition, implement an escalation process for risks. For example, if a risk reaches 50% of the estimating assumption for it, start to escalate it to ensure that it is properly mitigated. Escalate another level at 75% and at 90%, since it will be clear that the implemented mitigating actions are not working well enough.

So risks can become issues, and can impact the project. However, if the risks are identified at the start of the effort, during the scoping and estimation phases, then there is a better chance they can be mitigated and managed to avoid negative impact to the project. Keys are early identification, detailed analysis, reasonable expectations, ongoing management and effective escalation. Make sure that your project estimates match the project risks.

About Author:

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