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## PROJECT MANAGEMENT IN ACTION

### Risk Management on a Satellite Development Project

#### Introduction

Proactive risk management is definitely one of the key advantages in implementing and using standardized project management practices today. We always have the balancing act of managing the triple constraint of cost, time, and scope, and on top of that, we need to effectively assure project quality and that we have enough resources to do the job. In this age, we are continuously asked to optimize our performance and “be more efficient”; often, this is because we simply have too much work and not enough people to do it. So, in practice, we work with risks every day—from the risk of not spending enough time planning to the risk of not having enough supplies, or even the risk of not running a thorough enough risk management program.

Some time ago, I worked on a satellite development project that involved a lot of research technologies. There were many unknowns, with variables in the manufacture of components, integration of systems, working with subcontractors, tests, and other areas that made the project full of risk. Additionally, we were on a tight timeline for production and had only limited budget reserves available to handle cost overruns. Thus, we needed a practical way to manage and deal with the risks of the project. By systematically working with the risks of the project, we were better able to prepare responses to the risks if and when they occurred.

#### Planning

For our project, it was essential to have an integrated system and mechanism for risk management. Thus, at the outset of the project, during the planning phase, we developed our risk management plan and established with the team the process for dealing with not only risk but also any subsequent changes that could occur with the project as a result of the risk. This was done during a day-long clinic where we exclusively worked on developing this risk plan, as we knew our project was high risk and we wanted to make sure we could work with the plan. We developed criteria for evaluating probabilities of occurrence and impact for the risk and also for prioritizing risks. Furthermore, we researched and compared our

methods to industry standards for risk management such as those from SEI<sup>® 16</sup>

#### Execution

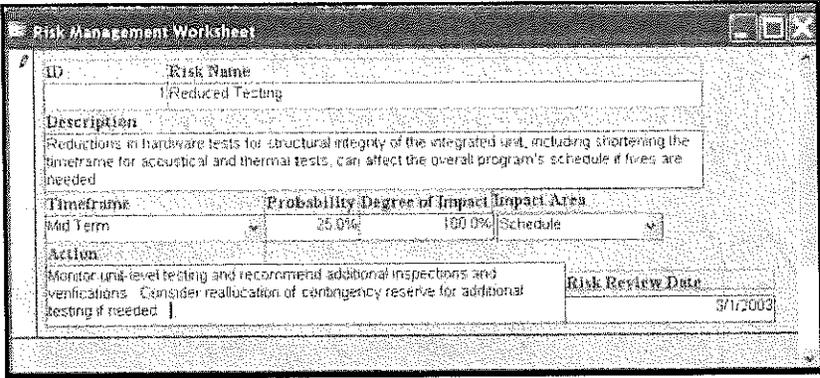
Once we had a solid approach for risk management in this project, we then went forward with the processes of identifying our project risks, analyzing the risks, developing potential responses for the risks, and deciding upon next steps for the risks. Our approach to all this was an integrated one, using a risk management database tool we developed as its cornerstone. This tool allowed for anyone in the project team to view the risks, enter new risks, and provide input for potential risk responses. An example of a similar type of tool is shown in Exhibit 10.14, where each risk is logged as a record in the database. The database allowed the team to have a single repository for recording and logging all the risks for the project, which was critically important because the risks in satellite development were constantly changing.

Every other month, the project team would hold a risk management review, in which each risk would be discussed and any decisions on actions would be made. Typically, we would meet and review the risks logged in the database in this group setting, and the risk's assigned owner would talk about the background of the risk, things that occurred since the risk was first logged (or since the last risk review), and what he or she felt the next steps needed to be. Project team members brought up other areas of the project that might have been impacted by the risk or new risks that resulted from the occurrence of the risk, or provided potential ideas for deferring, transferring, mitigating, or accepting the risk. The team also determined whether the risk decision needed to be elevated.

Another reason we held risk management reviews was to make sure that the team was up to date with the overall project's risks. Based on the criteria we defined in developing the risk management plan, the database tool provided us a prioritized report of all the project's risks. That risk report was used by the group to make decisions about the project and look at mitigation strategies for the project as a whole. The risk management review provided us with an avenue through which we could work together to resolve the

**EXHIBIT 10.14**

**RISK MANAGEMENT WORKSHEET**



ID	Risk Name		
	Reduced Testing		
<b>Description</b> Reductions in hardware tests for structural integrity of the integrated unit, including shortening the timeframe for acoustical and thermal tests, can affect the overall program's schedule if fixes are needed			
<b>Timeframe</b>	<b>Probability</b>	<b>Degree of Impact</b>	<b>Impact Area</b>
Mid Term	25.0%	100.0%	Schedule
<b>Action</b> Monitor unit-level testing and recommend additional inspections and verifications. Consider reallocation of contingency reserve for additional testing if needed.			<b>Risk Review Date</b> 8/1/2003

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high-priority risks of the project. Often, the high-priority risks were related to overall project drivers, and it was essential to be as proactive as possible in managing those risks. Moreover, by examining and analyzing the project risks in this manner, potential risks for other related projects, in this case other satellite development projects, were also identified.

The level of risk management necessary for a project can vary greatly. On the satellite development project, it was necessary to have a comprehensive program to address risk because there were many

unknowns. We performed all our duties with the notion of understanding risk, and thus the risk management program addressed both the daily needs of logging and updating risks and the long-term strategic needs of understanding risk implications. However, for a smaller or more well-defined project, having such a detailed level of risk management may be unwieldy and difficult to manage. The key is finding the appropriate level for the project at hand.

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