

PMF VIEWPOINT ARTICLE

## Risk Management for R&D Projects? Why bother?

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Have you heard that project management is impossible for research and development (R&D) projects? Imagine the look received when one suggests that risk management should be done as part of the project management of an R&D project. The look is often because one has a well-qualified researcher who is being asked to add the job of doing project management. [This issue is not part of this paper, but it too can cause a problem, as project management is not a priority.]

Just planning a budget and schedule is difficult, how can one possibly do more than that with an R&D project? I mean the whole project is a risk--end of story!

The argument given for not doing risk management is often: Budgets are trimmed and schedules compressed in industry and government. Therefore, the only risk is just the potential failure of the thesis of the planned research. Well, if this is the case, one truly does need to do the risk management planning in detail sufficient enough to ensure that either the cut does not occur or if one does, it is not detrimental to the purpose and overall results of the research.

### Introducing Risk Management

Risk management for R&D projects must be started from the conception of the idea of the research. The reason for this statement is not just that it is a good project management practice, but that part of the risk with R&D projects is the lack of clarity of the initial scope for many such projects. In many instances the project lacks defined scope breakdown. The number of total variables that the researcher may be dealing with in some cases is unknown. The total quantities of materials needed may be unknown. The list of unknowns goes on and on. Each uncertainty or unknown creates risks. Each uncertainty creates the need for a decision point and those decision points are often complicated by the fact that the decision point is one step in the handling strategy necessary for the mitigation of a risk for the project.

Once one convinces or mandates that risk management be done on an R&D project; the battle is not over. How to accomplish risk management is also an issue. Many researchers feel that the risks that should concern them are only those that are technical because those are the only ones they can impact researchers. At a bare minimum the risks can be considered to be in four categories (for ease of explaining risks to those not trained in the art and science of risk management): project, technical, internal, and external.

If the project manager/researcher only focuses upon the technical risks, at least three areas of risk are overlooked or ignored.

Within each area there are sub-categories and it is helpful to look at risks not only from the broader category of risk such as project, but to look at the risk in terms of project/schedule, project/budget, project/quality, etc. The issue with identifying the risks is that development of scenarios can be difficult. The lack of clarity of scope comes into play. If one cannot breakdown the work, breaking down the risk is made even more difficult. However, difficulty is not an excuse for not doing the risk categorization.

As part of the introduction to risk, the researcher/project manager must be informed as to the necessity to maintain, update, and literally take risk management to heart. The R&D project manager must believe that a risk management plan, along with the project management plan or project execution plan, is a living document that needs to be updated periodically and used to guide the project.

One way the risk management plan can guide the project is to allow the researcher/project manager to communicate in a learned fashion about risk to his or her stakeholders.

### It Can Save the Project Funding

Given all the difficulties, why bother? One bothers because the risk management plan is one of the finest communication tools and methods available to both the researcher and project manager. The risk management plan cannot sit on the shelf, as a check in the box of a procedure that is required. The ability to use the plan to explain to management and other decision-makers about the project and various issues to be faced cannot be understated. In many cases the funding for the project may depend upon the ability of the funding agency or sponsor to understand the risks. The risks to be understood are not just technical. Projects are not cancelled solely because the results are not indicative of what was anticipated or predicted. Projects are cancelled for such issues as schedule delays, the need for more budget, lack of understanding of contract change impacts, failure to keep documents current to the sponsor, and so many more reasons that all are a result of a risk coming to fruition.

Communicating risks can save the project from the budget axe. The understanding of a sponsor especially about how their actions impact research is especially critical. A lack of understanding, for example, of what it means to the usability of data if one restricts the number of runs of sampling, or what it means if one cuts a piece of the project (such as a field test), is all too common. This often explains the reason that cuts actually occur.

## Conclusion

The time spent using the risk management plan to communicate the risks that are attendant to an R&D project is literally, in many cases, money in the bank. The ability to allow sponsors or funders to understand the impacts of their actions on the project for which they have some ownership can go a long way toward ensuring that detrimental actions are not taken.

The gap that remains is that just following a text book recipe for how to construct and compile a risk management plan cannot convey adequately how to use the plan. All the textbook language cannot take the place of experience with risk management planning and communicating.



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