

PRODUCT REVIEW

Microsoft Project as a Risk Management Tool

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INTRODUCTION

The software discussed here is Microsoft® Project 2010 Professional (MPP) along with several ‘add-in’ risk management products. This review focuses on applied risk management theory (it is assumed the reader will look at trade magazines for detailed features and technology requirements). Different versions of MPP (and companion products) are available on the market. MPP is a popular project management software tool; the 2010 version is the best upgrade in more than a decade (Essex, 2010). MPP is available in both 32-bit and 64-bit options. The 64-bit version was used for testing the product in this review.

LITERATURE REVIEW

Risk management is an important aspect of project management (Merna & AL-Thani, 2008). Risk management involves three processes, namely, risk analysis, risk mitigation, and controls evaluation (Rainer & Turban, 2008). MPP is a popular project management software application used by project managers. MPP also

has several risk management features and tools that could be quite useful for project managers.

The purpose of risk analysis is to identify the probability of the occurrence of a risk and its potential impact on a project (Marchewka, 2009). Risk analysis tools address either one or both categories of risk analysis techniques, namely, qualitative and quantitative. Qualitative methods compare the relative significance of risks facing a project in the context of the effect of the occurrence of the risk on the outcome of the project, while quantitative risk analysis techniques involve sophisticated analysis intended to determine absolute value ranges together with probability distributions for the project outcome (Merna & AL-Thani, 2008).

One of the main advantages of using MPP for risk management is the availability of a number of companion products including @RISK, Full Monte, OmniSys, PertMaster, P2MSP, RiskyProject, and TimeArrow, among a host of other products (Glen, 2011). According to Patanakul, Iewwongcharoen, and Milosevic (2010), the important risk management features offered by project management tools include Monte Carlo simulation, decision tree analysis, risk ‘check list’ production, SWOT analysis, Delphi, project risk audits, and earned value management.

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RESULTS AND DISCUSSION

Recently I downloaded and installed the 64-bit version of MPP. I successfully tested that version for this review on Windows 7. This software is available for free download for academic institutions that are part of Microsoft's MSDN Academic Alliance program (<http://www.dreamspark.com/>).

Different modeling techniques are used to describe or quantify the magnitude of a specific risk. One of the most commonly used methodologies is Monte Carlo simulation, which is used for incorporating a risk factor structure and probability distribution model to quantify uncertainty (Kerzner, 2009). @RISK is a Project Management Institute (PMI)-approved tool supported by MPP. @RISK for MPP uses Monte Carlo simulations to show possible outcomes as well as their likelihood of occurrence in the project ("@Risk for Project," 2012).

RiskyProject is another companion product that can be integrated with MPP. RiskyProject provides support for both qualitative and quantitative risk analysis techniques ("RiskyProject Professional 4.2," 2012). RiskyProject also provides support for performing Monte Carlo simulations. The availability of additional open-source companion products such as the Monte Carlo simulation (MCS) provides significant advantages to MPP over using other software tools for project management.

Sensitivity analysis is a quantitative risk analysis technique used to determine the effect of changing one of the risk variables on the complete project. This method helps identify the risk variable with the highest impact on the cost or timeline of a project. MPP provides support for sensitivity analysis through third party companion products. Barbecana's Full Monte is one such third-party companion product for risk analysis that provides seamless integration with MPP (Barbecana Inc., 2012). This companion product not only provides support for Monte Carlo simulations but also other quantitative and qualitative risk analysis techniques such as probabilistic risk analysis, sensitivity analysis, risk mapping matrix, and schedule analysis.

Scenario analysis is a variation (and improvement) to sensitivity analysis, whereby multiple risk variables can be changed in a project (based on probability distributions or deterministic values), so as to estimate the expected outcome under different conditions. @RISK also provides support for scenario and sensitivity analysis ("@Risk for Project," 2012).

After risks are analyzed, the project manager needs to consider how to mitigate the risks associated with a project. The risk mitigation process involves two functions, namely, implementing controls to prevent re-occurrence of the identified threats and providing a means for recovery if these threats do occur. MPP has some project management features that can be indirectly used for risk management. For instance, the "Inactive Tasks" feature of MPP can be used for risk mitigation because a project manager can add all the risks in the project by indicating them as inactive tasks, and then simulate their activation to quantify the schedule impact as though the risk occurred (Webb, 2010). In this way, the risks are an integral part of the project plan, and as and when the risk occurs, the project manager can update the plan. The inactive tasks feature of MPP also allows a project manager to do what-if analyses to assess the impact of potential changes in project schedules (Makar, 2011). In this way, a project manager can view the outcomes of schedule changes in a project without actually making changes in the original data.

Project managers can also benefit from the support for collaboration provided by the professional edition of MPP with integration to Microsoft® SharePoint. In this way, a project manager can share the project plan with members of the team. This would allow the project team to be aware of the project plan, the identified risks, and the risk mitigation strategies in place.

Some of the risk analysis tools available with previous versions of Microsoft Project are no longer available with MPP. The most significant change is the removal of the Program Evaluation and Review Technique (PERT) analysis add-in ("Changes in Project 2010,"

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