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Establishing a Risk Reserve

By Daniel Galorath

A Risk Reserve is the additional amount of time, money, or personnel required to fund mitigation activities that will take a program to successful completion. A risk reserve may be built into the estimates by setting the probability within parametric models. When the estimate is allocated to specific activities and elements of a project and the associated costs are accounted for and budgeted through the work breakdown structure, a reserve should be established to address potential problems.

The project manager should use a disciplined and comprehensive method to assess project risk in the estimate. Estimates of the required reserve should be defined and quantified throughout a project's life cycle as specific risk elements that can be used to provide adequate risk reserves.

By keeping and managing a risk reserve, an organization can fund mitigation activities and react to risks that transition to problems. Management must understand that the processes and costs associated with risk management are extremely cost-effective, while the cost of mitigation can be significant. When the cost of risk management is balanced against the cost of mitigation, both in dollars and reputation, risk management is a bargain.

A risk reserve should be managed and always address reality. The risk officer should offset the projected cost of mitigation by the number of risks and then recommend a reserve to management based on these calculations. The reserve should account for unanticipated or worst case risks and be stated as one of three ranges: optimistic, most likely, and pessimistic. The risk reserve should include the costs of the resources required to identify and manage critical and high risk areas and also include all projected estimates through risk resolution. The reserve should be a true management asset owned by the manager and it should include funds, resources, and potential staff required to address risks and their potential effects.

Management should frequently reassess the reserve, identify resources allocated to handle contingencies, and adjust the amount to account for mitigation costs. Management should also frequently analyze new requirements for the reserve, manage requirements creep, and account for potential expansion of work and its cost and schedule impacts. The risk reserve should be reevaluated and updated as risk assessments occur and account for such factors as:

- Time — Add to the schedule a percent above the estimated time to delivery based on risk of delivery.
- Money — Increase budget to include potential additional staff, tools, and time to potential project costs.

- Staff and potential staff — The personnel organization should continue to interview for good people and establish second sources for single point staff risks.
- Resources — Identify second sources and mitigate key resource risks.



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Daniel D. Galorath has over 35 years of experience in the software industry where he has solved a variety of management, costing, systems, and software problems, and performed all aspects of software development and management. Mr. Galorath is founder and president of Galorath Incorporated, maker of the SEER®; suite of estimation tools; Mr. Galorath is one of the principal developers of the SEER-SEM™; Software Estimation Model. Mr. Galorath completed his undergraduate work and MBA from California State Universities. He is a member of the International Society of Parametric Analysis (ISPA), Society of Cost Estimation and Analysis (SCEA), IEEE, the International Function Point Users Group (IFPUG), and the Association of Computing Machinery (ACM). He was honored with the Freiman Award, recognizing his long-term contributions to the field of parametric analysis. Mr. Galorath teaches courses in software cost, schedule, and risk analysis; software project management; software engineering; systems architecture, and other related topics. He has lectured internationally and is the author of many papers about software project management. Mr. Galorath can be reached at: info@galorath.com

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