Crosswind Learning

Version 6.1 Updated for the 2021
Project Management Professional (PMP)® Exam

Crosswind Success Series: PMP® Exam Bootcamp Manual

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Version 6.1 aligned with the Project Management Institute, *A Guide to the Project Management Body of Knowledge, (PMBOK® Guide)* - Sixth Edition, Project Management Institute Inc., 2017

14.4. Perform Qualitative Risk Analysis (Planning Process Group)

Know the Key Inputs, Tools & Techniques, and Outputs for Perform Qualitative Risk Analysis.

During the Perform Qualitative Risk Analysis process, **risks are analyzed for probability and impact**. Such analysis provides an overall risk ranking for the project based on the evaluation of each identified risk (both probability of occurrence and impact are rated as high, medium, or low).

A numeric value can be assigned to specific project parameters to ascertain a total score. Parameters may include the duration of the project and the number of people on the project team. Historical information can provide past experience the team and/or organization has had on similar projects.

When the risk analysis is complete, depending upon the score of the project, the risk range can be determined (for example, 0-5 low risk, 6-10 medium risk, 11-15 high risk), based upon the combined score of all evaluated risks. Reference Figure 14-8: Probability and Impact Matrix in section 14.4.1 for a sample matrix.

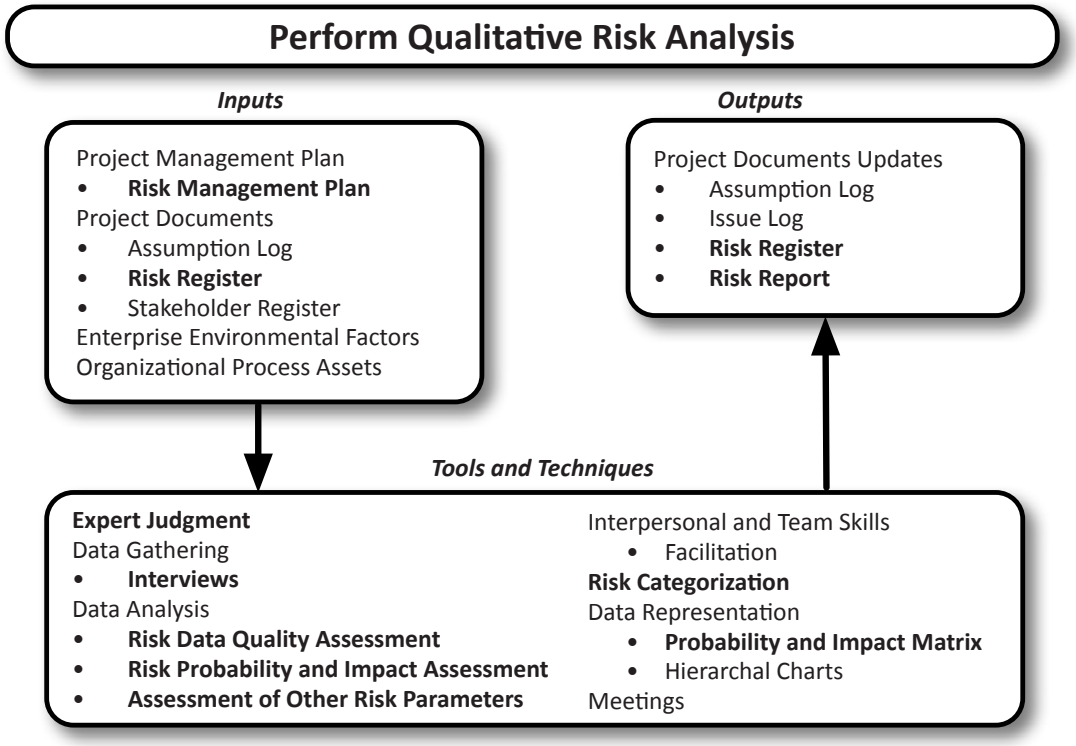

Figure 14-7: Perform Qualitative Risk Analysis Data Flow Diagram

The source for the above figure is the Project Management Institute, *A Guide to the Project Management Body of Knowledge*, (*PMBOK® Guide*) – Sixth Edition, Project Management Institute Inc., 2017, Figure 11-8, Page 419

Perform Qualitative Risk Analysis (Planning)		
Key Inputs	Risk Management Plan	The risk management plan is a component of the project management plan that details the manner in which risk management activities are configured and implemented. It addresses roles and responsibilities, financing (the budget for risk-related activities, contingent reserves, and management reserves), timing of risk processes, risk classification for grouping individual risks (typically, this is accomplished by using a risk breakdown structure), the probability and impact of individual risks (often supported by a probability and impact matrix), and the risk thresholds of individual stakeholders.
	Risk Register	Each identified risk is recorded in the risk register. It typically includes the potential owner of and potential response(s) to each identified risk and may include a title, category, status, cause(s), trigger(s), impacted activity(ies), date(s) of identification, date range for probable occurrence, and response deadline(s).
Key Tools & Techniques	Expert Judgment	Expert judgment is judgment based on expertise acquired in a specific area. It is often more significant and accurate than the best modeling tools available and can be provided by stakeholders, company personnel external to the project, professional organizations or groups, and consultants. It is important to consider expertise related to prior, comparable projects, and qualitative risk analysis.
	Interviews	Interviews are direct elicitations of information and can be formal or informal. Typically, the interviewer asks questions of the interviewee and records the responses. If the interview is structured or semi-structured, the responses can be utilized to estimate the probability and impact of individual risks on the project. Note that the interviewer should nurture an accepting and confidential environment so that the responses are candid and impartial.
	Risk Data Quality Assessment	The risk data quality assessment determines the extent to which individual project risk data is correct and trustworthy. One method of assessing the risk data is to have stakeholders complete questionnaires regarding their perceptions of individual risk characteristics, including relevance, pertinence, and comprehensiveness.

Perform Qualitative Risk Analysis (Continued)		
Key Tools & Techniques (Cont.)	Risk Probability and Impact Assessment	The risk probability and impact assessment is utilized to determine the probability that each identified risk will occur. The possible effect on one or more project objectives (schedule, budget, performance, and/or quality) is considered during the assessment. Typically, the assessment also indicates if each risk is an opportunity or threat. Probabilities and impacts are often assessed in accordance with the risk management plan during a meeting or interviews with knowledgeable participants. The level of probability, along with any assumptions that justify the assigned level, are recorded. Risks with low probability and impact may be added to the risk register for future tracking. Risks can be grouped by priority based on probability, then impact.
	Assessment of Other Risk Parameters	In addition to probability and impact, other parameters may be assessed during the prioritization of risks for further action and assessment. Factors such as **criticality**, **immediacy**, **latency**, **manageability**, **governance**, **discovery**, **connection to other risks**, **strategic impact**, and **importance** are considered.
	Risk Categorization	Risk categories are assigned to individual risks in accordance with the categories detailed in the risk management plan. Categorizing risks can lead to more effective responses, since generic responses can be devised for groups of related risks. If risks are grouped by probability and impact using the risk breakdown structure (RBS) or other device (budget, roles and responsibilities, or phase), the team can concentrate on devising responses for risks that subject the project to the highest risk exposure.
	Probability and Impact Matrix	The probability and impact matrix is a grid utilized to delineate the probability of each risk occurrence and the effect on project priorities (in terms of time, cost, and performance) should the risk occur. Risks can be grouped by priority based on probability, then impact (the risk score is derived by assigning numeric values to probability and to impact, then combing those values). Typically, the matrix also indicates if each risk is an opportunity or threat.

Perform Qualitative Risk Analysis (Continued)		
Key Outputs	Risk Register	Each identified risk is recorded in the risk register. The register typically includes the potential owner of and potential response(s) to each identified risk and may include a title, category, status, cause(s), trigger(s), impacted activity(ies), date(s) of identification, date range for probable occurrence, and response deadline(s). It is updated with new information related to each risk, including the probability and impact evaluation, priority level, score, owner, urgency, and category.
	Risk Report	The risk report details the origins of overall project risk and recaps key data about unique project risks (typically the number of threats and opportunities and other summary metrics). It is updated with information related to risks with the highest risk scores. The risk report also includes a prioritized catalogue of all identified risks and a brief overview of project risk.

Situational Question and Real World Application

Failure to effectively address the Perform Qualitative Risk Analysis process may lead to an inability to appreciate the impact of a risk and/or a failure to execute risk responses effectively or in a timely manner.

14.4.1. Probability and Impact Matrix

Figure 14-8: Probability and Impact Matrix can be used to evaluate the impact of a risk and the probability of its occurrence. The probability scale is on the left, and the impact is shown in the bottom-most row. The result of multiplying the impact by the probability is displayed in the intersecting cell. For example, .09 in row 2, column 3 represents the multiplication of the impact (0.1 in the final row, column 3) by the probability (0.9 in row 2, column 2). Depending upon the scoring, the risk could be viewed as low, medium, or high.

	Opportunities						Threats						
Probability	0.9	0.09	0.225	0.45	0.675	0.81	0.81	0.675	0.45	0.225	0.09	0.9	Probability
	0.75	0.075	0.1875	0.375	0.5625	0.675	0.675	0.5625	0.375	0.1875	0.075	0.75	
	0.5	0.05	0.125	0.25	0.375	0.45	0.45	0.375	0.25	0.125	0.05	0.5	
	0.25	0.025	0.0625	0.125	0.1875	0.225	0.225	0.1875	0.125	0.0625	0.025	0.25	
	0.1	0.01	0.025	0.05	0.075	0.09	0.09	0.075	0.05	0.025	0.01	0.1	
	Impact>	0.1	0.25	0.5	0.75	0.9	0.9	0.75	0.5	0.25	0.1		

Figure 14-8: Probability and Impact Matrix

The source for the above figure is the Project Management Institute, *A Guide to the Project Management Body of Knowledge*, (*PMBOK® Guide*) – Sixth Edition, Project Management Institute Inc., 2017, Figure 11-5, Page 408

A matrix such as this can be used to analyze each risk, and then create an overall risk ranking for the project. An accurate score is predicated on unbiased and accurate matrix data.

The source for the above text is the Project Management Institute, *A Guide to the Project Management Body of Knowledge*, (*PMBOK® Guide*) – Sixth Edition, Project Management Institute Inc., 2017, Pages 419-427