Crosswind Learning

Crosswind Success Series:
PMP® Exam Bootcamp Manual

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Power Type	Definition
Risk Power	Risk power employs **calculated risks in negotiations** to achieve project goals. Refusal to move from a negotiating position can limit success during negotiations. It is also important to know as much about the negotiation environment as possible.

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 312-320
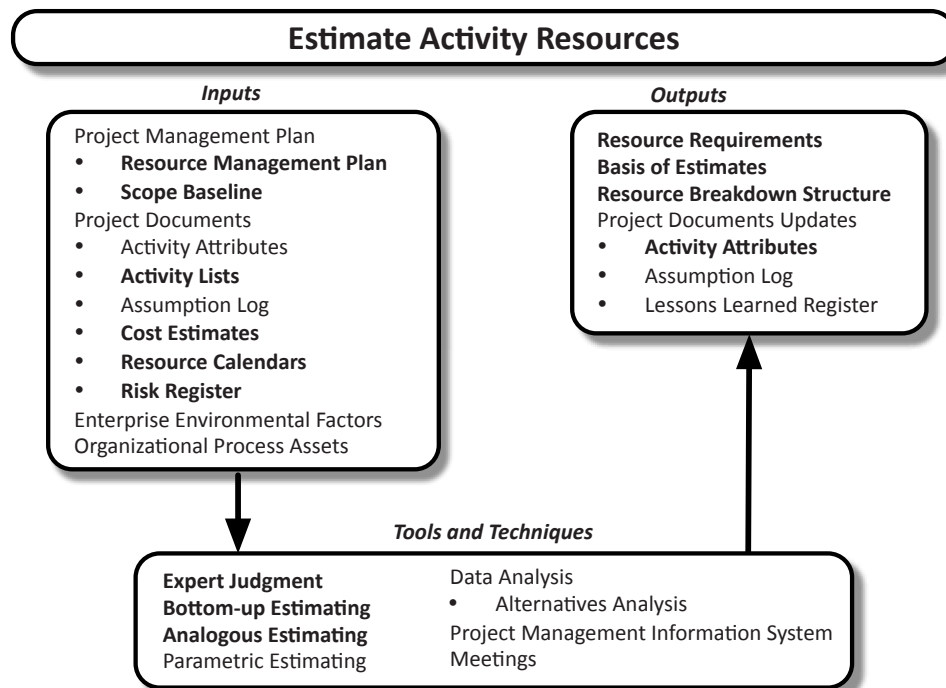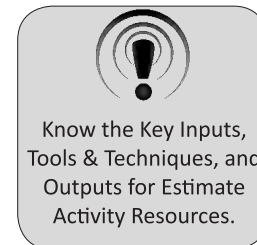
5.2. Estimate Activity Resources (Planning Process Group)

During the Estimate Activity Resources process, **all of the resources required for the project are determined. The amount and type of personnel, material, and equipment** should be carefully examined so the results of this process are as accurate as possible.

Know the Key Inputs, Tools & Techniques, and Outputs for Estimate Activity Resources.

Estimate Activity Resources

Inputs

Project Management Plan
- **Resource Management Plan**
- **Scope Baseline**

Project Documents
- Activity Attributes
- **Activity Lists**
- Assumption Log
- **Cost Estimates**
- **Resource Calendars**
- **Risk Register**

Enterprise Environmental Factors
Organizational Process Assets

Outputs

Resource Requirements
Basis of Estimates
Resource Breakdown Structure
Project Documents Updates
- **Activity Attributes**
- Assumption Log
- Lessons Learned Register

Tools and Techniques

Expert Judgment
Bottom-up Estimating
Analogous Estimating
Parametric Estimating

Data Analysis
- Alternatives Analysis

Project Management Information System
Meetings

Figure 5-6: Estimate Activity Resources 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 9-5, Page 321

Estimate Activity Resources (Planning)		
Key Inputs	Resource Management Plan	The resource management plan is a component of the project management plan that documents: the manner in which the team and physical resources are determined, quantified, and acquired; resource roles, responsibilities, authorities, and competence (skill and capacity); project organizational charts; team resource management (definition, management, control, and release); team training; team development; and control of physical resources (availability and acquisition).
	Scope Baseline	The scope baseline is the authorized version of project scope. It contains the project scope statement, the work breakdown structure (WBS), the work package, one or more planning packages, and the WBS dictionary. It describes the work the project is trying to complete and is subject to change management and is a component of the project management plan. The scope baseline necessitates the need for team and physical resources.
	Activity List	The activity list enumerates each schedule activity stipulated for the project. It identifies those activities that need resources. Note that project managers commonly call activities "tasks," but the term "activities" is generally more appropriate according to Project Management Institute, Inc. standards. If rolling wave planning or agile is used the list must be reviewed regularly and updated as necessary.
	Cost Estimates	Cost estimates include quantitative estimates of work completion costs, contingency reserves for identified risks, and management reserves for unidentified work. The estimates consider all resources involved including direct labor, equipment, material, facilities, exchange rates, information technology, financing costs, inflation allowance, and/or a cost contingency reserve. Costs associated with resources may impact resource selection.
	Resource Calendars	Resource calendars delineate project resource accessibility and are referenced to estimate resource utilization.
	Risk Register	The risk register documents identified project risks and should be referenced to determine the risks that impact the selection and availability of resources. The volume of documentation varies in accordance with the size and complexity of the project. Typically the risk register includes the list of risks sufficiently described to ensure clear-cut understanding, the risk owner for each risk, and the response(s) for each risk.

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Estimate Activity Resources (Continued)		
Key Tools & Techniques	Expert Judgment	Expert judgment is judgment based on expertise acquired in a specific area. It is important to consider expertise in planning and estimating teams and physical resources.
	Bottom-up Estimating	Bottom-up estimating is an estimation technique in which duration or cost is determined by rolling up estimates of each WBS component of the item being estimated. The size and complexity of the item being estimated impacts the cost and accuracy of the estimation. Team and physical resources are estimated at the activity level and aggregated to the work package level, the control accounts level, and the summary project levels.
	Analogous Estimating	Analogous estimating is a high-level estimation technique based on historical resource data from a similar activity or project. The technique adjusts for known variances in complexity from the current activity or project under consideration and the historical activity or project. Analogous estimating is typically used to estimate a value or values in projects where there is a limited amount of detailed data and can be used to estimate the entire project or a portion of the project. While this technique costs less and is not as time consuming as more detailed techniques, it is typically not as accurate.
Key Outputs	Resource Requirements	Resource requirements define the types and quantities of team and physical resources needed for a work package or for each activity in a work package. This can then be aggregated to calculate the estimated resources for each work package (if the basis for aggregation is the activity), work breakdown structure (WBS) branch, and the project. Exhibits typically include the basis of estimate for each resource and the assumptions made as to the resource type, availability, and required quantities.
	Basis of Estimates	The basis of estimates for resources includes documentation that delineates the manner in which the estimates were determined, assumptions and constraints, resources used to evolve the estimate, range of estimates, risks that impacted the estimate, and degree of certainty in the estimate.

| Estimate Activity Resources (Continued)		
Key Outputs (Cont.)	Resource Breakdown Structure	The resource breakdown structure (RBS) is a graphical representation of resources by category and type displayed in hierarchical order. Categories may include, but are not limited to labor, equipment, supplies, and material. Types may include, but are not limited to skill level, grade level, and required certification.
	Activity Attributes	Activity attributes clarify an activity by identifying multiple components related to the activity. The components evolve during the project: during the initial stage, they include a singular activity identifier, a WBS identifier, and an activity label; when completed they typically include a description of the activity, predecessor and successor activities, logical relationships, leads and lags, resource requirements, constraints, assumptions, and exact dates. They are used to clarify reporting.

Situational Question and Real World Application
Failure to effectively perform the Estimate Activity Resources process can result in serious schedule slippage. Reasons for slippage can include a lack of sufficient personnel, a lack of personnel with the appropriate skills sets, and a lack of access to material or equipment appropriate to the project.

5.2.1.   Resource Breakdown Structure

The resource breakdown structure displays the breakdown by resource type across an organization. This breakdown makes it possible to distinguish where resources are being used regardless of their organizational group or division.

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The example in Figure 5-7: Resource Breakdown Structure Sample depicts classrooms and teachers during the fall semester. The fall semester represents the common criteria.

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                    ┌──────────────────────┐
                    │ Resource Breakdown   │
                    │ Structure (RBS) for  │
                    │    Fall Semester     │
                    └──────────────────────┘
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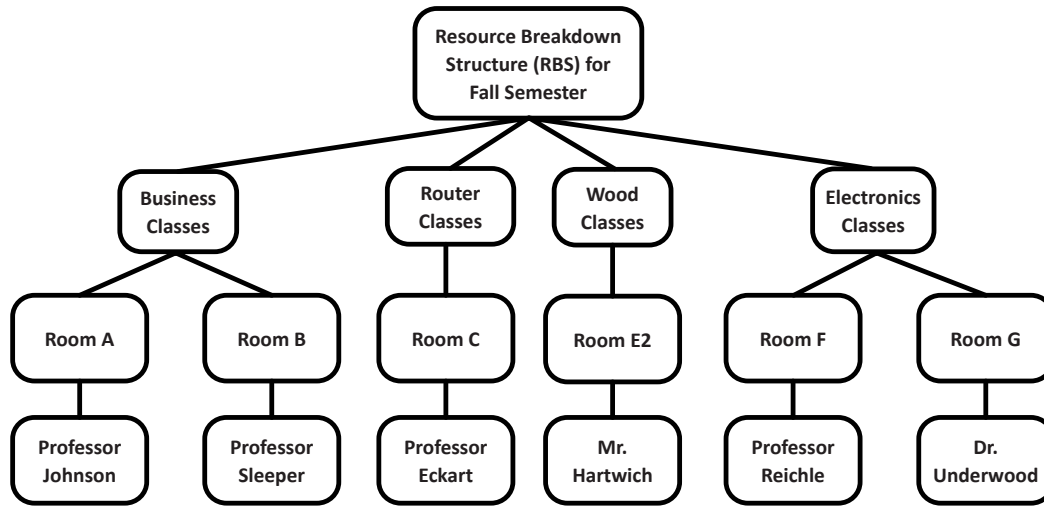
Figure 5-7: Resource Breakdown Structure Sample

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 9-7, Page 327

Because this information can include non-HR resources, as well as personnel, there is the potential to track project cost especially if the RBS aligns with the organization's accounting system.

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 321-327

5.3.   Acquire Resources (Executing Process Group)

Project staffing and physical resource needs are satisfied during the Acquire Resources process. **The actual resources that will be working on the project are assigned to the project.**

Factors to consider include cost, ability, experience, availability, and interest of resources.

Know the Key Inputs, Tools & Techniques, and Outputs for Acquire Resources.