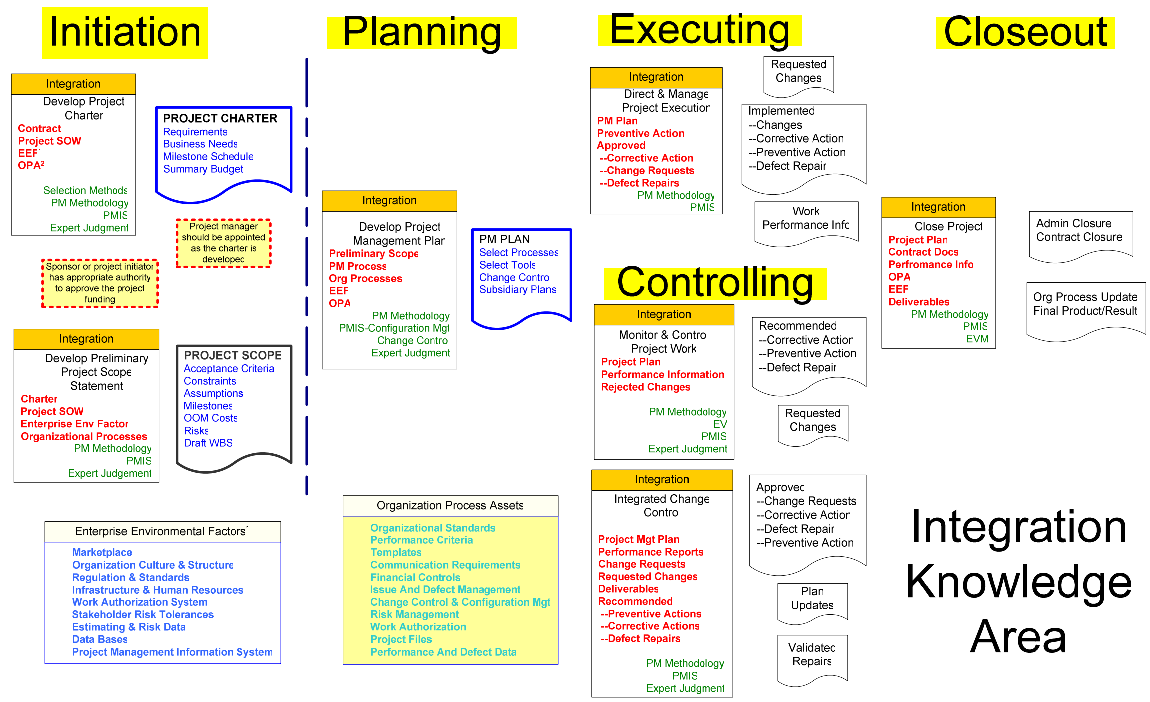
INTEGRATION MANAGEMENT

The integration knowledge area is the largest knowledge area, with seven processes and at least one process in every process group. Integration is the where a PM on a small project steps back to make sure everything makes sense. On a bigger project, the PM uses the integration processes to tie together the work done by different groups of people involved in all the other processes. With that kind of a "Big Brother" role, integration processes take place continuously throughout the life of the project, from Initiating through Closing. The Integration processes and the process group where they occur are:

- ☑ Develop Project Charter (Initiating)
- ☑ Develop Preliminary Scope Statement (Initiating)
- ☑ Develop Project Management Plan (Planning)
- ☑ Direct and Manage Project Execution (Executing)
- ☑ Monitor and Control Project Work (Monitoring and Controlling)
- ☑ Integrated Change Control (Monitoring and Controlling)
- ☑ Close Project (Closing)

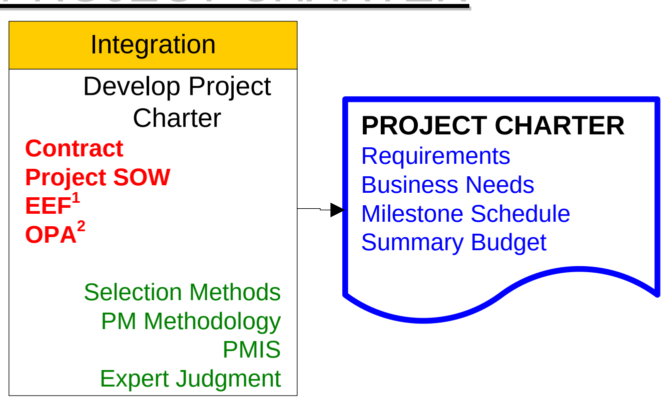
The seven processes, beginning with Develop Project Charter and ending with Close Project, envelop the other processes within the PMBOK®. Integration encompasses the formal authorization of the project and the generation of the scope statement. We monitor and link all the processes in project plan development. When we begin to execute, integration oversees the project work and triggers all the corrective and preventive action. Integration tracks all our change requests through approval or rejection until we finish the project. Finally, the project ends with an integration process where we archive the data and take a look a how we have done.

Integration also utilizes the organization's project management policies, procedures and methodology. The project manager and project management team has the responsibility to integrate these tools and select the appropriate processes and procedures. The PM and team tailor these factors according to the project's size, scope and needs.



Now let's look at each of these processes to learn the inputs, tools and techniques, outputs and perhaps most important of all, the "PMBOK® attitude" you need to adapt to pass the exam and to do project management the "PMBOK® way."

DEVELOP PROJECT CHARTER



In project initiation, we have integration processes for generating the charter and preliminary scope statement. The sponsor begins the process by producing the statement of work and then guides the project through the organization's approval process, gains authorization for the project, appoints the project manager and identifies outcomes that the project should produce. The key idea here, and what may be most different from your experience, is that the project sponsor develops the project charter. The sponsor will proceed through this process using knowledge of the organization's culture, customer and operations. The sponsor uses <u>organizational process assets</u> (OPAs) such as procedures for submitting new projects for approval, which might include forms and templates, as well as financial procedures that detail the level of payback or the return on investment that new projects must meet. In chartering, there is emphasis on the financial aspects of the project in order to gain approval from the organization.

The sponsor or project initiator drives the chartering of a project and issues the project charter. Prior to that authorization, the project must pass through the organization's project selection criteria approval process, including the benefit measurement process to determine whether it is financially prudent to undertake the project. Once the organization has approved the project, the sponsor or initiator issues the project charter. Within the charter, the sponsor should appoint the project manager and give that individual authority to use organizational resources. The sponsor also outlines the project's constraints like a required completions date or limitations on resources that the project can use. As well, the charter describes the assumptions made about factors such as inflation rate, or customer reaction to a voice mail system. These constraints and assumptions form a boundary within which all the other planning processes will take place. The charter also details the project's function or justification, stakeholder requirements, any major project milestones, as well as a summary project budget.

INPUTS TO DEVELOP PROJECT CHARTER

There are some very significant inputs to develop the project charter. The first and most important input is the statement of work (SOW). It describes the characteristics of the output or deliverable the project is to create and it spells out the relationship between the statement of work and the business need it fulfills. The initiator or sponsor produces the SOW not the project manager.

Questions on the PMI® certification exams about the statement of work are difficult for many project managers because their work on a project usually does not start with such a succinct description of what the project should achieve. Nor are all PMs accustomed to seeing written justifications for the project. However, to correctly answer the exam questions, you must put yourself in the PMBOK® world. The statement of work is the first of many situations where your experience may differ from the ideal world of the PMBOK®. PMI® bases the exams on how organizations and project managers should manage projects. To pass the exam you will have to adopt the PMBOK® mindset.

Another key charter input which we will again and again is the organization's enterprise environmental factors(EEFs). These conditions that surround the project include existing arrangements, procedures or attitudes that affect project success. The EEFs include:

Enterprise Environmental Factors[1]
Marketplace **Organization Culture & Structure** **Regulation & Standards** **Infrastructure & Human Resources** **Work Authorization System** **Stakeholder Risk Tolerances** **Estimating & Risk Data** **Data Bases** **Project Management Information System**

The organizational process assets (OPAs) will also appear repeatedly as inputs to many processes including the charter. The OPAs are an organization's standard ways of doing business, its forms and templates and standard criteria for making decisions. OPAs include:

Organization Process Assets
Organizational Standards Performance Criteria Templates Communication Requirements Financial Controls Issue And Defect Management Change Control & Configuration Mgt Risk Management Work Authorization Project Files Performance And Defect Data

The fourth input is the contract that may replace the SOW for projects done for a client organization. You should note that not all projects will have this input. However, if an outside organization requests the project or if a consulting firm does the project, a contract with the customer provides to key information needed to develop the charter.

TOOLS & TECHNIQUES OF DEVELOP PROJECT CHARTER

In chartering a project, the sponsor or initiator will use a number of techniques. Project selection methods utilize the criteria that the organization has established for approving new projects. The point of this step is to ensure that we use organizational resources effectively and that all approved projects yield an appropriate amount of value or benefit in relation to their cost. The evaluation criteria are the financial and operational standards that a project must meet to gain organizational approval. Once again, your organization may not follow this process but if it doesn't, you know the chaos that results when anyone can launch a project on a whim.

The evaluation methods range from straightforward to complex. We may simply measure the project's benefits, by comparing the benefits to the costs. Calculating the payback period gives a measure of time that a project takes to repay its cost. For example, a project that costs $35,000 and generates $10,000 of benefit a year would have a 3.5-year payback period. Another measure for evaluation is the benefit/cost ratio. Using that same example, if the project above has a 5-year life, it would have a benefit/cost ratio of 1.42 (50,000/35,000). Projects with a benefit/cost ratio less than 1.0 return less value then their cost.

More complex evaluation methods may include mathematical models, often called constrained optimization, with analysis of a project using linear or dynamic programming models.

The sponsor/initiator also uses expert judgment to help develop the project charter. The source for expert judgment can be project stakeholders, including management, or previous project team members. During chartering, it's important to gather information from as many people as possible to make sure we have gathered all the requirements for the project. That way surprise requirements are less likely to surface later.

If the organization has a project management methodology, the methodology can also serve as a tool to develop the project charter. Project management methodologies run the gamut in degree of formality and rigidity. For instance, we may have an organization with a project management methodology with a loose outline of what the charter must include. On the other hand, some organizations have a very formal, step-by-step set of instructions and guidelines all charter development must follow.

A final tool to aid in chartering is the project management information system (PMIS). The PMIS is an organization's way of automating and/or organizing project information. When used in project charter development, the PMIS can provide a template used by the sponsor/initiator to develop the charter, collect feedback on the charter, and track charter revisions until the sponsor gains final approval of the charter.

OUTPUTS FROM DEVELOP PROJECT CHARTER

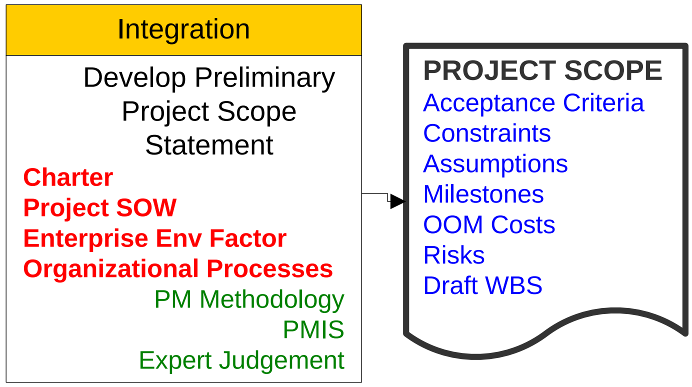
Project charter development has only one output, the charter, which is the document that formally authorizes the project. The sponsor or project initiator issues the project charter, as they have sufficient authority to appoint the project manager and give that PM authority over project resources.

The project charter can include a number of components. It should outline the business need for the project as well as its purpose. We should include a project justification and the assumptions and constraints that emerged from discussions with stakeholders. The assumptions are aspects of the project that we consider correct or accurate, and we will test these later in risk management. The project constraints may come from an executive who puts a limit on the cost of the project or the resources the PM can use.

FIGURE 5 CHARTER COMPONENTS

- ☑ The assignment of the project manager
- ☑ The purpose of the project
- ☑ The business need the project will meet
- ☑ The objectives
- ☑ The justification for doing the project, such as:
  - Market demand or customer request
  - Business need, including return on investment
  - Technology advance
  - Legal requirement
  - Social need
- ☑ A summary budget

DEVELOP PRELIMINARY SCOPE STATEMENT



The project manager or project management team spring into action once the sponsor issues the charter. We'll use the phrase "project management team" to mean the project manager and the other members of the project team who will manage the project. We may have Certified Project Management Associates (CAPM™) assisting a project manager as well as experienced team members or multiple PMs working together. This project management team will begin the scope definition work by taking the charter and SOW from the sponsor and elaborating it into a preliminary scope statement. This process leads into the scope management area where the project management team will further elaborate the scope statement and then decomposes it into the work breakdown structure.

DEVELOP PRELIMINARY SCOPE STATEMENT: INPUTS

The inputs used in this process are the charter and statement of work produced by the project sponsor. The project management team will utilize the historical information, templates and forms provided by the Enterprise Environmental Factors (EEFs) and the Organizational process Assets (OPAs).

The idea in this process is that the sponsor has committed in writing to exactly the acceptance criteria that will make the project a success. In addition, the sponsor has specified the assumptions and constraints like duration and budget.

DEVELOP PRELIMINARY SCOPE STATEMENT: TOOLS & TECHNIQUES

The project management team may have a project management methodology that the organization has adopted as its standard procedure for developing a scope statement. That methodology might include templates, forms and instructions or training in the thinking required to develop a scope statement. There might also be a project management information system (PMIS) to record and track the scope statement as it evolves. In many organizations, neither of these tools exists and the project management team must apply their expert judgment to the process, which may be the same as making it up as they go for each project. It's a far better to have an organization methodology.

DEVELOP PRELIMINARY SCOPE STATEMENT: OUTPUTS

One very important decision is how extensive a scope statement to draft. If the organization does not specify the content then the team also uses its experience on this key issue. Let's