Project Workflow Management

Project Planning Flow Process

By Dan Epstein

Introduction

While PM Workflow® is a continuous multi-threaded process, where all PM processes are integrated together; this article will describe the project planning flow process. For a full introduction to PM Workflow®, I strongly recommend reading my article Project Workflow Framework – An Error Free Project Management Environment on the PMI affiliated projectmanagement.com website (https://www.projectmanagement.com/articles/330037/Project-Workflow-Framework--An-Error-Free-Project-Management-Environment). That article provides an overview and explanation of how the project workflow framework achieves established objectives.

For more information, please visit www.pm-workflow.com

Before studying the project planning process, it is recommended that readers also revisit the project initiation process previously published in PM World Journal, as follows:

- Part 1 (February 2015)
- Part 2 (March 2015)
- Part 3 (April 2015)

Purpose

The purpose of the project planning process is to develop plans for executing and controlling all project groups of processes called frames and processes within each frame. This section instructs how to break down project tasks, estimate them, package them, and then, most importantly, to communicate the detailed project plan. The Planning Frame consists of the following major detailed processes:

- Preliminary Project Planning and Updating the Work Breakdown Structure (WBS)
- Risk Management Planning and Execution

1This series of articles is based on the book Project Workflow Management: A Business Process Approach by Dan Epstein and Rich Maltzman, published by J Ross Publishing in 2014. The book describes the PM Workflow® framework, a step-by-step approach using project management methods, practical techniques, examples, tools, templates, checklists and tips, teaching readers how to manage a project “hands-on” from scratch, including what to do, when and how to do it up to delivering a completed and tested product or service to a client.
Communications Management Planning and Execution
Configuration Management Planning and Execution
Resource Management Planning and Execution
Subcontractor/Offshore Management Planning and Execution
Quality Management Planning and Execution
Estimate project activities
Develop/Update the plan package
Communicate the plan package
Develop Statement of Work (SOW)
Update and approve the project, frame and the scope change budget

The combination of the above elements is used to develop plans for all project activities, which have a major impact on project cost, duration and quality. The more thorough the project plan, the more predictable the project’s cost and schedule.

All activities require planning. This includes planning of the Planning Frame, since the Planning Frame activities include plans for high level design, plans for risk management, plans for quality management etc. Planning of all project activities and the overall project is always done in the Planning Frame, but may be initiated by other frames. The list of where the planning of each frame is initiated is shown in Table 5-1.

Table 5-1 Frames Planning Initiation Source

<table>
<thead>
<tr>
<th>Planning of</th>
<th>Where the planning is initiated from</th>
</tr>
</thead>
<tbody>
<tr>
<td>Requirements frame</td>
<td>From the Requirements frame soon after receiving initial project requirements.</td>
</tr>
<tr>
<td>Planning frame</td>
<td>From the Requirements frame at the time of the final requirements review. The plan details may be updated, if necessary, after the project Planning frame approval, just before the project authorization is issued.</td>
</tr>
<tr>
<td>Construction frame</td>
<td>Internal loop from within the Planning frame, after the Planning frame plan is complete.</td>
</tr>
<tr>
<td>Closing frame</td>
<td>Internal loop from within the Planning frame, after the approval of the Construction frame plan and beginning of its implementation and tracking.</td>
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</tbody>
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Note: The Construction Frame planning may start early, in the middle of the Planning Frame planning, but in order to complete the plan, it is necessary to be in the advanced stages of the Planning Frame planning. Without having most of the Planning Frame complete, there isn’t sufficient information available for planning of the detailed design and implementation, which are parts of the Construction Frame. Similarly, in order to complete the plan for the Closing Frame, it is necessary to be in the advanced stages of the Construction Frame implementation.
Planning Frame Process Flow

Requests to Planning Frame

There are 10 different requests to the Planning Frame, which enter the frame from outside and through the internal loop from within the Planning Frame. Note that SCR means Scope Change Request.

1. Develop Requirements Frame plan (entry point 1A)
2. Develop plan for the Planning / HL Design Frame (entry point 1C)
3. Develop Construction / Tracking Frame plan (internal loop)
4. Develop Closing/Testing Frame plan (internal loop)
5. Develop scope change plan (entry point 1B)
6. Develop preliminary estimates of the project cost (entry point 1D)
7. Develop ballpark estimates of the project cost (entry point 2)
8. Receive “SCR Complete” notification (entry point 12)
9. Receive new SCR request (entry point 13)
10. Receive new issue request (entry point 16)
11. Trigger new SCR request from Construction Frame (entry point 21)

The first five (1 through 5) of the above requests are requests to produce project plans. Requests 6 through 11 are for other activities within the Planning Frame. The Receive New SCR request (9) after initial processing directs project flow to the Requirements Frame in order to produce SCR requirements analysis. When the analysis is complete, the request comes back to get a small or large scope change plan. The Receive New Issue request (10) needs the separate issue resolution plan made during the Issue Planning process P4. The Trigger New SCR request initiates the trigger, which, in turn, issues Receive New SCR Request (9).
Figure 5-1: Planning Frame
There are eight processes at the beginning of the frame, which are called entry processes:

P1 - Risk Management Planning  
P2 - Quality Management Planning  
P3 - Configuration Management Planning  
P4 - Issue Management Planning  
P5 - WBS Design and Preliminary Project Planning  
P6 - Communications Management Planning  
P7 - Scope Change Control  
P11 – High Level Design and Architecture  
P14 – Subcontractor / Offshore Management Planning

Table 5-2 Utilized Processes for Different Request Types

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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Get Requirements Plan (entry 1A)</td>
<td>must</td>
<td>must</td>
<td>no</td>
<td>no</td>
<td>must</td>
<td>must</td>
<td>no</td>
<td>no</td>
<td>must</td>
<td>may</td>
</tr>
<tr>
<td>Get Small Scope Change Plan (entry 1B)</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>must</td>
<td>may</td>
<td>may</td>
<td></td>
</tr>
<tr>
<td>Get Large Scope Change Plan (entry 1B)</td>
<td>must</td>
<td>must</td>
<td>may</td>
<td>no</td>
<td>no</td>
<td>may</td>
<td>must</td>
<td>may</td>
<td>may</td>
<td></td>
</tr>
<tr>
<td>Get Planning Frame Plan (entry 1C)</td>
<td>must</td>
<td>must</td>
<td>must</td>
<td>no</td>
<td>must</td>
<td>must</td>
<td>no</td>
<td>must</td>
<td>may</td>
<td></td>
</tr>
<tr>
<td>Get Construct. Frame Plan (int. loop)</td>
<td>must</td>
<td>must</td>
<td>must</td>
<td>no</td>
<td>must</td>
<td>must</td>
<td>no</td>
<td>no</td>
<td>may</td>
<td></td>
</tr>
<tr>
<td>Get Closing Frame Plan (int. loop)</td>
<td>must</td>
<td>must</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>must</td>
<td>no</td>
<td>no</td>
<td>may</td>
<td></td>
</tr>
<tr>
<td>Get Issue Resolution Plan (entry 16)</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>must</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>may</td>
<td></td>
</tr>
<tr>
<td>Get New SCR (entry 13)</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>must</td>
<td>no</td>
<td>may</td>
<td></td>
</tr>
<tr>
<td>Get Preliminary Estimates (entry 1D)</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>must</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>may</td>
<td></td>
</tr>
<tr>
<td>Get Ballpark Estimates (entry 2)</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td></td>
</tr>
</tbody>
</table>

**must**: means that the specified entry process is always used  
**may**: means that the specified entry process may or may not be used
no: means that the specified entry process is never used for that type of request

The Issue Management Planning and the Scope Change Control processes can be directly triggered only by a new issue and a new SCR. For example, even if a new issue comes up during the requirements planning, the new issue trigger is initiated, which, in turn, generates a new issue request to the Issue Management Planning process.

Table 5-2 may be useful if project management processes have already been established in the organization. Those processes must be universal enough to suit any project in the enterprise’s portfolio. If those processes have not yet been established, use the guidelines provided in the corresponding chapters of this book to establish project management processes and document them in the Project Control Book.

Once a process is planned, it must be executed at some point. Therefore, for each process planned, there must be a corresponding execution or management process. For example, after the quality activities are included in the approved plan, and the work starts, the quality must be periodically tracked and maintained. The result – or outcome - of the Quality Planning process is the Quality Plan. In order to maintain quality, the Quality Management Process must be executed. It does not make sense to attempt process planning without clear understanding of the process execution. It is not really possible to plan risk management, if we don’t know how to manage risks.

The following section will present details of Risk, Quality, Communication and other management processes. Some of those processes will be executed in the Construction Frame of the project, and all of them will be tracked in the Construction Frame.

**Process Overview**

The overall Planning Frame Process Flow diagram is shown at Fig 5-1. During multiple runs of the Planning Frame the following processes are executed:

1. **Risk Management Planning process (P1).**
   Formally, the purpose of Risk Management is to identify and document risks (which include negative risks or threats, and positive risks, or opportunities), to control the impact of risks and to minimize the effects of threats and maximize the effects of opportunities on the project. Risk Management Planning provides the risk containment plan, which may affect project estimates. However, only negative risks will be considered in the book for reasons described later.

2. **Quality Management Planning process (P2).**
   Quality Management Planning process will establish Quality Management plans and schedule Quality Assurance audits and Quality Control reviews. Quality Management
will control quality throughout the project life, from inception to closing. Without this process, there would be no way to determine whether the project implementation is successful or not. Quality management should also be focused on the quality of the project process itself. By reading this book and taking the advice about project workflow, you are actually already improving this aspect of quality management!

3. Configuration Management Planning process (P3).
The purpose of this process is the control of project components at any given time, preventing unauthorized changes to the completed deliverables. Configuration Management Planning produces the schedule of Configuration Management Reviews. Schedules are part of the project plan package, which is stored in the Project Control Book.

The purpose of Issue Management is to identify and manage issues that come up during all project frames; to identify processes to resolve issues and minimize their impact on the project. An issue differs from a risk in that it is a 100% certain threat to the project, and it should be managed somewhat differently because of that element of certainty. The Issue Management Plan identifies resources responsible for each issue resolution, the task, resources for escalation when needed and the target dates for the issue resolution. Issue Management Planning is triggered every time an issue comes up. In some cases, when an issue cannot be resolved without scope change, it triggers a new SCR.

5. Work Breakdown Structure Design (WBS) and the Preliminary Project Planning process (P5 / P5A).
The purpose of a WBS as it is used in this book is to enable the establishment of plans for managing the project or frame. The WBS will contain the project information (e.g. milestones, deliverables, dependencies, risks, tasks etc.) and identify resource requirements and training plans. WBS incorporates inputs from processes (P1 through P6, P11 and P14). Changes to the project scope during other project frames will bring the project flow back to this process.

6. Communications Management Planning process (P6).
Communications Management is required to identify stakeholders, develop project reporting and the reporting templates for different types of project communications. Communication Planning produces the scheduled communications to stakeholders, as well as the choice of medium for the various project communications.

7. Scope Change Control process (P7).
The project Scope Change Control Process establishes rules for implementing scope changes, while avoiding scope leak and the scope creep. Scope leak occurs when any planned work in the approved baselines is omitted or deferred to a future timeframe.
without proper change authorization. Scope creep occurs when any unplanned work on the approved baselines is performed without proper change authorization. In other words, the scope leak is the situation when some project scope elements are missing in the end product, while scope creep is when additional undocumented scope elements present in the end product or the delivered project scope differs from the documented one. Scope Change Planning produces the implementation schedule for each formal scope change request. Scope change requests must be present before planning scope change.

8. Create / Update Project Plan package (P8).
   The Project Plan package is a set of various plans, schedules, resource assignments, estimates etc. required for the project or frame budget approval.

9. Approve Construction/Tracking Frame Plan and Budget (P9).
   This step is executed at the end of the Planning Frame just before the Construction Frame starts. The final Frame budget must have a definitive accuracy of -5% +10%.

10. Create SOW (P10).
    The purpose of this process is following steps necessary to create the Statement of Work (SOW), which is the most important legal document laying the foundation for the project. As opposed to the Charter, this is a narrative description of the work to be done and schedule of payments.

    This step will start execution at the same time with all the planning elements (P1 through P6) and must be finished before the plan package is produced in P8. The process flow for P11 is purely technical in nature and it will be entirely different for different industries.

12. Estimate the project and the frame (P12a and P12b).
    The purpose of estimating is to produce size, effort, cost and critical elements estimates for a project or a frame throughout its lifecycle. The estimating process describes necessary activities and methods required to produce it. P12B produces only ballpark estimates, while P12A produces either preliminary estimates for the entire project or definitive estimates for the project Frame being planned.

13. Approve Closing/Testing Frame Plan and Budget (P13).
    This step is executed at the end of the Construction/Tracking Frame, just before the Closing/Testing Frame starts. The final budget to be determined here has an estimated definitive accuracy.

    The purpose of the Outsourcing Management is the selection of qualified companies (outside of the project team) for implementation of project components, as well as
managing the relationship with them for quality deliverables and seamless integration with other components of a project.


The purpose of the Human Resource Management is managing resources (specifically, people) on the project.

The Issue Management and Scope Change Plans are both dynamic plans, which are built only when a new issue comes up or a scope change is requested in any project Frame. Both must be documented prior to developing plans.

There are seven different process flow paths in the Planning Frame, one for each planning request type:

1. The Requirements Frame planning path (entry point 1A)
2. The Scope Change planning path (entry points 1B, 13, 14)
3. The Planning Frame planning path (entry point 1C)
4. The Construction Frame planning path (internal loop)
5. The Closing Frame planning path (internal loop)
6. The preliminary or the detailed project, frame or Scope Change estimates path (entry point 1D)
7. The Ballpark project estimates path (entry point 2)

In addition, when a request is submitted for the issue resolution plan, the process flow follows the path described in the Issue Management Planning process P4. Each of the planning path flows will be reviewed separately.

**The Requirements Frame Planning Path**

The Requirements Frame planning path is shown in Fig 5-1A (in bold). The process starts when the request from the Requirements Frame is sent out via exit point 1A to the Planning Frame early in the Requirements Frame, asking to produce the Requirements Frame plan. The process flow enters the Planning Frame via entry point 1A. Based on the table 5-2, the process involves the following entry processes:

- Risk Management Plan (P1).
  The first project risk assessment must be made at the beginning of the requirements analysis and a second time before approval of requirements. The risk management plan will identify steps required to contain and remediate risks identified.

- Quality Assurance Plan (P2)
  The plan will identify quality audits and reviews for ensuring the quality of
requirements.

- WBS Design and Preliminary Project Planning (P5)
  This process will provide the list of major activities needed to implement the Requirements Frame. The WBS will be updated later in the Frame to produce a detailed plan for the requirements analysis.

- Communications Plan (P6)
  Communications process will identify all project sponsors and describe interaction and reporting requirements between the delivery team and major sponsors during the requirements analysis.

Note: Processes which are not in bold on the diagram are not relevant in the Requirements Frame planning flow. Also, Scope Change and Issue Management are event-driven processes, activated by the corresponding triggers. When triggered during the requirements planning, they present separate parallel flow paths, which are not a part of this route.
When the execution of processes P1, P2, P5 and P6 is complete, the essential information will become available for producing new detailed estimates in process P12A and for resource planning in process P15. Since in this particular situation we are building the Requirements
Frame plan and not the scope change plan, the answer to the decision point (Scope Changes?) will be NO and the project plan for the Requirements Frame will be updated in step P5A. It will contain a list of the detailed tasks for the Requirements Frame. During this process, all high-level tasks will be decomposed to the level of elementary tasks, having task dependencies indicated in the plan. Also, all resources will be planned and assigned by name to each task during execution of the process P15.

From there, the process flows to the decision making point (Preliminary estimates?) Since our goal at this point is building the Requirements Frame plan, rather than doing preliminary estimates, the answer to the question will be NO and the Requirements Frame plan package will be created in P8 by combining all plans into one package. From there the decision making point (Planning Frame Plan?) is reached. Since we are planning requirements management and not the Planning Frame plan, the answer is NO. The next decision making point is the (Requirements Management Plan?) Now the answer is YES and the process flow returns to the Requirements Frame via exit point 6 with the Requirements Frame plan available. At the same time the process flow also goes to the Construction Frame for implementation and tracking of the requirements management activities via exit point 7A.

**The Scope Change Planning Path**

The Scope Change planning path is shown in Fig 5-1B (in bold). In order to save space, the diagram is not shown here. You may download all Planning Frame diagrams from the Downloads section of the PM Workflow website [http://www.pm-workflow.com/download.html](http://www.pm-workflow.com/download.html). Scroll to the Errata header on the right of the page and click the Download button to download Fig 5-1A through 5-1G.

A new SCR may be generated at any time, when a new request arrives for scope change. In this case the external trigger initiates a new SCR. The request to open a new SCR enters the Scope Change Control process P7 via entry point 13. An SCR may also be generated as the result of certain conditions in the project process flow, such as budget or schedule issues, which cannot be resolved without reducing the project scope. The request enters the Scope Change Control process P7 for the initial SCR review from:

- The Planning Frame via the entry point 14, when the scope change is agreed to in order to reduce the budget or shorten the schedule.
- The Issue Management Planning process via entry point 15, when the new request cannot be resolved without changes to the project scope.
- The Construction or Closing Frame via entry point 21 during the troubled project assessment.
The Scope Change Control (P7) process is described in detail in the Scope Change Planning section. If the SCR is not rejected there, then the flow goes to the Requirements Frame via exit point 5 to begin the SCR analysis.

After the SCR analysis is complete, the process flow comes back from the Requirements Frame to the Planning Frame via entry point 1B in order to produce the project scope change plan.

There are small and large scope changes, which do not always correspond to the size of actual changes, and thus require different approaches. Sometimes it is not a straightforward task to determine exactly whether the scope change should be considered large or small. The overall guideline to indicate small scope change is:

- Small scope change takes up to 8 hours of labor to accomplish.
- Small scope change must not present any additional risks to the project.
- Small scope change does not add new stakeholders or business users.
- For small scope change, the SCR impact analysis performed in the Scope Change Control (P7) process indicates that there is nothing else in the project or outside of it affected by the change.
- There are no new issues created as the result of the small scope change.

If there is any doubt, consider the scope change to be a large one as a default. According to the Table 5-2 displayed earlier, (Processes Utilized for Different Request Types), large scope change planning involves the following entry processes:

- Risk Management Planning (P1).
  The complete project risk assessment must be made before estimating the scope change. The risk management plan will identify steps required to contain and remediate risks of the scope change, if any.
- Quality Assurance Planning (P2)
  Large scope change requires separate QA Review, which must be planned. The project plan will be updated.
- Scope Change Control (P7)
  The Scope Change Control manages interaction details between the delivery and client teams, when a project scope change is required.

Also, in some cases, three additional entry processes may be executed:

- Configuration Management Planning process (P3)
  If the large scope change adds extra deliverables, then the Configuration Plan must be updated as well.
- Communications Planning process (P6)
If the large scope change involves additional business units or additional users, the existing Communications Plan must be updated to reflect additional stakeholders.

- **High Level Design and Architecture process (P11)**
  If the large scope change involves changes in HL design or architecture, then the required changes will be made using process P11.

- **Subcontractor/Offshore Management Planning process (P14)**
  If the scope change is related to or affects subcontractors, this process will be used for the scope change evaluation.

In the case of small scope change, the Scope Change Control (P7) process is the only entry process executed.

When P1, P2, P3 and, possibly, P6, P11 and P14 entry processes are executed, the change request will be estimated in the Estimating process P12A and resources planned in Resource Management process P15. The process flow then enters the decision point (Scope Change?). Since the answer is YES, the process flow returns to the Scope Change Control process P7 for SCR approval, as described in the Scope Change Control process section and then sends the process flow to the WBS and the Project Plan Update process P5A. From there it follows the same path as in the Requirements Frame plan flow until it reaches the decision point (Requirements Management Plan?). This time the answer is NO. Since we are at the process of the scope change planning, the answer is YES at the next decision point (Scope Change Plan?) and the process flow is directed to the Construction Frame for the scope change implementation and tracking via exit point 7B.

When the scope change implementation is complete, the Construction Frame sends indication about that to the Scope Change Control step P7 via the process entry 12 and the SCR is closed. The process flow returns to the beginning of the loop, waiting for the next change request.

The process flow for the small scope change is the same as for the large scope change, except that *no entry processes are involved*, except for the Scope Change Control process.

**The Planning Frame Planning Path**

The request for the Planning / HL Design path is triggered during the Requirements Review step R7 in the Requirements Frame in order to obtain the two following plans just in time before the project authorization requested. The Planning Frame Planning Path is displayed on Fig 5-1C.

- Detailed Planning / High Level Design Frame plan
- High level project plan to the end of the project.

The request, which enters via the entry point 1C, activates the following entry processes:
- Risk Management Planning (P1)
  Risk Management plans are built and/or updated many times throughout the project. At the very least, they are refreshed at the beginning of each Frame planning. It really is critical to remember that risk must be considered “live” and ongoing and not a one-time analysis at the start of the project.

- Quality Assurance Planning (P2)
  QA Reviews will take place at least twice during this Frame, as described in the Quality Assurance section of this book.

- Configuration Management Planning (P3)
  Configuration Management reviews are usually made at least quarterly in accordance with description in the Configuration Management section.

- WBS Design and Preliminary Project Planning (P5)
  This process will provide the list of major activities needed to implement the project. The WBS will be updated later in the process P5A to produce the detailed Frame and the overall project plan.

- Communications Planning (P6)
  Communications process will identify all project sponsors and describe interaction and reporting requirements between the delivery team and major sponsors during the Planning Frame.

- H/L Design and Architecture (P11)
  This is the technical process guiding the delivery team. The process depends on the industry and will significantly differ for different types of projects. Projects in areas of the process improvement and some other areas will have neither H/L Design nor Architecture.

- Subcontractor/Offshore Management Planning (P14)
  Plans made by the subcontractor will be incorporated in the plan package in the process P8.

When the execution of entry processes P1, P2, P3, P5, P6, P11 and P14 is complete, the process flow enters the Estimating process P12A. From this moment on, the process flow follows the same path as in the Requirements Frame planning flow up to the decision point “Planning Frame Plan?” Since this is indeed what is going on at the moment, the answer is YES and the flow is sent back to the Requirements Frame with the completed Planning/HL Design Frame plan and the overall project plan. At the same time the flow loops back to the beginning of the Planning/HL Design Frame to initiate the Construction/Tracking Frame planning.
The Construction Frame Planning Path

When the Planning / HL Design Frame planning is complete and its implementation and tracking starts in the Construction Frame, the Construction Frame planning is initiated when the process flow loops back to the beginning of the Planning Frame. The Construction Frame Planning Path is shown on Fig 5-1D. The Construction Frame planning request utilizes the following entry processes:

- Risk Management Planning (P1)
  Risk Assessments will be planned for Construction Frame. They take place at least once at the beginning of the Construction Frame planning. If new risks are identified, this will require building a risk management plan.

- Quality Assurance Planning (P2)
  Quality audits and reviews will be planned for implementation, as described in the Quality Management section of the book.

- Configuration Management Planning (P3)
  Since the configuration management reviews are usually made at least quarterly, it may or may not be necessary to plan a review in the Construction Frame.

- WBS Design (P5)
  The Construction Frame planning process will provide a list of activities needed to implement the Construction Frame. The previously-created preliminary project plan will be updated to produce the detailed plan.

- Communications Planning (P6)
  The Communications Planning process will be updated to identify additional project stakeholders, if any, and describe interaction and reporting requirements between the delivery team and those stakeholders during the Construction Frame.

- Subcontractor/Offshore Management Planning (P14)
  Detailed plans made by the subcontractor will be incorporated in the plan package in the process P8.

From the moment the execution of entry processes P1, P2, P3, P5, P6, P7 and P11 is complete, the process follows the same path as the Planning Frame path until the process flow gets to the decision point question (Planning Frame Plan?) Since the Construction Frame is being planned at this instance, the answer is NO. The next two decision point questions are (Requirements Management Plan?) and (Scope Change Plan?). Both will be answered NO. When the flow gets to the decision point question (Construction Frame Plan?), the answer is YES and the process
flow goes to Create SOW process P10 for development of the Statement of Work (SOW) for the project, which is a legal document guiding your relationship with the client. The SOW is developed in the Planning Frame, when planning for the construction Frame is largely completed and the costs and schedule through the end of the project can be reasonably estimated. The SOW provides a narrative project description, implementation milestones, price, assumptions, terms of payments, etc. Details of SOW development will be provided in Chapter 13.

When SOW is completed, the process flow goes to the Approve Construction Frame Plan and Budget process P9 for the sponsor’s approval.

The next decision point is the Plan (Budget Approved?) If the plan is not approved, the reason must be analyzed. If the cost of the project implementation is too high for the client or if the schedule is unacceptable, the client may agree to consider reducing the scope of the project in order to fit the acceptable budget or schedule. Any such move will require issuing a commensurate scope change request. If the client agrees to the reduced project scope, then the answer to the decision point (Change to Project Scope Agreed?) is YES. The process flow goes to the New SCR trigger to start the SCR process. However, if the scope change is not agreed to by the sponsor, the process flow is directed to the Closing Frame for project termination via exit point 3.

If the plan and budget are approved, the process flow goes to the Construction Frame for implementation and tracking via the exit point 7D. At the same time the process flow loops back to the beginning of the Planning Frame for planning of the Closing Frame.

**The Closing Frame Planning Path**

The process is initiated by the process flow looping back to the beginning of the Planning Frame when the Construction Frame plan is approved. The Closing Frame Planning Path is shown on Fig 5-1E.

The request utilizes the following entry processes:

- **Risk Management Planning (P1)**
  The Risk Management plan will be built at least once at the beginning of the Closing Frame planning.

- **Quality Assurance Planning (P2)**
  Quality audits and reviews will be performed at least twice, as described in the Quality Management section of the book.

- **Configuration Management Planning (P3)**
Since the Configuration Management reviews are usually made at least quarterly, it may or may not be necessary to do this.

- **WBS Design and Preliminary Project Planning (P5)**
  This process will provide a list of activities needed to implement the Closing Frame. Preliminary WBS will be updated in the process P5A to produce the detailed plan. While planning for the Closing Frame, there won’t be any longer preliminary project planning, since that is the last Frame of the project.

- **Communications Planning (P6)**
  The Communications Planning process will be updated to identify additional project stakeholders and describe interaction and reporting requirements between the delivery team and those stakeholders during the Closing Frame.

- **Subcontractor/Offshore Management Planning (P14)**
  Detailed Closing Frame plans made by the subcontractor will be incorporated in the plan package in the process P8.

The process flow follows the same path as in the Scope Change plan flow until the flow comes to the decision point question (Scope Change Plan?) The answer is NO. The next decision point is (Construction Frame Plan?) Since at this point the Closing Frame is being planned, the answer to the question will be NO and the process flow goes to the Approve Closing Frame Budget process P13 for the Closing Frame approval.

The Closing Frame is the last frame and is relatively small, so that the option of not approving the Closing Frame plan when all the other plans are approved, cannot practically happen. The possible issue of contention in this frame is a User Acceptance Test, which may be resolved in the Issue Management process, as described in the corresponding section of the book. Once the Closing Frame plan and budget are approved, the process flow goes to the Construction Frame for tracking of the Closing Frame and to the Closing Frame for the user acceptance tests and project closing.

**The Preliminary Estimates Path**

The Preliminary Estimates Path utilizes the following entry processes:

- **Risk Management Planning (P1)**
  The Risk Management plan will be developed here to identify the risk margin of the preliminary estimates.

- **WBS Design and Preliminary Project Planning (P5)**
This process will provide a high level list of activities for each project requirement. The list will include all project frames.

The Preliminary Estimates Frame Planning Path is shown on Fig 5-1F.

The process is triggered from the Requirements Frame when the Business Requirements Document is produced in step R6 and enters the Planning Frame via entry point 1D. High level estimates, which are based on the preliminary project plan, will be produced in process P12A. Later in the process, after detailed planning of the Planning Frame, when the Construction and then the Closing Frames are complete, the estimating process P12A will produce detailed estimates of the corresponding frames, one at a time. Next, the process flow gets to the decision point question (Scope Change Plan? and the answer is NO. Following this, the Work Breakdown Structure will be updated in process P5A on a very high level without detailed tasks, but with the high level task dependencies identified and generic resources with no specific names assigned. While the estimating process P12A will provide the effort for each activity, the task dependencies and resource assignments are required to calculate the overall approximate duration of the project, which will depend on the assumption of resource availability. The process flow gets to the decision making point (Preliminary estimates?) The answer to this question is YES and the process flow is returned to the Requirements Frame via exit point 9.

The Ballpark Estimates Path

This process is initiated at the beginning of the Requirements Frame after receiving the initial project request. The ballpark estimating request enters the Planning Frame via entry point 2. The only process involved in ballpark estimates is the Ballpark Estimating process P12B. Upon completion of the requested estimates the process flow returns to the Requirements Frame via exit point 4. The Ballpark Estimates Frame Planning Path is shown on Fig 5-1G.
About the Author

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Dan Epstein combines over 25 years of experience in the project management field and the best practices area, working for several major Canadian and U.S. corporations, as well as 4 years teaching university students project management and several software engineering subjects. He received a master’s degree in electrical engineering from the LITMO University in Leningrad (today St. Petersburg, Russia), was certified as a Professional Engineer in 1983 by the Canadian Association of Professional Engineers – Ontario, and earned a master’s certificate in project management from George Washington University in 2000 and the Project Management Professional (PMP®) certification from the Project Management Institute (PMI®) in 2001.


Dan first started development of the Project Management Workflow in 2003, and it was used in a project management training course. Later this early version of the methodology was used for teaching project management classes at universities in the 2003–2005 school years. Later on, working in the best practices area, the author entertained the idea of presenting project management as a single multithreaded business workflow. In 2007–2008 the idea was further refined when teaching the project management class at a university.

Dan is an author of many publications in professional magazines, speaker at the international presentations, a guest at podcasts, etc. The Project Management Institute’s (PMI) assessment of his book says: “Contains a holistic learning environment so that after finishing the book and assignments, new project managers or students will possess enough knowledge to confidently manage small to medium projects”. The full list of his publications and appearances can be found at the website [www.pm-workflow.com](http://www.pm-workflow.com) in the Publications tab. Dan can be contacted at dan@pm-workflow.com.