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PROJECT CLOSURE

Contributed by

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The value of continuous improvement that occurs from continuous learning is not ambiguous, nor is the concept for continuous learning new or novel. Rather, it has been known for years that team and organizational learning can create a competitive advantage. The concept, as well as tools and techniques, gained immense popularity in the 1990s, due in part to Peter Senge's book *The Fifth Discipline*. Since this seminal text, countless other authors offered publications and thought leadership on the topic of learning.

Learning is indeed an important variable that separates the best from the rest. Organizations that can obtain, codify, and make easily available data and information from individuals and teams in the form of knowledge and lessons learned have a competitive advantage. Often, such knowledge comes from project managers and their teams—those individuals working to create new products, offer new services, and help their organization innovate from where they are now to where they aim to be in the future. Those who do it well continually get better and those who struggle fall behind.

This chapter focuses on best practice project closure tools, techniques, and the functions that the project manager needs to facilitate to ensure project closure leads to continuous improvement from lessons and experiences learned. Three specific tools will be detailed in this chapter: project closure plan and checklist, project closure report, and project postmortem. Additionally, a section on project retrospectives is detailed. Prior to the tools, however, an overview of project closure is offered to ensure understanding with regard to closing a project.

UNDERSTANDING PROJECT CLOSURE

Projects vary in size, scope, and complexity. Regardless of such differences, however, all projects follow a rather similar, albeit generic, life cycle from start to finish. In general, a project cycle progresses from starting or initiating to planning and organizing to



Figure 13.1: Generalization of a Project Life Cycle

executing and then to closing. Harold Kerzner and others have spent a significant amount of time writing books and articles detailing life cycles used by project teams in industries including engineering, manufacturing, software development and construction.¹ Because of Kerzner’s fine research and contribution, there is no need to replicate it here in detail. The general process, which is outlined in Figure 13.1, is sufficient and enables the focus here to be on best practice tools and techniques that project managers can use to ensure effectiveness in their work.

It is important to note that a project life cycle is not synonymous with project process groups that many project managers and teams use to organize their work. This is expressly noted as such in the *Project Management Book of Knowledge* (PMBOK) Guide in which it states, a project life cycle “should not be confused with the Project Management Process Groups.”² It is understandable that confusion occurs. The five process groups are initiating, planning, executing, monitoring and controlling, and closing. The nomenclature is nearly exact to that of Kerzner and others relative to project life cycles. Further, they are both referred to as a cycle or process, and the work effort (deliverables, decisions, and otherwise) varies in accordance to the stage of work under way.

Figure 13.2 illustrates each process group relative to the project’s life cycle over time and the interaction of one group with the others. The differences between a project life cycle and project process groups becomes evident with the visualization of Figure 13.2. Whereas a life cycle is naturally explained and illustrated linearly, with definitive starts and finishes, the process groups overlap with one another. As can be visualized, there

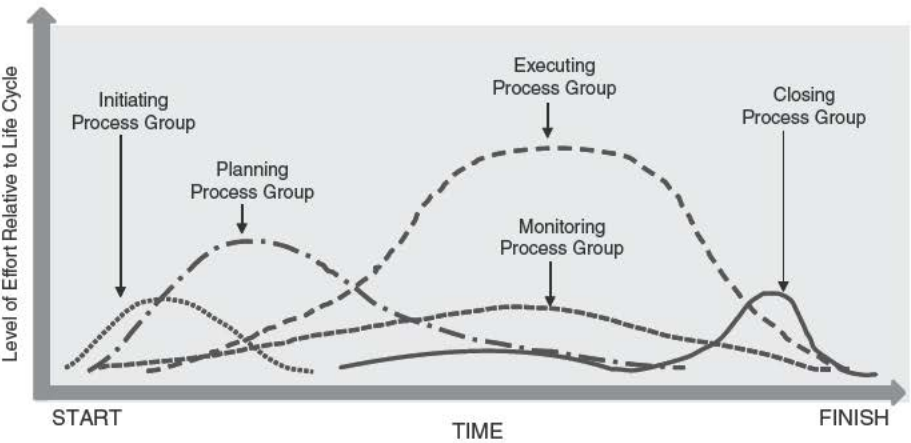


Figure 13.2: Process Groups Interact in a Phase or a Project

is simultaneous work associated with most process groups over the period of the entire project life cycle. Although this is illustrated, the simultaneous work is not always comprehended and applied. For example, although project closure activities are to be occurring in nearly every phase of the project's life cycle, often project managers and their teams conduct such activities only during the closing phase of the project. Focusing project closure activities only at the end of a project limits the learning that can occur and therefore increases project and enterprise risk. This will be explained in further detail throughout this chapter.

Focusing here on project closure, the closing process group consists of the work effort necessary to end, or close out, any pertinent project activities across the phases of work and process groups. Such work here is often associated with contractual obligations, procurement paperwork, handoff agreement(s) between the project and operations teams, and reallocation of resources, just to mention a few.

Project Closing Activities

When engaged in closing activities, the project manager's responsibility is to review the work of the prior phase (or phases if the project is beyond the first phase in the project's life cycle) to ensure all necessary and planned work is complete and objectives are met. The importance of the closing process group is twofold. First, is to ensure that the work planned was actually completed. During project planning work efforts, all pertinent expectations associated with resourcing, timing, scope, quality, costs, and other activities are detailed and sequenced along a timeline or schedule. Proper closing activities ensure that what was deemed necessary during the planning was carried in accordance to expectations. If there is any variance between what was planned and what was completed, the project manager must determine why and then determine if any adjustments need to be made for the remainder of the project based on why the variance occurred. Variances here could be either positive or negative to the successful completion of the project.

While the first point of the twofold importance to proper project closing is project-centric, the second part of the importance for proper closing goes beyond the value of the project team to being enterprise-centric. The most effective learning organizations have processes, systems, and a culture in place to foster knowledge sharing. It is incumbent on the project manager to broadcast lessons learned, best practices, and issue resolution tactics to peer project managers and project teams across the enterprise. Doing so shares knowledge, which in turn can enable project teams to more efficiently and effectively plan and execute their projects. The more efficiently and effectively projects are delivered, the more business value project teams generate for the enterprise.

The key takeaway here is that the work effort associated with project closing is to ensure that all pertinent activities are complete. However, importantly, closing is about learning. This requires the project manager to engage a number of team members and other stakeholders. This point also addresses a major oversight by most project managers and their teams. As noted earlier, far too many project managers focus closing on end of project work instead of throughout each process group.

Project management closing is not a work effort reserved for the end of the project, but rather closing is about reviewing and learning throughout the project's life cycle.

It is common knowledge that there is a lot of work involved with managing a project. It does not matter if the project is small or large, rather straightforward or complex. All projects require numerous resources, many deliverables, and even more decisions during the life cycle. Often project managers and their teams look to the deliverable as the finish line, the point of completion. More seasoned project managers and mature learning organizations know differently. A milestone, deliverable, or even a handoff is not an ending point. Rather, it is the process of closure that marks an ending point. Figure 13.3 isolates the closing work effort relative to a project life cycle.

As can be discerned from the graphic in Figure 13.3, project closing is not a work effort reserved for the end of the project, but rather closing is about reviewing progress, completing work, and learning throughout the project's life cycle. This is being emphasized here because when discussing project closing with many (dare we say, most) project managers, the conversation is often most concerned with the end of the project.

How Do You Learn from Your Projects?

A recent Project Management Office audit at a company in the Pacific Northwest uncovered a common theme when it came to project closeout work. Ashley, a seasoned project manager within this rather immature project organization, shared this comment:

When it comes to learning from our project work, we do conduct post mortem exercises after the project ends with members of the project

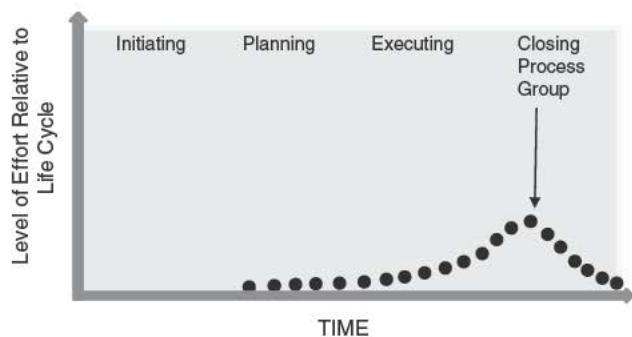


Figure 13.3: Project Closing Work Effort During the Life Cycle

team who are available [those not deployed on another project]. Unfortunately, we do not invest enough time, in my opinion, during the project to conduct learning initiatives necessary to capture new knowledge from lessons learned and adjust our work effort accordingly. We make a lot of the same mistakes, time and again, across projects. We are wasting resources by not learning.

Ashley's experience is a common one. With her company's approach to conduct lessons learned efforts at the end of the project, often a lot of time has passed since the start of the project and many lessons that may have been learned have since been forgotten due to the passing of time and not having codified, saved, and distributed the lessons experienced earlier and throughout the project. Additionally, lost was any opportunity to make the next phase in the project's life cycle more efficient and effective. When aggregated across multiple projects in an enterprise, this lack of learning becomes increasingly expensive and risky.

Waiting until the closing phase of the life cycle to reflect and learn becomes a problem not only for the project, but also for the entire company. Any project team that waits until the end of the project's life cycle loses out on opportunities to learn and improve. Highly experienced project managers and organizations with mature project management organizations know the value of intentionally engaging stakeholders in closing work throughout the life cycle of any project.

The remaining pages in this chapter detail how project managers can (and should) incorporate closing activities throughout their projects. The tools and techniques outlined hereto should help seasoned and aspiring project managers do just that—incorporate project closing activities and deliver greater levels of business value.

Summarizing Project Management Process Groups

As a quick reminder, here is an outline of the major project process groups.³

- *Initiating process group.* Those processes performed to define a new project or a new phase of an existing project by obtaining authorization to start the project or phase.
- *Planning process group.* Those processes required to establish the scope of the project, refine the objectives, and define the course of action required to attain the objectives that the project was undertaken to achieve.
- *Executing process group.* Those processes performed to complete the work defined in the project management plan to satisfy the project specifications.
- *Monitoring and controlling process group.* Those processes required to track, review, and regulate the progress and performance of the project;

(continued)

identify any areas in which changes to the plan are required; and initiate the corresponding changes.

- *Closing process group.* Those processes performed to finalize all activities across all process groups to formally close the project or phase.

PROJECT CLOSURE PLAN AND CHECKLIST

Proper project closure starts with proper planning. Planning is especially important when it comes to project closure because this phase in the project's life cycle and the work associated with it is often neglected. To ensure project closure is not neglected, best practices suggest starting the project's closure work during the planning phase of the project. Doing so ensures allocation of resources and clearly sets expectations of how project closure activities will be conducted throughout the project. This leads to the following two important questions.

1. What activities are associated with the project closure work effort?
2. When should the project closure work be conducted?

There are three major tasks for project managers to oversee during closeout work. These three tasks are the same (at a generalized level) regardless when in the life cycle they are administered. First, the project manager must evaluate if the outcomes, decisions, and deliverables of the project (at that point in the life cycle) met the expectations of all stakeholders. This work can be summarized by the following questions:

- Were all planned and scheduled deliverables and key milestones complete?
- Based on the work to date, is the overall health of the project and the team high and functional?
- Based on the work to date, are the stakeholders satisfied with progress and optimistic about the effectiveness of work relative to the next phase (or operationalization) of the project?
- Is all contract and procurement work finalized and up-to-date?
- Is the team adequately prepared, resourced, and optimistic about the effectiveness of work relative to the next phase of the project?

Essentially, these questions serve as a framework for project managers to begin project closure activities. Ideally, all questions would be answered "yes." If there is a "no" answer, the project manager needs to further investigate, determine what is needed to change the "no" to a "yes" in the next phase of work. In some cases, doing so will require support, guidance, and direction from senior leadership, the governing body, or sponsor of the project.

As project closure activities begin, a multitude of work lies ahead. The use of the project closure checklist is helpful for guiding the closure work and ensuring all areas are addressed. Table 13.1 offers a generic project closure checklist that can be modified to meet the needs of your particular organization and project.⁴

Table 13.1: Generic Project Closure Checklist	
Status	Checklist Items
<input checked="" type="checkbox"/>	Verify all project deliverables completed
<input checked="" type="checkbox"/>	Conduct project closure meetings
<input checked="" type="checkbox"/>	Develop a resource reassignment plan
<input checked="" type="checkbox"/>	Close out all work orders, contracts, and subcontracts
<input checked="" type="checkbox"/>	Prepare final reports (project, financial, quality, and so on)
<input checked="" type="checkbox"/>	Submit final reports to customer and top management as required
<input checked="" type="checkbox"/>	Finalize the project file
<input checked="" type="checkbox"/>	Close out all financial documents
<input checked="" type="checkbox"/>	Ensure all costs are charged to the project
<input checked="" type="checkbox"/>	Submit final invoices to customer and pay final invoices from suppliers
<input checked="" type="checkbox"/>	Document final change management log and final project scope
<input checked="" type="checkbox"/>	Document actual delivery dates of all deliverables
<input checked="" type="checkbox"/>	Conduct the final postproject review meeting
<input checked="" type="checkbox"/>	Submit final customer or client acceptance documentation
<input checked="" type="checkbox"/>	Officially notify the customer or client of project completion
<input checked="" type="checkbox"/>	Officially notify vendors, suppliers, and partners of project completion
<input checked="" type="checkbox"/>	Compile and store all required documentation for long-term data management
<input checked="" type="checkbox"/>	Dispose of all equipment and materials
<input checked="" type="checkbox"/>	Recognize the work of project team members
<input checked="" type="checkbox"/>	Collect and document all project lessons learned
<input checked="" type="checkbox"/>	Celebrate success

If the first part of the project manager’s work in closing is to determine what worked and what didn’t, the second critical aspect of closing is documenting your findings. Documentation here means updating project artifacts, planning documents related to upcoming phases of work, and templates and best practice documents for other project teams. This leads us to the third and final work effort for project managers in closing project work efforts—socialize lessons learned and key takeaways.

The socialization of lessons learned and knowledge goes beyond the updating of artifacts and templates. Here, socialization means broadcasting and distributing knowledge. This means that the project manager and their team serve as a subject matter expert by sharing knowledge: a researcher and a teacher, if you will, of key findings from experience. This requires project managers to communicate effectively and do so in a way that focuses on applying lessons from one project on to others. The more often this occurs, teams and organizations can become smarter, faster. The faster you can learn, the better off you will be. This work is where teams, and organizations at large, can build a competitive advantage. When knowledge sharing becomes a cultural expectation among project managers and their teams, intellectual capacity increases vicariously

from one team to another and best practices, tools, processes, and know-how become expectations for continuous improvement.

Developing the Plan and Checklist

Proper planning is perhaps one of the most important aspects to ensuring project success. Project managers develop their closure plan in accordance with the overall project's scope and schedule. This enables the project manager to align the frequency of closure work with minor and major activities of the project. The project management plan typically addresses the following items in relation to a business problem or opportunity:

- Scope
- Time and schedule
- Costs
- Quality
- Communication
- Risk
- Procurement

During the planning phase of the project, closure activities can often be an oversight. This is unfortunate because closing a project has direct correlation and implication on each of the seven bulleted items just noted. Proper planning should include closing activities as part of the project's scope, time, and cost. Doing so certainly has implications relative to the project's quality, communication, risk management, and procurement initiatives. Therefore, the first step to ensure proper project closure is to develop the project closure plan during the project's planning phase.

Ensuring proper project closure is the process of identifying the requirements for closing out the most critical aspects of the project. These aspects could include decisions, deliverables, milestones, and (definitely) each major life cycle phase of the project. Figure 13.4 highlights the plan for project closure relative to inputs and outputs.

Essentially, the inputs necessary to clearly and completely plan for project closure include the core project management plans. These plans should be detailed during the planning phase of any project and from them, a project closure plan and its associated processes, practices, expectations, and checklists can be created.

Since every project is different, the detail (breadth and depth) of the project closure plan will likely be different for each project. The challenge faced by most project managers is to ensure project closure occurs (make sure the project is completing work as planned, document lessons learned, and share that knowledge to project teams) without being overprescribed in the process or overburdened by the tools used in the process. It is easy for project managers to simply say that project closure activities will occur at every milestone or deliverable in the project schedule. In reality, however, that is not needed. The project manager must discern at which critical points in the project should an investment of time, personnel, and perhaps other resources be made to reflect, learn, update documents and plans, and share findings. This is a balancing act for all project managers (see "Balancing the Art and Science of Project Management").

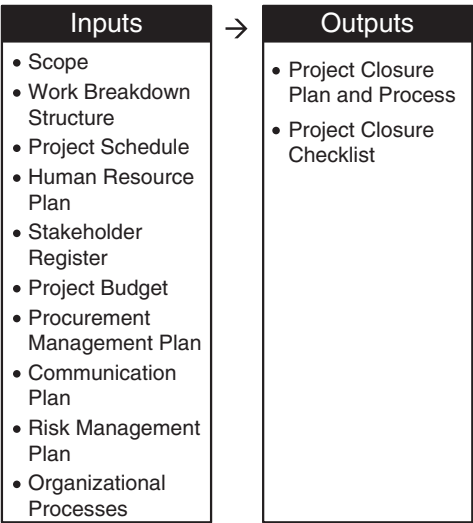


Figure 13.4: Project Closure Inputs and Outputs

Balancing the Art and Science of Project Management

There is a long-standing debate as to whether project management is a science. Indeed, over the years, there have been scientific protocols added to the work of project management. Consider the use of time estimating techniques, measuring project performance with earned value management calculations, and planning resource allocation needs relative to work effort. All of that is science. However, the sum of all of that does not make project management. There is also the importance for project managers to enable teams, navigate organizational politics, motivate and encourage people to thrive, and communicate effectively across diverse stakeholders and groups. That is all leadership and that is all art.

The reality is, project management is not an “either-or” equation, but rather a “both-and” need when it comes to art and science. The best project managers balance the science of management with the art of leadership. These managers know when to push for absolute use of project tools and when to lighten up to fit readiness of the team and organization’s culture. That’s balancing art and science.

Any project closing plan should include the following sections or categories of content:

- Executive Summary
- Project Scope and Business Objectives

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- Start and End Dates of Project Phases of Work
- Project Completion Criteria and Metrics
- Project Closure Deliverables
- Project Closure Documentation
- Project Closure Resources
- Project Closure Communication Plan
- Final Approval

It is important to note here that the closure plan will (at the completion of the project) turn into the basis of the project closure report. So, in essence, using this outline enables the project manager to plan (or start) with the end in mind. The following describes each of the sections.

Executive Summary

It details the project closure work effort, the timing of such work, and the business value of its use. Additionally, this summary outlines key findings, issues, best practices, recommendations, and lessons learned.

Project Scope and Business Objectives

It summarizes the scope of the project and the key business objectives aiming to be met. This detail explains stakeholders and groups (inside and outside the organization) impacted by the project and aims to align deliverables and project work outcomes to business goals. It is important that any objective detailed in this section be plainly written, unambiguous, and specific to the point of being measurable with tools such as the project charter (Chapter 3), project business case (Chapter 3), and work breakdown structure (WBS) or program work breakdown structure (PWBS) (Chapter 5) contain the necessary information for this section.

Start and End Dates of Project Phases of Work

It summarizes the estimated start and end dates of the project. Some project managers may also choose to illustrate a milestone view of the project schedule in this section. Doing so helps to highlight the critical timing of the project work and at which points closure activities will be used. Being clear in this section about project closure events helps to ensure that project resources (especially personnel) are available for such work prior to being reallocated to other initiatives.

Project Completion Criteria and Metrics

This section details both project and business measures and metrics that will be used to evaluate project completion. A simple table (see Table 3.2) is most often used to denote the activity or deliverable being reviewed, the criteria used to determine completion, and any metrics used in the completion determination. Having this level of detail creates unambiguous means by which a project can be deemed successful.

Project Closure Deliverables

This section outlines two major closure needs. First, this section serves as a checklist for review of all project deliverables and whether or not each has been completed. Second,

Table 13.2: Project Completion Template		
Activity/Deliverable	Completion Criteria	Completion Metrics

it identifies the handoff necessary to release project deliverables to operational owners. A simple table, such as the template shown in Table 13.3, is most commonly used to capture such detail. Highlighted will be any outstanding items such as those not complete or not yet ready for handoff. Such items will be accompanied with recommendations and actions for resolution.

Project Closure Documentation

Any project document should be reviewed for completeness, updated, and archived. To do so, a document or artifact register should be detailed at the planning phase of the project and updated throughout the project cycle. This section of the plan should include that register, clearly noting the owner(s) during the project and post project, the location of the artifact, and keep track of the updates or versions of the artifacts as the project matriculates its life cycle.

Project Closure Resources

This section outlines the resources needed for closure activities. Planning for the use of resources early in the project helps to ensure their availability at the time of closing activities. Again, a simple table (see Table 13.4) will suffice for planning purposes.

Project Closure Communication Plan

This section details the communication necessary to broadcast all lessons learned, key takeaways from the project work, new best practices, and any updated tools, templates, or other artifacts. A simple table (see Table 13.5) outlining key aspects of the communication plan can help serve as a summary view of all messaging (see Table 3.5).

Final Approval

This section is a placeholder for final sign-off of project closure. It is a formality that is often signed singularly by the project sponsor or jointly by the sponsor and operational

Table 13.3: Project Closure Deliverables Template			
Deliverable	Operational Owner	Complete	Handoff Plan

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Table 13.4: Project Closure Resource Template			
Resource Name	Closure Activity Responsibility	Allocation Approved	Duration of Work Effort

Table 13.5: Project Closure Communication Template				
Owner	Message	Audience	Distribution Method	Timing

leader assuming responsibility of the project deliverables. A name, signature, and date are the items most often captured and, once obtained, signal the formal closure of the project and release of all resources.

Using the Closure Plan and Checklist

It is incumbent on the project manager to use the closure plan and checklists as tools: tools to help negotiate the need for resource allocation for such work and tools to support the monitoring function of the project and expedite the review of work completion. As noted earlier, detailing the tool and using the tool is a balancing act between art (leadership) and science (management). The intent is to validate completion of work and readiness for handoff while simultaneously codifying lessons learned and sharing them for enterprise value. Use just enough rigidity necessary to capture this work, while maximizing latitude to project personnel necessary to complete the work.

Benefits

Handoffs, handovers, decisions, deliverables, and a myriad of other important activities occur throughout the project. Using the closure plan and checklist can mean the difference between project success and failure. Importantly, beyond the project itself, following a proper plan and checklist can create a distinctive advantage for a company by means of learning faster than competitors. Learning faster can translate into faster time to markets with products, higher quality of services offered to customers, and increased margins due to lower project expense ratios.

THE PROJECT CLOSURE REPORT

Most project sponsors expect a final project report. When completed properly, the project closure plan (discussed previously) manifests into the project closure report (see Figure 13.5). This tool is important in that it is the final report of the project that formalizes the closure of the project. It confirms not only the completion of the project, but also the acceptance of the project handoff from the project team to the operational owner or client.

Developing the Project Closure Report

The project closure report is a documented review of the entire project. It highlights the completion of project work. It should also highlight any variance between what was planned and what was actually accomplished. Such variances may be in the form of schedule, cost, resource utilization, and other pertinent measures and metrics. It should also highlight the likelihood of application of the project outcome(s) achieving the initially noted business case problem or opportunity. Noting all of this can follow the same outline and format as the project closure plan, which is outlined again here for convenience:

- Executive Summary
- Project Scope and Business Objectives
- Start and End Dates of Project Phases of Work

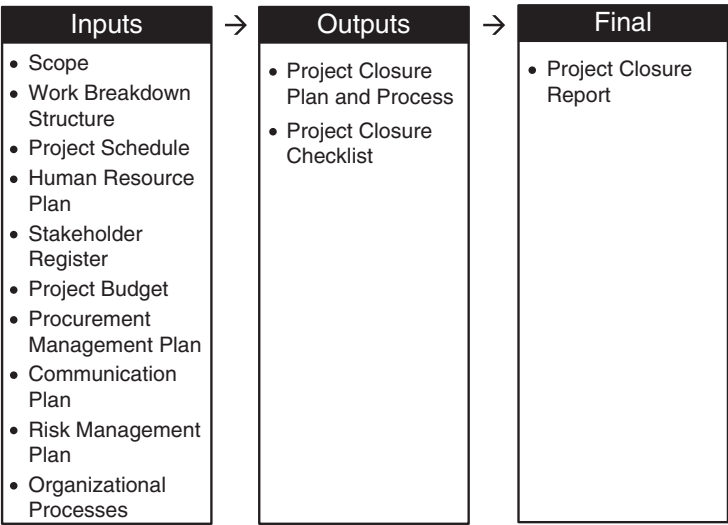


Figure 13.5: Manifestation of the Project Closure Report

- Project Completion Criteria and Metrics
- Project Closure Deliverables
- Project Closure Documentation
- Project Closure Resources
- Project Closure Communication Plan
- Final Approval

In addition to the tables and checklists outlined in the prior section, you may choose to summarize major closure activities into an executive level checklist. This executive level view of the project would summarize the milestones, deliverables, key decisions, handoffs and signoffs, and other pertinent aspects of the project. This level could aggregate such accomplishments as all deliverables or it may be necessary (depending on the project, the project manager’s preference, and the sponsor’s request) to detail each milestone and deliverable individually, rather than in aggregate.

Table 13.6 illustrates a sample executive level checklist used in a project closure report. As noted, the content and level of detail will likely vary from project to project, but this illustration provides a general view of the checklist.

In addition to the checklist and other aspects of the report already noted, project managers should also detail any business or stakeholder implications because of the project. There may be known positive or adverse effects to other projects, products, teams, or resources because of the outcome of your project. Conducting a thorough investigation and deriving a resolution to such implications may be outside of the scope of the project being closed out; however, detailing such implications to make them known is certainly within the scope of the project team and expectations of project work.

Table 13.6: Project Completion Template		
Item	Complete (yes/no)	Notes or Actions
All deliverables complete		
All milestones complete		
All contracts closed out		
All issues resolved		
All handoffs signed off		
All payments made		
All invoices submitted		
All accounts closed		
All artifacts updated		
All lessons learned gathered, documented, and shared		
All personnel reassigned		
All excess materials disposed of or stored		
....		

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Further, in developing this report, the sponsor or stakeholders may request a presentation to accompany the final report. Therefore, as the report is being planned and detailed, be mindful about how the report may be converted into a presentation format for use.

Using the Project Closure Report

A project closure report starts in the planning phase of the project's cycle. If nothing else, project managers use the planning phase to understand what the project sponsor and other stakeholders need at the closing of the project. This insight guides the project manager in knowing what to deliver in the project closing report. The primary use of the report is for sponsor signoff for project completion and for permanent documentation of project results.

Although the report can be planned at the beginning of the project, it is not until the end that it is fully documented to completion. In between planning and closing, the project manager must use discretion to periodically update the report. Doing so may expedite some time at the end. However, even if a decision is made to wait until the end, the project closing plan and checklists (outlined earlier) should be used throughout the project. At the end of the project, these checklists can be used to complete all necessary components of the closing report.

Seasoned project managers know that closing out a project can heighten emotions. The longer the project in duration, the more personnel have the opportunity to galvanize a culture, build relationships, and grow attached to "my" project. The closure of the project signifies a transition. What was once assumed as "my" project is now going to be closed. There may also be a sense of uncertainty in terms of resource allocation. The finish of one project usually means the start of something new and anything new can be emotionally challenging.

To address such concerns, project managers should work hard to meet with team members individually as well as in groups and the entire team. Spend time listening to each team member and help them celebrate the successes of the project, learn from the shortcomings of the project, and motivate them to embrace what is next. Remember that closing a project is more than just handing off ownership to an operational team or customer. As a project manager, it is also about helping your team move on to their next project assignment.

Benefits

One of the most frustrating aspects of managing projects is leaving work undone. The project closure report finalizes all work. There are benefits of the report for the project team and its stakeholders. From a sponsor perspective, the benefit of the report is having a summarized document of the entire project. For the end user or operational team, it is an official handoff of ownership. For the project manager and team, it outlines a clear point of transition to work on other projects. For other project teams, there is value in gaining lessons learned and best practices as well as identifying any implications from the closure of the project. Finally, as was noted in the project closure planning section, using the closure report can create a distinct advantage for a company by means of learning faster than competitors.

THE POSTMORTEM REVIEW

Sometimes called the post project review or post-implementation review, the project postmortem goes by many names. Regardless of what you call it, the project postmortem is a review of a project after the project closure acceptance, after all project closure activities are complete, and after the project has been in operational mode for a period of time. The purpose of such a review is to determine the following:

1. Was the project successful?
2. Were all closure activities handled properly, especially any final handoffs from the project team to the operations team or customer?
3. Were lessons learned captured and transferred to project teams across the enterprise properly?
4. Has the project achieved planned operational outcomes—the business goals and objectives outlined in the project’s business case?

As can likely be imagined, a postmortem review can be rather stressful, especially if the project was not deemed successful. In such events, individuals could engage in finger-pointing, placing blame, dodging responsibility, skirting accountability, and miss all opportunity for learning, growth, and improvement. Because of the probability of such a negative event, it is the responsibility of the project manager to work with the project sponsor and operational team leadership to ensure that an honest postmortem review occurs without negativity.

To establish an honest and positive postmortem review, the project manager, sponsor, and team must work from the very beginning of the project to cultivate a positive culture: a culture of team, a culture of we are in this together as compared to “us” versus “them,” a culture of how can we win together rather than how can I make sure I win and you lose. With this in mind, we can add one more element to our inputs-outputs illustration to capture how the postmortem work will leverage earlier project work. Figure 13.6 illustrates how early planning documents can be used for postmortem review work.

Conducting the Postmortem Review

The three steps most associated with the postmortem review are: (1) gather feedback from project and operational teams, (2) organize and facilitate a meeting among the teams and key stakeholders, and (3) capture the meeting outcomes in the form of a postmortem report.

Gathering Feedback

Feedback is important in general, but it is especially important for a postmortem review. Thoughts and opinions from team members are also important, but more so are facts about the project and operations. In order to get the facts, the project sponsor and operations leadership should identify a well-respected and nonbiased person to gather information among the project team members and stakeholders. This same person may

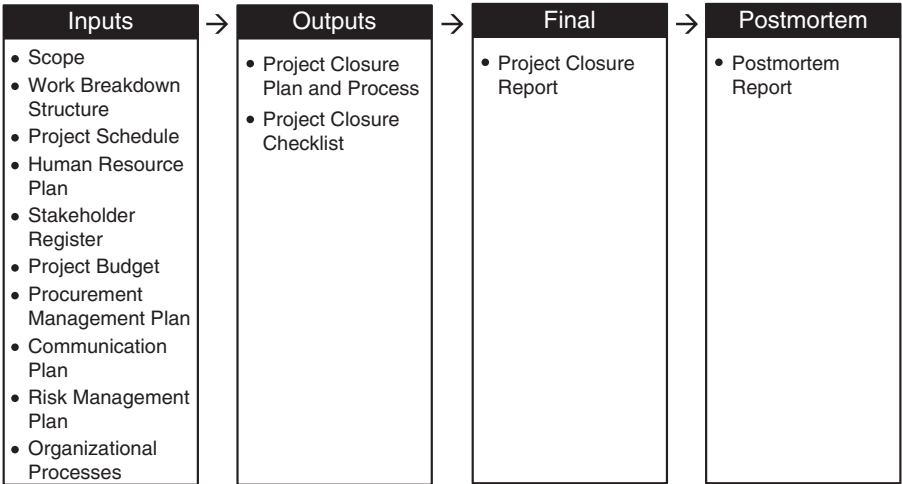


Figure 13.6: The Cycle of Closure Work

be used to facilitate the postmortem meeting. We do not recommend that the project manager be the postmortem review facilitator.

Gathering feedback ahead of the meeting will help to expedite the meeting and provide the facilitator with a sense as to how the meeting will go—will it be emotionally charged and negative or will it be productive, future focused, and positive? The three standard questions used when gathering feedback in preparation for the meeting are:

1. What went right that should be considered best practice and used during every project?
2. What went wrong and should be used as a leading indicator metric of project problems?
3. What should be done differently on the next project?

There are a number of different ways in which these questions can be worded and facilitated, but in general, these are the three primary questions used in postmortem reviews. This information can be gathered from face-to-face interviews, e-mail or web-based surveys, and from the review of prior lessons learned documentation if gathered throughout the project’s life cycle.

Conducting the Meeting

The postmortem meeting can either feel like a celebration or a poor performance review. It will be a celebration if things have gone well. Due to poor execution however, missing business goals while in operations, personality conflicts, organizational politics, or a number of other variables, the postmortem meeting could be negative. It is for this reason a neutral and expert facilitator is recommended to oversee such meetings. This individual can summarize feedback gathered ahead of the meeting and dive into the details necessary to obtain real meaning and insight on what to do better

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during future projects. The aim of the meeting is to uncover ways to make project work better and strengthen the culture of the individuals involved. Expert facilitators can navigate the challenging conversations of an otherwise negative postmortem review and have participants leave the meeting feeling good about improvements for future projects.

Documenting the Postmortem Report

The postmortem report is an important artifact. It needs to strike a balance between pithy-level documentation and an overly burdensome article. Best practices suggest the document not be summarized in bullet points, but rather written in a narrative form of what to do and what not to do. Bullet points run the risk of being too ambiguous, whereas a narrative that is properly categorized can provide a richer context of lessons learned, thus making them easier to read, easier to contextualize, and easier to apply. Further, this report should be provided to project and operational teams beyond those represented in the postmortem meeting. The idea of the report is to benefit all teams as an enterprise asset, not just those involved in the postmortem.

The Top-Ten Best Practices for Postmortem Success

1. *Start early.* Make sure the postmortem work effort is part of the project's resource plan and schedule.
2. *Establish your team culture.* Establish ground rules and expectations of one another as you onboard project team members and stakeholders.
3. *Know your measures of success.* Work with your team and customer to identify the questions that will be raised during the postmortem so that there are no surprises.
4. *Use experts.* Since it is often difficult to facilitate a meeting and document the meeting and do so without bias, use an expert facilitator, scribe, and others during the postmortem review.
5. *Ensure representation.* Make sure the key members from the project team and operational team are present and comfortable in sharing their thoughts, ideas, and opinions openly and productively.
6. *Everyone contributes.* Conduct the postmortem in a way that everyone participates without peer pressure or senior leader persuasion.
7. *Work from facts.* Make sure facts are known and have any comments facilitated to the point of it being fact-based rather than subjective opinion.
8. *Focus on the future.* While the postmortem is a reflection of past events, the primary focus is on how to make future projects better and therefore the majority of time should be spent on what should be done differently next time.
9. *Detail the conversation in narrative form.* Rather than high-level bullet-point summaries of the conversation, have the meeting detailed

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in a narrative report because stories make for easier learning than bullet points.

10. *Broadcast your results.* Be sure to share the postmortem report with other project teams and archive in an easily accessible database for other project managers to use.

Many facilitators of postmortem reviews find that using a checklist can be helpful throughout the postmortem process—from gathering feedback to conducting the meeting to documenting the final report. The sample checklist in Table 13.7 offers questions that go beyond the three (high-level) standard questions noted earlier in this section.

Depending on the response to each question in the postmortem checklist questionnaire, follow up or probing questions can (and should) be asked. For example, if any question is answered “no” the facilitator should ask, what should be done differently on the next project to ensure this occurs? The facilitator could also ask if there were any leading indicators of a problem.

Using the Postmortem Review

Like the project closure report, the best postmortem review meetings and final reports start in the planning phase of the project. Experienced project managers know to plan properly at the beginning phases of the project’s cycle to help ensure that resources (time and personnel) are allocated for work after the project becomes part of operations (or customer) use. The actual postmortem work effort is conducted three to six months after the final handoff from the project team to the operations team or customer. The timing between the project handoff and postmortem work is necessary in order to allow the operations team enough time to realize the value and benefit from the project.

It is important to note that while the tools and templates outlined for postmortem work facilitate a reflection of the past, the focus during this work is on the future. The reflection of the past can mostly be gleaned from the project closure report and a short conversation with key project team members and stakeholders. Therefore, the effort and workload associated with postmortem activities should be minimal. While the workload is often minimal, the results from the work can be very dramatic. The tools, and especially the postmortem review meeting, should focus on leveraging experiential knowledge to make future projects better (more efficient and effective), create higher-performing project teams, and increase business value.

Most postmortem meetings have a duration of anywhere from one to four hours. The larger and more complex the project, the longer the postmortem meeting may take. Although it may be assumed at these meetings, it is important for the facilitator (or the project sponsor) to emphasize the need for an honest, candid, and objective discussion and to focus on process and not people. These behavioral ground rules serve as guidelines for participants and the facilitator. Such ground rules establish a

Table 13.7: Project Postmortem Checklist Questionnaire		
Category	Question	Notes
Project planning	<ol style="list-style-type: none"> 1. Did the business case clearly detail the problem or opportunity? 2. Were business goals and project objectives clear and measureable? 3. Was the project scope, schedule, budget, and quality clearly detailed? 4. Were project plans detailed, accurate, and usable? 	
Customer focus	<ol style="list-style-type: none"> 5. Was the voice of the customer evident in all phases of the project? 6. Did deliverables and milestones meet customer (and stakeholder) target expectations? 7. Was communication with customers effective? 	
Deliverables	<ol style="list-style-type: none"> 8. Did the outcome (all outputs) of the project meet your expectations? 9. What gap or variance (if any) exists between your expectations and the final deliverable? 10. Were project monitoring and controlling efforts effective? 	
Scheduling	<ol style="list-style-type: none"> 11. Was planning and scheduling resources for the project effective? 12. Was there a visible schedule available to “see” milestones and critical project work? 	
Resourcing	<ol style="list-style-type: none"> 13. Was the project resourced properly? 14. Was the team effective? Would you describe the team as “high performing”? 15. Was there a skills assessment conducted to determine resource need? 16. Was there clarity in roles, functions, responsibilities, and proper awareness of interdependencies? 17. Was there active (proper) senior management support? 	
Managing risk	<ol style="list-style-type: none"> 18. Was there a deliberate risk management plan and process in use? 19. How effective was the planning and management of risks? 20. Were contingency plans in place and effective for all risks? 	
Communication	<ol style="list-style-type: none"> 21. Was there an effective communication plan for the project? 22. Was there proper stakeholder management (analysis and monitoring)? 23. Was communication (to the team, to sponsors, to all stakeholders) effective? 	
Decisions	<ol style="list-style-type: none"> 24. Was there a clear decision making process (including an escalation process) in place and used? 25. Were decisions made fast enough? 	
Other	<ol style="list-style-type: none"> 26. What are your most critical lessons learned from this project? 27. ... 28. ... 	

constructive atmosphere for discussion and learning. These ground rules also help to prevent personal attacks that disengage participants and disable learning.

In addition to the information gathering ahead of the meeting and ground rules for use during the meeting, a prerequisite for an effective postmortem review is a well-crafted agenda. The agenda will certainly vary based on findings from the information gathering work effort. The following bullet points, however, offer a sample agenda for a postmortem review:

- Welcome and introduction of everyone.
- Review of the ground rules by the facilitator.
- Summary of information gathering findings from the facilitator (this information should be sent to participants in advance of the meeting if at all possible).
- Review and rank issues and critical success factors.
- Create a “what went wrong” list.
- Create a “what went right” list.
- Detail opportunities for improvement with specific (actionable) recommendations.
- Outline specific points of communications and next steps.

The facilitator can manage this agenda in a number of ways. For example, all items can be addressed in an open, round-table conversation. As an alternative, the facilitator could conduct this meeting as a workshop in which case participants are much more active. However the postmortem review is conducted, it should fit the organizational culture and conversational tone necessary to achieve the end results, which is individual, team, and organizational learning.

Variations

It has been noted that project managers often address project closure work at the end of projects rather than throughout the life cycle of projects. One of the best practices for periodically evaluating a project’s progress toward meeting business goals is the use of a retrospective process.

Retrospectives are a series of events where team members who have a perspective to share meet at critical points during the project cycle to discuss what is working and what needs to be improved. The intent is to capture key lessons while a project is in flight, and apply improvements during the remainder of the life cycle.⁵

Retrospectives differ from the more traditional postmortem activities. In many companies, a project postmortem is held following the conclusion or cancellation of a project. Because this meeting occurs at the end of the project, it is too late to implement corrections on that project. At best, learnings can be applied to the next project. In our experience, the postmortem is many times held as an afterthought without a defined, objective process and does not lead to actionable change to project team practices.

There are significant advantages of using the retrospective process. First, consider that many times teams focus only on the negative aspects of their performance and forget the positive. Retrospectives also explore what is working well on a project, and ensures the practices are reinforced and repeated. Second, retrospectives allow an organization to make positive changes to projects that are currently in flight; therefore, they

don't have to wait several months or more to realize the benefits of their learnings. Third, teams learn best when they solve immediate problems. As part of the retrospective method, teams focus on the few but critical opportunities to improve, and develop specific action plans to drive changes in their practices. These action plans are owned by various members of the project team who drive them to implementation.

One of the reasons retrospectives are quite effective is the use of a trained facilitator who is an expert in extracting the key issues and learnings from a diverse and distributed workforce. When applied most effectively, a trained, objective facilitator—someone other than the team leader—guides the team through an analysis of what is working well and what is not, and then helps the project team generate ideas for improvement and what they want to do differently moving forward.

The project retrospective is an organizational learning activity. Whether an organization uses the retrospective method or another method to capture its organizational learnings is not the most critically important factor in creating a learning organization. What is important is that the organization consistently invests the time and effort to stop, reflect, learn, and improve continuously over time.

Establishing a consistent practice of holding retrospective reviews will lead to the identification of many improvements needed for project success. Execution of the improvements should be approved by the project governance body, and then implemented within the organization and on targeted projects in a methodical manner. Improvements should be implemented as quickly as possible to reap benefits, but care must be taken to prevent more change than the organization is able to absorb at any one time.

Benefits

Projects are difficult to initiate, plan, execute, and close without issue. Mistakes, missteps, and errors will happen. When such issues arise, it is important to stop, reflect, and learn how to prevent it from happening again. Many great things happen on a project as well and should not be lost, but instead repeated on future projects. Without learning, we are doomed to repeat mistakes and forget success. Learning is a core function of project closing. Transferring learning from one project to the next will continuously increase the probability of success.

With the lessons learned from past projects helping to increase the probability of future project success, we can see the postmortem work serving as a linchpin in an organizational knowledge management process. With this understanding, the project life cycle can be reconfigured from a linear view to a process view, as illustrated in Figure 13.7.

The opportunity for learning from the postmortem review process is significant. It is because of the learning aspect of postmortems that most organizations associate these processes as being part of knowledge management.⁶

As noted, learning is a core function—and benefit—of postmortem work. This can be viewed as a long-term benefit. The short-term benefit is making sure the final project handoff to the operations team (or customer) was done so effectively. The relatively low work effort associated with postmortem activities is shadowed by the value added from the effort. Postmortem work can establish greater levels of team performance,

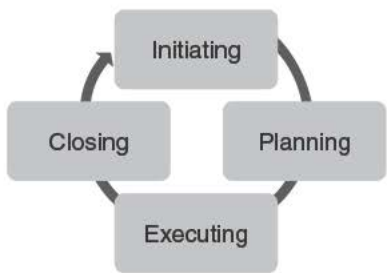


Figure 13.7: The Life Cycle of Project Learning

strengthen core principles and values of an organization, and foster a continuous learning and improvement mindset from project work.

CONCLUDING REMARKS

In this chapter, we presented three tools—the project closure plan and checklist, project closure report, and project postmortem. Additionally, a section on project retrospectives was detailed.

Each of the tools is designed with a distinct purpose. Collectively, as part of project closing work, they all serve to ensure that proper completion of work and handoffs occurred and importantly that lessons learned were captured and shared as an enterprise asset—a competitive distinction. As a set of complementary tools, they enable monitoring, reporting, and controlling of project risk. They also help us study the implementation and learn lessons for continuous improvements.

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