Technical project

A technical project is one that includes engineering elements, technical hardware components, software elements, and or data management requirements. Actually technical component management seems to be a part of almost every project.

What Is Technical Project Management?

All project managers must possess organizational prowess, leadership capability, and communication skills to be successful. When it comes to IT projects, you can add technological knowledge and expertise to the equation. Technical project management is a unique branch of the field that comes with its own challenges and opportunities.

Technical project management is the process of managing IT or IT-related projects. Technical project managers are critical to the conception, development, and execution of these projects. In addition to understanding the technical content of the project, they must handle all the duties normally ascribed to project managers, such as:

- Planning
- Scheduling and timeline maintenance
- Execution
- Managing the budget
- Communication with stakeholders
- Ongoing maintenance

Anyone interested in technical project management will need to balance a high level of technical capability with soft skills such as leadership, time management, and big-picture thinking.

What special skills are needed for technical project management?

Anyone in technical project management will need to have some training and experience in hardware and software installation, upgrades, and internal and external site maintenance. Experience in the development and rollout of new websites, upgrades, and features would be helpful. Familiarity with popular and relevant technologies, applied methodologies, and development models within the organization's context are also critical to a technical project manager's success.

Certifications in technical project management

Obtaining a certificate can help IT professionals move into the technical project management space. Some relevant certifications include:

- Project Management Professional (PMP)
- CompTIA Project+ certification
- PRINCE2 Foundation/PRINCE2 Practitioner

- Project Management in IT Security (PMITS)
- Certified Project Manager (CPM)

How to Effectively Track Project Progress for Success?

1. Make it a team effort

Everyone on your team wants the same thing: a successful project. With that in mind, get everyone involved by holding a kickoff meeting, sharing your vision and the client's motivations, and soliciting input from your team. It's especially important that your project team members contribute to establishing your goals since it is largely up to those individuals to meet the project goals.

2. Utilize reporting tools to monitor project progress

It is extremely helpful to utilize a project management software to generate automatic reports on your progress. Rather than you assessing progress toward deadlines individually or attempting to calculate percentages of completion, a project reporting feature in the project management system can give you accurate information in just a few clicks.

3. Establish good goals

You can't track what you haven't established. Good goals are realistic, clear, and measurable. Write down a rough sketch of your project objectives, and then examine them to see if they meet the following requirements:

Realistic– Having lofty goals is good, and stretch goals can be a great way to challenge your team, but always keep things realistic. You don't want to make promises to your clients that you can't keep. Ask yourself: Can we accomplish this goal with the allotted time and resources available to us?

Clear– Many project managers cite a lack of clear goals as the most common cause of project failures. Ask yourself: Do we know exactly what is being asked of us? Does everyone on the team understand?

Measurable– It's not enough to say "finish phase one in a timely manner" or "increase capacity" for example. You need numbers. Decide what date phase one should be completed and establish your baseline, acceptable, and ideal numbers for capacity. Ask yourself: Are there quantifiable indicators with which we can judge each goal?

4. Make the project visible

One of the best ways to promote success is to make the project visible to everyone on your team. It's extremely motivating when your team can see the goals they've helped establish as well as the progress being made (or not made) toward those goals. The Kanban method is a simple and effective visual system for organizing workflows. It helps prevent bottlenecks, encourages incremental improvements, and balances demands against available capacity. Kanban boards can be physical in the form of sticky notes placed on an empty wall, or you can go digital with online workplaces shared around the globe.

First, identify the steps or project phases of your workflow and create a column for each one. Second, create a card for each task or project element that needs to be completed. Third, put your cards into the columns that represent where each task or project stands in the workflow. As tasks move from one phase to the next, move the card to the next column until it has passed through all the phases of your workflow. Everyone on the team can see at a glance how tasks are moving through the phases. This lets each team member know who's waiting, who needs help, what tasks are late, and what needs to be done next.

5. Check-in with your team regularly

Be consistent. Don't be tempted to "set it and forget it." Create a project schedule for yourself to check in on the goals you've created with your team. Deadlines are obvious points, but if you wait until the deadline, it will be too late to course-correct. Instead of taking this reactive approach, be proactive.

Set appointments for yourself to measure progress at regular intervals throughout the project. Then you can address issues early on and keep your project on track.

What Is Cost Estimation?

In project management, cost estimation is the summation of individual cost elements, using established estimating methods and valid data, to estimate the future costs of a project, based on what is known today.

It further defines the basic characteristics of credible cost estimates as including:

Clear identification of tasks

Broad participation in preparing estimates

Availability of valid data

Standardized structures for the estimates

Provisions for program uncertainties

Recognition of inflation

Excluded costs

Independent reviews of estimates

Revision of estimates for significant program changes

Why Is Cost Estimation Important?

Cost estimation and cost management are an essential part of project management. The project manager is responsible for making the most accurate project budget possible by using a work breakdown structure (WBS) and cost estimation techniques to visualize the project scope and then assign costs to each project task. Knowing the project scope will help not only in the planning phase but throughout the project life cycle, especially during executing, monitoring and controlling a project.

Having a cost estimation process is how project managers are able to achieve the goals and objectives of the project set forth by executives and project stakeholders. The project budget will collect indirect costs and direct costs as it estimates the overall cost of delivering the project on time and meeting quality expectations. That means, whatever you're going to need to make the project successful will be thought through during the cost estimation process.

Cost Estimation Techniques

All of these factors impact project cost estimation, making it difficult to come up with precise estimates. Luckily, there are cost estimating techniques that can help with developing a more accurate cost estimation.

Analogous Estimating

Seek the help of experts who have experience in similar projects, or use your own historical data. If you have access to relevant historical data, try analogous estimating, which can show precedents that help define what your future costs will be in the early stages of the project.

Parametric Estimating

There is statistical modeling, or parametric estimating, which also uses historical data of key cost drivers and then calculates what those costs would be if the duration or another of the project is changed.

Bottom-Up Estimating

A more granular approach is bottom-up estimating, which uses estimates of individual tasks and then adds those up to determine the overall cost of the project. This cost estimating method is even more detailed than parametric estimating and is used in complex projects with lots of variables such as software development or construction projects.

Three-point Estimate

Another approach is the three-point estimate, which comes up with three scenarios: most likely, optimistic and pessimistic ranges. These are then put into an equation to develop an estimation.

Reserve Analysis

Reserve analysis determines how much contingency reserve must be allocated. This approach tries to wrangle uncertainty.

Cost of Quality

Cost of quality uses money spent during the project to avoid failures and money applied after the project to address failures. This can help fine-tune your overall project cost estimation. And comparing bids from vendors can also help figure out costs.

Dynamic Tools

Whenever you're estimating costs, it helps to use an online software to collect all of your project information. Project management software that can be used in congress with many of these techniques to help facilitate the process. Use online software to define your project teams, tasks and goals. Even manage your vendors and track costs as the project unfolds. We'll show you how.

How to Estimate Costs in 10 Steps

The U.S. government has identified a 12-step process that results in reliable and valid cost estimates for project management. Those twelve steps are outlined below.

1. Define Cost Estimate's Purpose

Determine the purpose of the cost estimate, the level of detail which is required, who receives the estimate and the overall scope of the estimate.

2. Develop Estimating Plan

Assemble a cost-estimating team, and outline their estimation techniques. Develop a timeline, and determine who will do the independent cost estimate. Finally, create the team's schedule.

3. Define Characteristics

Create a baseline description of the purpose, system and performance characteristics. This includes any technology implications, system configurations, schedules, strategies and relations to existing systems. Don't forget support, security, risk items, testing and production, deployment and maintenance, and any similar legacy systems.

4. Determine Cost Estimating Techniques

Define a work breakdown structure (WBS), and choose an estimating method that is best suited for each element in the WBS. Cross-check for cost and schedule drivers; then create a checklist.

5. Identify Rule, Assumptions and Obtain Data

Clearly define what is included and excluded from the estimate, and identify specific assumptions.

6. Develop Point Estimate

Develop a cost model by estimating each WBS element.

7. Conduct Sensitivity Analysis

Test sensitivity of costs to changes in estimating input values and key assumptions, and determine key cost drivers.

8. Conduct Risk and Uncertainty Analysis

Determine the cost, schedule and technical risks inherent with each item on the WBS and how to manage them.

9. Document the Estimate and Present to Management

Have documentation for each step in the cost estimate process to keep everyone on the same page with the cost estimate. Then you can brief the project stakeholders on cost estimates to get their approval.

10. Update Cost Estimate

Any changes to the cost estimate must be updated and reported on. Also, perform a postmortem where you can document lessons learned.

What is a project schedule?

A project schedule provides a general overview of your project, including the timeline, project tasks, dependencies, and assigned team members. Essentially, a project schedule should be able to tell you everything you need to know about your project at first glance. By outlining all the high-level details and components of your project, you can track project progress in real-time and ensure that you're on track for success.

Steps to create a project schedule

When you begin planning and drafting your project schedule, you want to include all project activities. At first, the project management scheduling process may feel a bit foreign to you—that's normal! By following these steps, you can get more comfortable creating your own process for project schedule development, and use it every time you plan a project.

1. Define your project goals. Write down key milestones or deliverables that will make this project successful in the end.
2. Identify all stakeholders. Make a list of every person that needs to interact with the project team, even if their role is a simple sign-off.
3. Determine your final deadline. Decide when you need to be completely finished with the project. Be sure to give yourself enough time to account for conflicts or changes that might come up later during schedule management.

4. List each step or task.Take those milestones and deliverables you defined in the first step and break them down into smaller tasks and subtasks to be sure all bases are covered.
5. Assign a team member responsible for each task. Decide who will take on each task and subtask, and be transparent with deadlines. Remember that your colleagues likely have other projects going on at the same time. Be mindful of their workload so they don't feel overloaded.
6. Work backward to set due dates for each task. Figure out how long each task will take to complete (its start and end date), knowing that delays are inevitable. Sequencing is important to consider as well since certain tasks will need to be finished before another can start.
7. Organize your project schedule in one tool, and share it with your team.

What Is Project Evaluation?

Project evaluation is the process of measuring the success of a project, program or portfolio. This is done by gathering data about the project and using an evaluation method that allows evaluators to find performance improvement opportunities. Project evaluation is also critical to keep stakeholders updated on the project status and any changes that might be required to the budget or schedule.

ProjectManager is a robust project management software that has all of the tracking and reporting features you need for your project evaluation process. Our real-time dashboard allows you to keep track of costs, tasks and budgets and you can create reports in minutes. Get started for free today!

Project Evaluation Methods

There are three points in a project where evaluation is most needed. While you can evaluate your project at any time, these are points where you should have the process officially scheduled.

1. Pre-Project Evaluation

In a sense, you're pre-evaluating your project when you write your project charter to pitch to the stakeholders. You cannot effectively plan, staff and control a new project if you've first not evaluated it. Pre-project evaluation is the only sure way you can determine the effectiveness of the project before executing it.

2. Ongoing Project Evaluation

To make sure your project is proceeding as planned and hitting all of the scheduling and budget milestones you've set, it's crucial that you constantly monitor and report on your work in real-time. Only by using project metrics can you measure the success of your project and whether or not you're meeting the project's goals and objectives. It's strongly

recommended that you use project management software for real-time and ongoing project evaluation.

3. Post-Project Evaluation

Think of this as a postmortem. Post-project evaluation is when you go through the project's paperwork, interview the project team and principles and analyze all relevant data so you can understand what worked and what went wrong. Only by developing this clear picture can you resolve issues in upcoming projects.

Project Evaluation Steps

Regardless of when you choose to run a project evaluation, the process always has four phases: planning, implementation, completion and dissemination of reports.

1. Planning

The ultimate goal of this step is to create a project evaluation plan, a document that explains all details of your organization's project evaluation process. When planning for a project evaluation, it's important to identify the stakeholders and what their short-and-long-term goals are. You must make sure that your goals and objectives for the project are clear, and it's critical to have settled on criteria that will tell you whether these goals and objects are being met.

So, you'll want to write a series of questions to pose to the stakeholders. These queries should include subjects such as the project framework, best practices and metrics that determine success.

By including the stakeholders in your project evaluation plan, you'll receive direction during the course of the project while simultaneously developing a relationship with the stakeholders. They will get progress reports from you throughout the project's phases, and by building this initial relationship, you'll likely earn their belief that you can manage the project to their satisfaction.

2. Implementation

While the project is running, you must monitor all aspects to make sure you're meeting the schedule and budget. One of the things you should monitor during the project is the percentage completed. This is something you should do when creating status reports and meeting with your team. To make sure you're on track, hold the team accountable for delivering timely tasks and maintain baseline dates to know when tasks are due.

Don’t forget to keep an eye on quality. It doesn’t matter if you deliver the project within the allotted time frame if the product is poor. Maintain quality reviews, and don’t delegate that responsibility. Instead, take it on yourself.

Maintaining a close relationship with the project budget is just as important as tracking the schedule and quality. Keep an eye on costs. They will fluctuate throughout the project, so don’t panic. However, be transparent if you notice a need growing for more funds. Let your steering committee know as soon as possible, so there are no surprises.

3. Completion

When you’re done with your project, you still have work to do. You’ll want to take the data you gathered in the evaluation and learn from it so you can fix problems that you discovered in the process. Figure out the short- and long-term impacts of what you learned in the evaluation.

4. Reporting and Disseminating

Once the evaluation is complete, you need to record the results. To do so, you’ll create a project evaluation report, a document that provides lessons for the future. Deliver your report to your stakeholders to keep them updated on the project’s progress.

How are you going to disseminate the report? There might be a protocol for this already established in your organization. Perhaps the stakeholders prefer a meeting to get the results face-to-face. Or maybe they prefer PDFs with easy-to-read charts and graphs. Make sure that you know your audience and tailor your report to them.

Annexure and Appendix

An **appendix** can be understood as that section added at the end of of the book or report which contains subsidiary matter relating to the main idea of document or book. It contains data which is not very essential to explain your findings, but it supports the analysis, assists the user to understand the research work and provides background material.

On the other hand, an **annexure** implies a set of legal documents or proofs which are attached to the main document, so as to confirm the details provided in the main body.

The basic difference between annexure and appendix is that while an annexure is an addition to the document, the appendix is an extension made at the end of the research work. Further, an appendix is much more concerned with the main document in comparison to an annexure.

References

A list of references is where detailed information about the various research sources mentioned in your document are itemized. This list allows readers to learn more about your sources and use the information to validate your research. A list of references contains the author(s), year of publication, title, publication information, along with the URL for each source.

Format Guidelines for Setting up a REFERENCES List
Here are some general formatting guidelines for setting up your references list:

- Create a bold heading called **References**, aligned with the **left** margin. If you are using headings, make this heading consistent with other first level headings in your document.
- The author's last name should be flush with the left margin, and the second and other lines of the entry must be formatted using the "hanging indent" function.
- Give all authors' names (up to five), but only use the first initial. The last name of each author is written first, followed by the author's initials. Separate names with commas, and include the ampersand (&) before the last author.
- Capitalize only the first word (and the first word after a colon, as well as proper nouns) in titles of **articles** within journals, magazines and newspapers**, chapters** in books**, conference papers**, and **reports**. Only use ALL CAPS for acronyms.
- Capitalize the first letter of all main words in the titles of **books, journals, magazines** and **newspapers**.
- Add a space between references if you single space each reference.

Copyright

Copyright refers to the legal right of the owner of intellectual property. In simpler terms, copyright is the right to copy. This means that the original creators of products and anyone they give authorization to are the only ones with the exclusive right to reproduce the work.

Copyright law gives creators of original material the exclusive right to further use and duplicate that material for a given amount of time, at which point the copyrighted item becomes public domain.

Acknowledgement

The meaning of acknowledgement in project is simply a section where the writer acknowledges and shows appreciation to everyone who has helped in the project. Acknowledgement is also included in research project writing to recognize and thank everyone involved in the research. With acknowledgement, you can express gratitude to the people or institutions whose contributions were valuable to the project's success.

How to write acknowledgement for project

Many people keep asking, how can I write an acknowledgement for my project? The truth is it is very simple. Writing an acknowledgement requires you to carefully consider the people

that need to be mentioned in the acknowledgement and the order in which you will mention them. Another important thing is that the writing of acknowledgement depends on the type of project you want to write an acknowledgement for. For example, when writing a final year project acknowledgement, the people you will mention in your acknowledgement will be different from the people you will mention when writing a research paper, etc.

Your acknowledgement must express your thoughts and must be very concise. You must use personal pronouns such as I, me, my, etc. Examples of people you should mention in your acknowledgement include: The main supervisor of the project. The second supervisor of the project, if any. If in a school environment, you should mention the academic staff in your department that was helpful. The support or technical staff in your department. Then you can mention other academic staff from other departments. Organizations, institutions, or companies.

Correspondence

Definition: A Correspondence is a written form of communication between two parties. In other words, it is way to pass on ideas in writing.

What Does Correspondence Mean in Business?
Correspondence is a commonly used form of communication in business. In the past, correspondence was mostly exchanged through written physical letters or telegraphs. In today's world, the definition of correspondence has expanded by the inclusion of digital media. E-mails, text messages, documents exchanged through social platforms and digital agreements are new ways to deliver correspondence.

The formal element embedded into these written methods of communication makes them appropriate to transmit important business information between businesses or from businesses to clients. Written letters, bills and invoices are still sent physically sometimes but many companies are migrating their correspondence to digital since it is cheaper and easier to track. Business correspondence also helps as evidence to solve misunderstandings. By having a paper trail, any of the parties involved in a transaction can review the previously stated information to ensure who misunderstood the situation. This is particularly important in conflict resolution procedures or legal disputes.

Elements of professional project making

Creating project reports is an integral part of evaluating project success. Documenting the lessons learned and sharing them with a larger team in an organized way can help with future projects. You can use different tools to put together your project report. Here are 7 basic steps involved in creating a project report -

1. Know Your Objective

Sit down, evaluate your objectives, and understand what you want to describe, explain, recommend, and prove with your report. Having set goals will not only help you proceed with your project report but also help readers understand your point of view.

2. Recognize Your Audience

Your audience plays an essential role in making your project report a success. A formal annual report differs from a financial report: the language, representation of data, and analysis changes per your target audience.

3. Data Collection

The chances of you having a solid report is when data supports it. Data plays an essential role in making people believe in your derivations. Also, support your claims by citing sources such as case studies, surveys, interviews, etc.

4. Structure the Report

A project report is further divided into certain sections. These 4 are the most common divisions of a project report -

- Summary - The summary gives the reader a download of all covered in the project report. Even though a summary is placed at the beginning of a project report, you can only write it once your entire report is complete.
- Introduction - Mention the outline of the report, give context and mention the scope and methodologies used in the report.
- Body - This is the lengthy section of the report as it contains background details, analysis, data, and graphics.
- Conclusion - This section brings the entire project report together.

5. Edit and Proofread

Once your project report is ready, read it multiple times with some time gap. You can ask your co-workers to review it.

Results and Discussions

In the results section of your academic paper, you present what you found when you conducted your analyses, whereas in your discussion section you explain what your results mean and connect them to prior research studies. In other words, the results section is where you describe what you did, and the discussion sections is where you describe what this means for the field.

The results section should include the findings of your study without any interpretations or implications that you can draw from those results. Here, you present the findings using text supported by tables, charts, graphs and other figures.