Skillbook

Project Management Basics

Project Management
Skills

Mindtools

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1. Introduction

Projects are one-off pieces of work involving several components that must be completed to a deadline and within a budget. Examples include construction, product launches, hardware installation, software development, or setting up marketing campaigns.

Complex projects need lots of planning and a disciplined approach. As a project manager, you need to devise a workable schedule, develop systems for reporting progress, manage requests for changes, and make sure that specified needs are met. That, in a nutshell, is project management.

Managing projects effectively requires time, skill and finesse. There are many aspects to the role, and this is what makes it so interesting, challenging and rewarding.

In this **Skillbook**, we'll look at the basics of project management, and explore how it helps organizations to make the changes they need to respond to their environment. In around one hour, we'll cover:

- The four key phases of managing a project.
- Decisions that project managers need to make.
- Skills that project managers require.

Note:

There are several approaches to project management. The two main ones are:

- "Waterfall" or sequential project management – this is best used when a specific, known product is needed by a certain date and within a set budget.
- "Agile" project management – this is best used when the end product is not fully understood at the beginning of the project, and you "evolve" it to meet changing market and customer needs. (This is a great approach for launching new products in an uncertain market.)

This Skillbook basically describes the waterfall approach.

2. The Four Stages of Project Management

Projects come in all shapes and sizes. One might comprise 50 tasks, while another may have more than 1,000. Some can be completed within a month, while others may span several years. Sometimes, there are a number of sub-projects within a project.

Projects often share the following characteristics:

- A series of complex and interrelated activities, many of which need to be carried out in sequence.
- A timescale with a clear beginning and end.
- A fixed budget.
- A specific deliverable.
- The involvement of many people, often with different job functions.

Projects require a temporary, coordinated effort. They need planning, organizing, controlling, monitoring, milestones, deliverables, and resources. These must finish by a certain date and must not exceed a specified cost. The goal is a new initiative, product, or other activity that satisfies your customers.

Managing a project means leading your team, as well as running the project itself. There are four key stages to this process:

1. The outline.
2. The plan.
3. The build.
4. The close.

We'll look at these stages in more detail on page 4 of this Skillbook.

Action:

Think about three projects that you have been involved with and write them in the table on the next page.

Write down three projects that you have been involved with or are currently involved with.
1.
2.
3.

3. Stage One: Project Outline

Projects are normally assigned to project managers by a person or group higher up in the organization – a steering committee or project sponsor, for example.

A project manager will be responsible for drawing up outline plans and costings to present to an approval committee, which will then give the green light (or otherwise).

This first phase of the project is really about laying the groundwork, and it ensures that adequate support and resources are available to the project team.

In this stage, you need to outline the business requirement, or scope, of the project. Then, define the specific deliverables, such as timescale, quality standards and budget.

For example, if the aim of your project is to build a road bridge over a river, you need to specify how many lanes of traffic are needed, what the maximum weight allowance will be, and so on. Once you have done this, you can design it, calculate how long it will take to build, and assess how much it will cost.

Of course, you may need to make changes if the proposed timeline or budget is unacceptable – as the scope may then be reduced.

Action:

Select one of the projects that you identified on page 3. Then, answer the questions on the next page. This will help you to identify the activities involved in managing the project.

Project Outline
Project Name: What was the name of the project?
Purpose: Why was this project set up? Describe its likely desired benefits (financial, organizational, operational, and so on).
Objectives: What specific objectives had to be met in order to deliver these benefits? How were they measured?
Deliverables: What outcomes did the project need to deliver in order to achieve these objectives?

This information is usually collated in a Project Charter or a similar document, which is signed off by the appropriate individual or team. This gives the project manager the authority to go ahead and, of course, to release the budget and track costs.

4. Stage Two: Planning

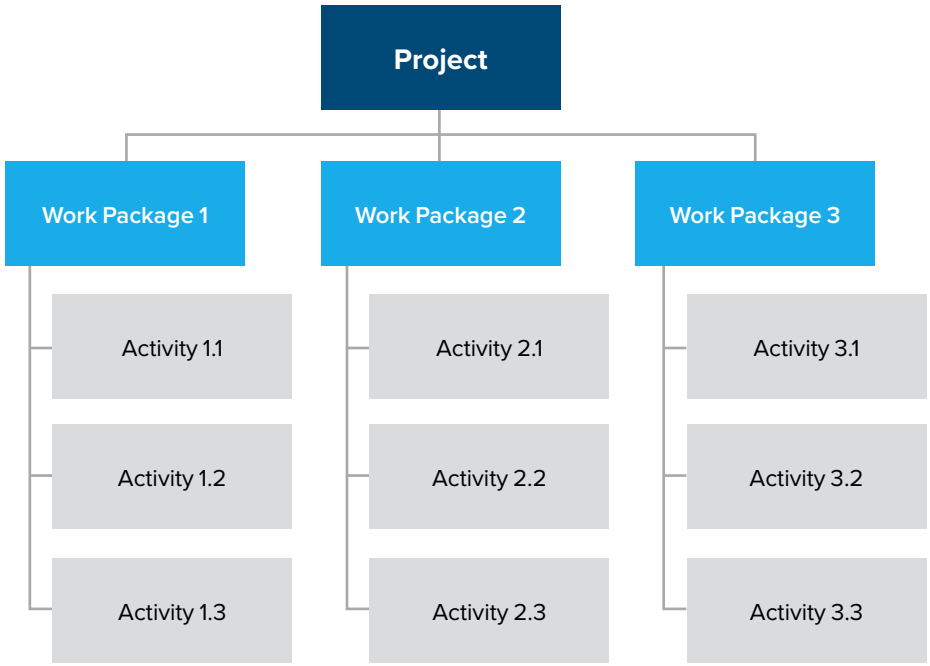
The second stage of project management is Planning. This involves clarifying the project's scope, and detailing the resources required to deliver it. It also includes scheduling, allocating team members to tasks, budgeting, identifying and managing risks, and planning communications and quality.

At this stage, a project manager needs to carry out the following four tasks:

1. Identifying Activities

Whether your project is big or small, as project manager you need to it down into manageable chunks. A useful way of doing this is by using a Work Breakdown Structure or WBS (see figure 1, below). This can help you to clarify what specific things you have to accomplish, and in what order.

Figure 1. Work Breakdown Structure Format



A WBS can be organized in several ways:

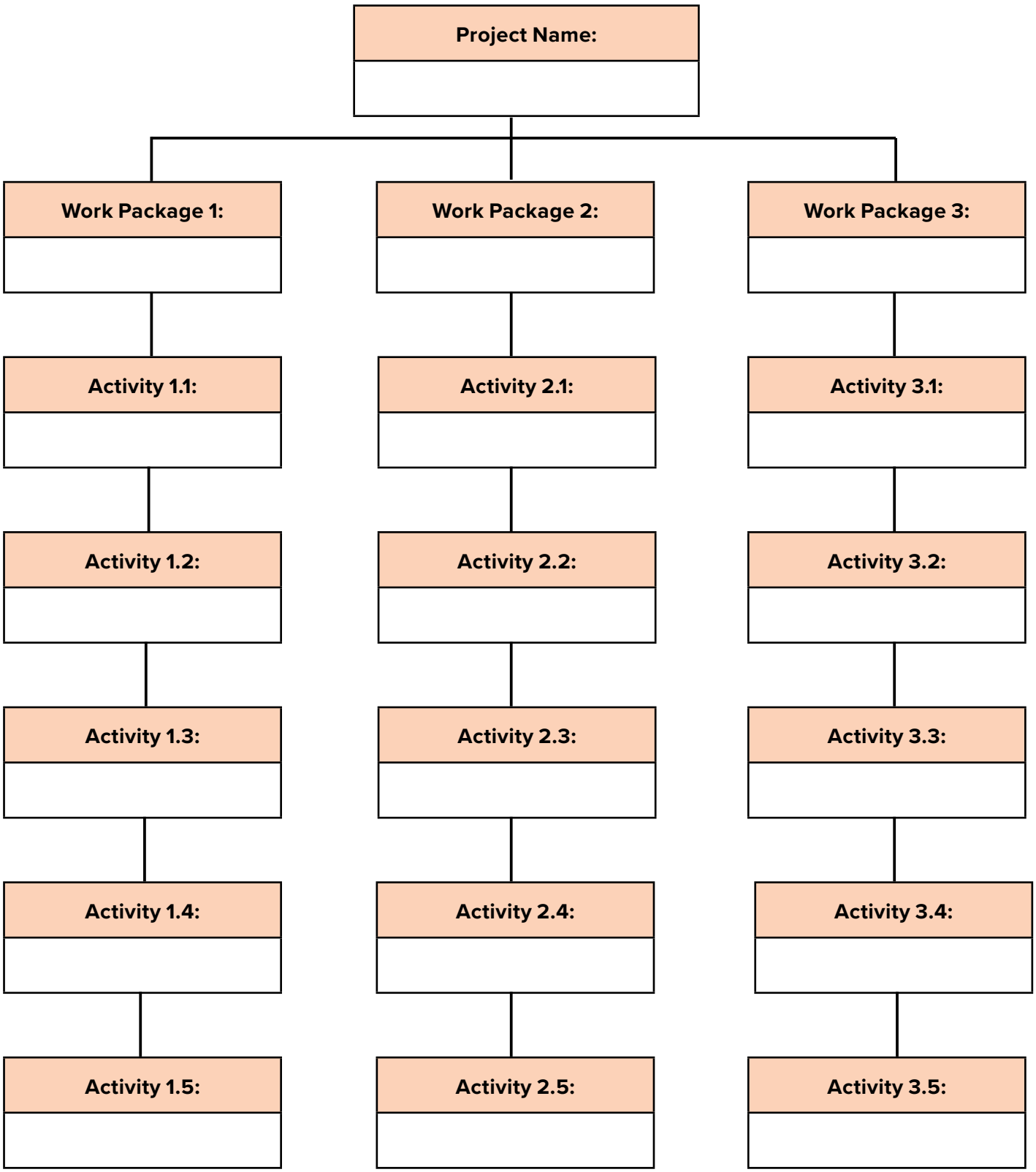
- **Process or activity-oriented** – involves breaking down a project into the different activities involved such as management, needs analysis, purchasing, testing, installation, and training.
- **Achievement-oriented** – the overall project objective is broken down into key achievements, such as having fully-trained users or acceptance of a system against test plans.
- **Function or product-oriented** – the project is broken down according to the different parts of the final product, e.g. hardware, software, data, and service elements.

Action:

Fill out a Work Breakdown Structure for your project, using the template provided on the following page. Start with the Project Name, then break it down by its key deliverables (known as "Work Packages"). These could focus on:

- Key activities.
- Achievements.
- Functions of the project.

Once you've done this, list out all the different activities you will need to complete to fulfil each Work Package.


Project Name:
Work Package 1:
Work Package 2:
Work Package 3:
Activity 1.1:
Activity 2.1:
Activity 3.1:
Activity 1.2:
Activity 2.2:
Activity 3.2:
Activity 1.3:
Activity 2.3:
Activity 3.3:
Activity 1.4:
Activity 2.4:
Activity 3.4:
Activity 1.5:
Activity 2.5:
Activity 3.5:

2. Resource Scheduling

Projects often consist of activities that have to happen in a certain sequence. For example, say you were designed a new brochure, you need to finish the design before you can send it off to print! However, there are also activities that can take place at the same time – for example, someone could be writing up content to feature in the brochure, while you are finalizing the design.

A great way of organizing your project activities is by using a Gantt chart. These help you to schedule and monitor all project activities, and work out deadlines and timelines.

3. Risk Assessment and Management

Project managers also need to identify, analyze and respond to the risks associated with a project, so that they can reduce the likelihood of these events occurring and minimize their potential impact.

The most effective planners consider risk right from the start, and don't let a few incidents "just happen" before they start to manage it actively. Risk impact/probability charts are a great way of identifying the likeliest risks of a project, as well as the ones that have the greatest probable impact.

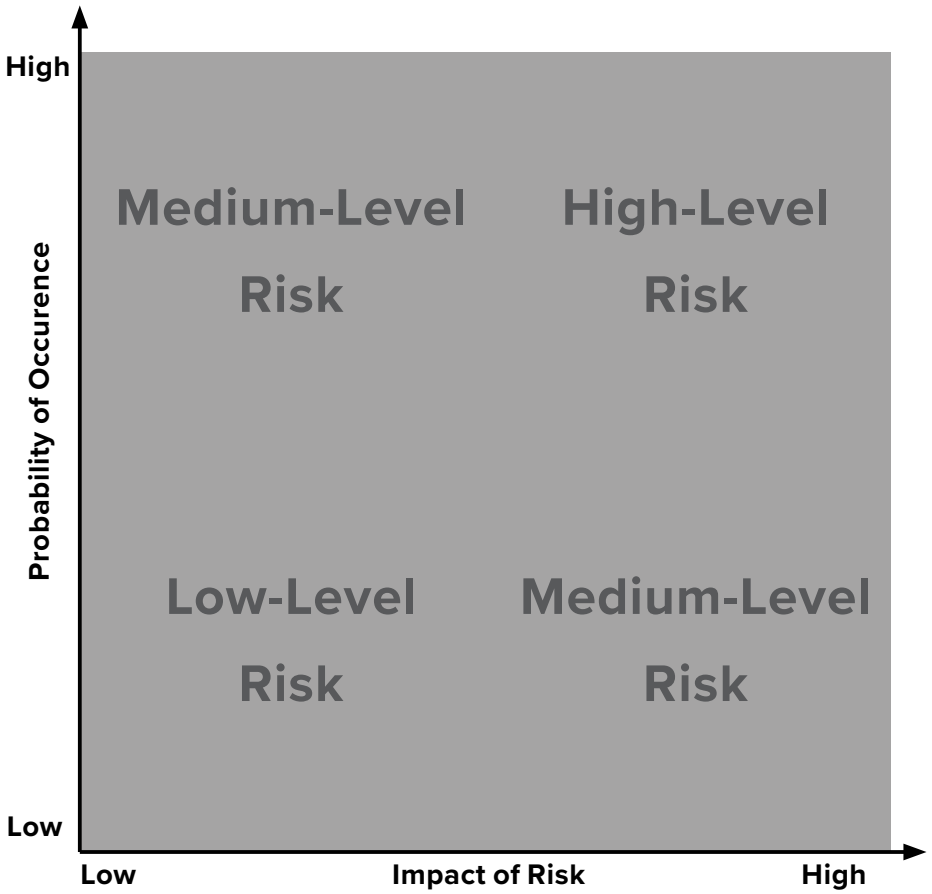
Action:

Brainstorm any risks that might impact your project using the table, below. List some of the risks involved, estimate the probability that they will occur, and identify what their impact could be. It might be useful to use a rating here of 0-10, where 0 is low probability/impact and 10 is high probability/impact.

Risk	**Probability** (Rate on scale of 0-10)	**Impact** (Rate on scale of 0-10)

Action:

Plot your risks on the Risk/Impact Probability Chart, below. This will help you to assess whether the risks you've identified are low-level, medium-level or high-level; and prioritize the management of them.



Once you've plotted your risks onto the Risk Impact/Probability Chart, you can prioritize risks depending on the quadrant of the chart that they fall into:

- **Low Impact/low probability** – risks in the bottom left quadrant are low level, and you can often ignore them.
- **Low impact/high probability** – risks in the top left corner are of moderate importance. If these things happen, you'll likely be able to cope with them and move on. However, you should try to reduce the likelihood of them occurring.
- **High impact/low probability** – risks in the bottom right quadrant are of high importance if they do occur, but it's unlikely they'll happen. Do what you can to reduce the impact they'll have if they occur by having a contigency plan in place if they do.
- **High impact/high probability** – risks in the top right quadrant are of critical importance. They are your top priorities and risks that you must pay close attention throughout the duration of your project.

Project managers also often keep a list of constraints and assumptions about the project that they're working on. This can also help them to identify and potential risk factors and are defined as follows:

- **Constraints:** limitations imposed on your project. For example, budget, time, or resources. For example, you may need to complete the project within a strict timeframe or using a limited budget.
- **Assumption:** these are things you believe to be true. They are anticipated events that you expect to happen during the project. You may make them based on your past experience, data, or expertise. An assumption, however, may or may not be true. And, often, if they turn out to be false, can be highly damaging. So it's vital that you consider them. For example, you might assume that you'll be able to access the necessary equipment you need for your project, only to find that there's a supplier shortage later on.

Action:

Make a list of the main constraints and assumptions that might affect your project in the table, below.

Constraints	Assumptions

Tip:

When you're managing a project it's a good idea to set up a Risk Log to keep track of the risks that you identify throughout its duration. You can also use this to keep a record of the project constraints and assumptions.

4. Communications Management

Effective stakeholder communication is another vital aspect of project management. However, the needs of your various stakeholders will likely vary.

For example, the project board will want to know how the project is progressing and about budget issues. These types of need can be met by the various reports, which we'll discuss in the next chapter.

On the other hand, individuals whose duties will change once the project is launched may not be interested in its progress or the budget. However, they will still need to know what they'll have to do differently, and when.

Project managers, therefore, should meet this complex set of needs by creating a communications plan. This should log each stakeholder group; its interests and issues; what the project manager needs people in it to do; how best to communicate with them; when and how often communications need to happen; and what information they need.

5. Stage Three: Building and Execution

The project build phase includes execution and control of the project plan. Here, the project manager must use leadership, team management, communication, and negotiation skills.

The focus at this stage is on:

- Working according to the specification and schedule.
- Monitoring and analyzing progress against the plan, identifying when the project is off track, and taking corrective actions as required.

Good reporting procedures are essential to delivering the project successfully. The project manager is the one who collates the information and summarizes it for the team, the sponsors and the stakeholders. Some of the more common reports and procedures include:

Project Milestone Reports

These help to ensure that key targets are met. If problems arise, they also allow for proactive planning to make certain that the project isn't derailed by one setback.

Project Dashboards

A dashboard allows quick and easy communication of the status of various elements of a project. For instance, you could use a green, amber and red "traffic light" system to display the progress of your project.

Change Request Procedures

As projects are implemented in a changing world, and because it's not possible to identify every detail in advance, plans sometimes need to change. Having a process to deal with requests for changes is essential, so that you can meet project timescales and budgets.

With a procedure for controlling changes, you can ensure that they are properly reflected in the overall project plan. Other elements involved in the build phase include quality control, training, testing, executing the solution or project deliverable, and preparing to transfer from project mode to support, or "business as usual," mode.

6. Stage Four: Closing the Project

In the project's final phase, the results are verified and accepted, and the project is moved to the operations side of the organization. Once it has gone live and been handed over, it is then shut down.

The purpose of a formal closing process is to ensure that the objectives have been achieved and are sustainable. It also gives the project manager an opportunity to document key learning points, and to use that information for continuous improvement.

Key tasks in closing are:

- Ensuring final acceptance of the project deliverables and checking that they provide the intended business benefits.
- Archiving project plans for future use and reference.
- Performance review, evaluation and celebration.

7. Responsibilities, Decisions and Challenges

Project managers have a high degree of responsibility for the success or failure of their projects. When things go wrong, the project manager is the person everyone looks to for solutions.

One of the project manager's key challenges is having accountability, but lacking authority. They also have to work with constraints on resources. Physical assets may need to be shared and scheduled. And cash can be limited, with the project manager unlikely to have the power to approve budget changes.

These things can make project management a tough job. In general, a project manager's responsibilities tend to include:

- Preparing the project plan and estimating budget.
- Making sure that the project has access to the resources it requires.
- Monitoring the project's progress and tracking budget.
- Managing the risks.
- Overseeing day-to-day project activity.
- Communicating the project's status to key stakeholders.

To meet these responsibilities and achieve the project's goals, the project manager needs to ask relevant questions such as:

- What resources are required to achieve the objectives?
- Who is best suited to perform which activities?
- What support and resources do people need?
- Is the customer/end-user happy?
- What misunderstandings do I need to clear up?
- Is everyone working on-task?
- Is the overall project under control despite any setbacks?
- What risks and potential issues do I need to address?

Establishing Valid Initial Assumptions

It's important to review and anticipate risks early in the project, and to manage them. You can identify risks and take action to address them right from the start by using a risk impact/probability chart during planning (see page 10 for more on how to do this). Problems are almost always easier and cheaper to fix at this stage.

For projects that have significant risks and uncertainties, project managers should consider including a feasibility or proof-of-concept phase in the planning stage. This increases the certainty that what you're planning will work, while allowing you to cancel the project at minimum cost if the proof-of-concept fails.

Determining Key Milestones and Review Points

To finish the project on time, the project manager usually needs to break it down into different phases, and manage their full and satisfactory completion. (The risk here is that people may underestimate the amount of work required to ensure that the deliverable is of a high standard.)

By insisting that a finished, signed-off deliverable is handed over at the end of each phase, you avoid poor quality delivery, rejection at the testing phase, and extensive rework and delay at the end of the project. Milestones and phased delivery also help you to maintain positive momentum, and sustain the sense of progress toward the end goal.

Estimating Task Duration

Early on in the planning phase, the project manager needs to determine how long the major tasks should take. They should do this in conjunction with their team, and by analyzing similar historical projects. It's important to ensure that the timelines meet the stakeholders' needs (although they often want the outcome to be delivered in an unfeasibly short time, and these expectations need to be managed).

While planning the schedule, the project manager also has to build in an appropriate contingency time to accommodate mishaps and unexpected events.

Optimizing the Project Plan

The project manager then needs to review and optimize the plan in terms of cost and schedule. This might mean reducing the scope of the project or adding more resources to reduce time, which is always balanced with the need to stay within budget.

This optimization process often introduces new risks, which the project manager needs to address so that they don't jeopardize the project, and it's often a balancing act that requires careful thought.

Allocating the Work

Many project activities will be done in-house using the people and physical resources that are most readily available. The project manager needs to be able to identify instances where capabilities don't exist internally, or where it's more appropriate to outsource work.

The project manager's responsibility is to balance the benefits of outsourcing against the cost and risk of doing so.

8. Project Management Skills

No matter what your role, the chances are you'll need to manage or play an active role in a project at some point in your career. It takes a great deal of skill to manage a project effectively, but the time you spend investing in and building up your knowledge of project management will likely have a big payoff.

Let's take a look at the key skills that you'll need to become an effective project manager:

- **Technical skills** – basic knowledge of the software that you'll need to complete the project will be necessary. If you need more specific technical expertise, then you'll need to know who to call on for this either internally or externally. You'll likely to also need knowledge of your organization's budgeting and reporting systems to complete complex projects.
- **Decision making** – you'll require confidence to make decisions when there's a high degree of uncertainty and risk.
- **Planning** – including scheduling, and materials and resource planning.
- **Risk management.**
- **Numeracy skills** – basic knowledge of budgeting and numeracy is useful.
- **Interpersonal skills** – you'll need to work effectively across departments with a wide variety of people.
- **Communication, negotiation and liaison.**
- **Leadership** – you'll need to lead decisions, and encourage and motivate people to get the project completed.
- **Purchasing and procurement** – you may need to source suppliers or external consultants, as well as manage your relationship with these people or organizations effectively. It can also help to have a basic knowledge of how to deal with supplier contracts.

Action:

Identify a person in your organization who has been performing well in a project management role (ideally, someone with this job title). Write down how they've used their skills in the box on the next page.

Name:	
Skills/Qualities:	**Example of How They Used This Skill**
IT Skills	
Use of Decision-Making Tools	
Use of Project Management Tools	
Materials and Resource Planning	
Decision Making With Risk and Uncertainty	

Skill With Numbers	
Interdepartmental and Interpersonal Skills	
Communication With Stakeholders	
Leadership	
Financial Knowledge	

9. Key Points

Project management is a set of methods and techniques that you can use to initiate, plan, execute, and conclude a specific project. This skill set is in high demand, as many of today's organizations are project-driven in order to keep pace with their changing environment.

Project managers need to plan meticulously, and deal confidently with uncertainty and risk. It takes effective leadership, and good organizational, planning and communication skills, to do this.

This discipline requires a careful, calculated approach. When you manage a project you need to be able to take the whole of the objective into consideration, and then break it down into small, manageable pieces that people can understand and accomplish, one step at a time.

You also need to be able to win support, collaborate and work well with others, and keep your project team motivated. When you do this, you'll be on track for another project success!