

Down-to-Earth Project Management for Beginners

Subtitle

**Getting things done in your future life -
Tips for organizing tasks you've never done before.**

Preface

As you move forward in life to new situations or increased responsibilities, you will almost certainly face challenges where you want to do something, either for yourself or at work, where the new task is something that you have never done before and perhaps also:

- needs work or assistance from multiple people,
- must satisfy other people beside yourself,
- has higher levels of complexity and responsibility since the work involves more people, more money, and more details.

A new situation like this can be scary when you recognize that this is something so new that you don't know what to do. You are sure that there are things you don't know, and afraid that you don't even know what questions to ask. Where should you begin?

The good news is that as human civilization has evolved, some insightful people have recognized that there are typical patterns for organizing or coordinating the activity to complete an unfamiliar task that may also be large or complex. This knowledge has been organized into a collection of principles, methods, and techniques as a field of study known as Project Management.

There are many sources of information about project management methods available on the internet and in books and training courses. However, a common challenge with these materials is that they often jump quickly into project management specific terminology. These technical terms often force the reader to spend many more hours studying the concepts behind the technical terminology. One can easily become lost or frustrated at the beginning.

The purpose of this paper is to provide a non-technical description of project management for the beginner. It will present some elementary concepts in general, non-technical language - concepts you can use to organize and execute projects that are not terribly complex - while also providing a useful introduction for those readers who go on to further studies of the field of project management. The target audience is individuals at the high-school, college, or early career levels of experience who have not yet begun a serious study of the field of project management.

What is a Project?

A project is the activity to organize and complete the work to attain a specific objective where:

- The work is temporary with a start and a definite end when the objective is attained. When you are done, you present or turn over the end product to someone who will use it and you return to your normal activities.
- The work is unique in that either the product or end result of the work has never been created before or the people doing the work have never done it before as a group. This is not a routine 'assembly line' activity where everyone involved already knows what to do. Work may be needed to determine exactly what needs to be done, what is the best way to do it, who should be involved, and coordinating each of the participants to 'get them all on the same page'.

The end product or objective of the project can take many forms. It might, for example, be a physical product (build a birdhouse or build an office building), an event (family vacation or large business conference), or creating a process or service (start up a new company or establish a safety program for the company).

What is your interest in Project Management?

As you go through life, you are probably going to experience many situations that qualify as projects and can benefit from applying some basic management methods. Not everyone becomes a professional project manager but you will likely find yourself at times owning or involved in a project that affects your individual personal life or is presented to you as a task where you work.

For example, the following situations could be addressed as projects:

- Building a birdhouse, doghouse, or soapbox derby racer.
- Creating your exhibit and presentation for the school science fair.
- Applying for college admission.
- Finding a job or buying a car.
- Buying, building, or remodeling a house.
- Various social and family activities such as a party, celebration, or vacation.
- A wide variety of assignments at work where your employer is tasking you coordinate the activities to create a certain product, event, or process.

With some knowledge of the elements involved in project situations, you will be better prepared to recognize a project scenario when it occurs and use some established 'management' actions to improve the outcome. If you are not the designated project manager and are simply involved in the work, or just standing on the sidelines watching, you can observe the progress and learn what works and, from other's mistakes, what does not work.

Observing successful and unsuccessful projects and practicing on your own smaller projects can help you prepare for the larger, more expensive, more critical tasks that life presents you with later on - whether they occur at home or on the job.

What will these project assignments look like when they come to you in the future?

The opportunities to use some of the actions or techniques outlined in this paper will come to you in small or limited ways early in life and increase in frequency, size, and importance as you grow into and become involved in more serious responsibilities.

You will see many situations in the future where an employer, or family member, or group leader comes to you asking you to do some work to organize and execute the activities to attain some objective. They need some help and they are asking you to 'work on it' and make arrangements to get it done.

The person asking you to work on this might not call it a project but instead may say that they need you to work on a task, or an assignment, or a special job etc.

They will rarely say that they need you to be the project manager and give you any power or authority over anything or anyone - but will instead be asking you to 'work on', or 'coordinate', or 'orchestrate', or 'handle' the actions needed to make this happen.

The person giving you the assignment may not know, or care, that the work could be defined and organized as a 'project' - they just want you to get it done. However, you can look at the assignment and determine if some of the common project management actions outlined here could help with planning, organizing, and executing the work needed to be successful in completing the assignment.

By looking at these future assignments as projects and using some of the common management actions where they are helpful, you will be more prepared when at some point in life your employer comes to you and says "We have an important company project that I want you to take charge of as the project manager and apply some proven management methods and best practices to ensure our success."

The following paragraphs outline some basic elements, actions, and activities that apply to project management and completing your future assignments successfully.

Who is in charge and what is their objective for this project?

A project will normally have some person who basically owns the project. This is the person who wants the end product of the project to be created and has the authority to make decisions to spend money and commit resources to do the work and complete the work. This person (we will call them the **project owner**) has the authority to say 'Yes - let's do this' and task someone (you) to be the organizer (coordinator, or project manager) to begin the work.

For personal projects (a do it yourself, for yourself, project) where you are the project owner, you will most likely perform the coordinator or manager tasks yourself because there is no one else to do it. You are the person who will benefit from the project and are probably providing all of the money and resources.

For a group or company setting where you are the assigned organizer / project manager and working under the direction of a senior manager (project owner), there can be many reasons why you are being assigned the coordination or management duties instead of the project owner doing it themselves. In a business environment, this project owner is usually a very busy senior manager with little time available to spend on the details involved in actively coordinating the work. They are delegating the hands on work of managing the task to you as someone with more time and focus available to monitor activities closely, catch and respond to small problems more quickly, and otherwise keep your eye on the ball.

Note: The principles and management actions outlined in this paper apply to both personal and work related projects, but the emphasis in the discussion is on projects in an organizational or work environment. The scenarios between personal and work related projects may vary greatly in things like the number of people involved, the amount of money spent and the complexity of the work, but the underlying principles are the same. It is left as an exercise for you, the reader, to look at the recommended action steps outlined here and determine if or how they apply to your specific situation (project), whether at home or at work.

Once you have received the assignment and identified the project owner, it can be very important to have a discussion with this person to understand what you are being asked to accomplish with the project. Some general questions to ask may include:

1. What is the objective or end-result of the project? What do they want you to create? Learn as many details about the features or specifications as can be determined at that time.
2. What is the budget? How much money is available for the work?
3. What other (non-monetary) resources are available to help with the project activity? This might include items such as a facility or work space, use of equipment, supplies, and labor supplied by various participants (employees, family, volunteers, etc.).
4. Is there a specific schedule or deadline for completing the project?
5. Are there any known problems, challenges, or limitations associated with the project's end product, the participants, or the work activity that will be generated?
6. What are the critical factors for the project that will make it a success?
What are the must have features or aspects of the project's end product?
7. Who are the people that will be affected by this project? Who will use the end product?
Who will be affected by the work activity?
8. What progress reports or status reports does the project owner want to have? This might be none at all - a situation where you are expected to go away and bring back the final end product. However, as the projects get larger and more expensive, you can expect to see a need to provide more frequent progress reports. These might vary from daily or weekly face to face meetings with the project owner to scheduled group meetings with many of the management staff and interested parties. Regular written progress or status reports are also common.

Note: The list of questions above is provided as a starting guide. There will often be other important questions to ask depending on the nature of the project, and, some of the questions above might be ignored as not applicable. **An important aspect of project management is that no one checklist or cookbook recipe can be provided for all projects. The challenge for a project manager is in evaluating the project and determining which questions to ask and what types of management actions would be best for this situation.**

Tip: A common beginners' error is to receive a very short description of what your new assignment is (upgrade the kitchen at home, or, remodel the break room at work) and begin making arrangements right away to accomplish what you believe the final end product should be. This can be a significant waste of time and energy. The most important people in the decision making often have other/different ideas about the goals and detailed specifications for the work. You want to be sure to make the right people happy - and avoid any waste of time, energy, and perhaps money when you have to 'un-do' your first attempt and start over.

If this is a personal project where you are also the project owner who is setting the project goal, providing the money and other resources, and also doing the project management work - the project owner questions above can still be applicable. It can be helpful to ask yourself these questions to help formulate the major characteristics of the project, and some important details. Even as a personal project it can also be helpful to schedule yourself for periodic progress reports or status reviews (yes, from yourself to yourself) to act as a reminder of the progress, see what items are needed next, and address any new problems which need to be fixed.

If you are lucky, the project owner will have a very detailed and realistic vision for the project to include the end product features, how much money will need to be spent, the other non-money resources that will be needed, and any specific difficulties the work will face. If this is not the case it falls on the project manager to discover these things and report back to the project owner to inform them and possibly adjust their expectations, or perhaps change some aspects of the project to fit the reality (such as the budget limits or schedule).

Tip: In some situations or organizations, it can be very helpful for the project owner to make an announcement to others in the organization (family, team, or club) that this project is being initiated and you are the designated coordinator (project manager). This type of announcement can serve to advise various participants that the activity to create the product or objective is beginning and you (as the project manager) are working under the authority of the project owner.

Who else cares about the results of this project?

In addition to the project owner, there will often be many more people who will be affected by the work activity or the creation of the new end product or result of the work.

Users - One set of people you should identify early is the people who will use the end product created by the project (or participate in the event or new process created by the project). It can be very important to interview these users to determine their needs so that the result or end product can be designed to give them the best product possible (and avoid project failures).

In some situations, the project owner might have a very specific and inflexible definition of the end product and is not interested in what the users or others want the project to do or create. Sometimes this is appropriate. If there is evidence that this is not the best approach, it then becomes a challenge for the project manager to convince the project owner that some adjustments are needed.

Other affected people - There can be other sets of people who may not use the end product directly, but will be affected by the project activity or impacted when the end product is delivered. These people might not be obvious at first glance, but they might be influential and if they are unhappy enough with the project, they can apply pressure to cancel the project or otherwise declare it a failure.

For example:

- The new accounting software created by the project will help the accounting department but will require other departments to change their processing procedures (create new forms, re-train employees, etc.) and otherwise do things differently.
- A department manager might be unhappy if the project is 'stealing' some of the department's workers to do work on the new project.
- Some people will be unhappy if the new project is getting money and attention when they have different projects they would like to have completed instead.
- People in the city might consider the new office building created by the project so ugly that it is a constant source of ridicule and bad jokes which become an embarrassment and public relations disaster for the company.

Generally, priority should be given to the project owner's needs, followed by the product users, then other affected people. However, these sets of 'other affected people' and their concerns should be identified as early as practical to determine, in coordination with the project owner, what adjustments might be needed in the work activity or end product to eliminate or minimize any negative impact. Their complaints will be heard far and wide.

WARNING: You are now entering an area where people with various personalities and self-interests are involved. This can be the most challenging aspect of project management (and life) you encounter. It can require patience, tact, diplomacy, good communications and a long list of other inter-personal skills. It can be stressful, but the experience is valuable.

Where are we going?

With the project owner, end product users, and 'other affected people' identified, you can now begin to refine the project owner's original description of the project and the resulting end product of the project.

"If you don't know where you're going, you'll end up someplace else."

-Yogi Berra

In some cases, a project owner will not have detailed knowledge of how the end product will be used and what features or characteristics it needs in order to be used successfully by the users after it is completed.

Example 1: When building a new office building for the company, the project owner (company president, etc.) may know the company needs more space, needs a new and larger building, but does not know in detail:

- How much space is needed for each department.
- What the shipping department needs for loading dock features.
- What the computer/data processing department needs for network cable routing.
- The need for certain departments to be located close to certain other departments.
- How the location and quantity of restrooms and parking can affect the employees.

Example 2: If creating a new software system for the company accounting system, the project owner (perhaps the company president) may not have technical knowledge of all of the financial processing rules and computations that are needed to define the detailed list of specific features and rules necessary to create an effective financial software system from beginning to end.

Example 3: Even in the simple project of building a bird house for the blue birds that frequent your back yard - it turns out the little critters are actually very picky about the design specifications of any location they will accept for nesting. We cannot interview them successfully, but it turns out that others have already discovered these parameters and the information is available from various reference sources.

The project manager is normally tasked with this discovery process where the project owner, end product users, and other affected people are interviewed (with the project owner's approval) to determine what features the end product should have to be successful. This can be an extensive exercise involving many meetings with future users and management staff where features are discussed and debated and long lists of detailed specifications are created.

There can be issues in this goal or end product refinement process. For example:

- Different people with different ideas about what features should or should not be included in the end product
- Individuals who want to essentially hijack the project and turn it into something they want instead of the project owner's original objective
- The one grumpy person (nerdy, oddball, detail-freak) who comes up with an unexpected concept that is hard for the other participants to understand and accept.

For these issues or conflicts with refining the features to be included in the end product - the project manager should generally document the details of the various points of view and take any conflicts back to the project owner for resolution (being careful to remain tactful with everyone involved and not throw away any detail as a first impulse). If you are lucky, the project owner or some appropriate senior manager will be in the meeting when the issues come up and can make decisions right away to help resolve any conflicts. Otherwise, be sure to retain the details of the issues and conflicts and communicate them to the project owner for a decision on what to keep, what to drop, and what to ignore. The grumpy detail freak no one likes might actually be trying to communicate critical information about end product performance that will save the project from failure.

There can also be instances where the users want more features than the project owner can afford to pay for. One approach that might be helpful in this case is to record the desired features as 'must have' and the 'nice to have.' Then, get the project owner to prioritize the features and specify which features to include considering the budget or schedule limitations. However, save the remaining list of unselected or 'nice to have' features in case it becomes possible to add in some of these features later if there is enough time, money, and other resources remaining.

Tip: Some good judgment will need to be applied when making decisions about which people to invite to which meeting. For example, if the meeting concerns internal company business about a new product's production methods, then inviting outsiders (customers and the general public) could make it hard to manage the meeting and cause confusion where indirectly affected people develop unrealistic expectations about their authority to influence the project. Other meetings can be scheduled to address the concerns of other affected people and/or meetings with the customers or general public if applicable. Still, be careful not to overlook anyone who might have a valuable contribution.

How do we get there?

Once there is a detailed listing of the features and specifications needed for the end product, the project manager can undertake a research effort to determine what steps or actions are needed to build the end product and complete the project. This could be described as a reverse engineering process. You start with the description and features of the end product and work backwards to determine the materials, the individual parts and the various construction/creation/assembly steps needed to create the end product.

There may be more than one possible path or combination of steps from beginning to end. There may be choices available about different types of materials, different designs, technology, or construction methods available which will all satisfy the features needed for the end product and successful completion of the objective. However, each of the choices is likely to have different costs, different lengths of time to complete, and involve different purchasing actions (suppliers) or different types of workers (sub-contractors).

Research - In many cases neither the project owner nor the project manager will know about all of the different types of materials, designs, technology, or construction methods available to create the features needed to complete the work and satisfy the objectives. Certainly, as you go through life, you will be faced with tasks you have never done before that include unknowns that require research.

"If we knew what it was we were doing, it would not be called research, would it?"

- Albert Einstein

Researching the possible methods or steps that can be used to create the end product can take many forms.

1. Reference materials might be available in books, on-line videos, or other internet based materials.

2. Talking to people who have already completed similar projects successfully can be very helpful.

- For common life events, this might be as simple as finding some more experienced friends or relatives who have done this already.
- In a business or group setting, perhaps others in your company or group already have experience with the same type of project.
- For more unusual or unique end products, activities, or events, it may be helpful to locate people in other companies or groups that have performed a similar project in the past.
- There might be people in professional associations or clubs who can provide helpful information.

Note: A key in obtaining advice and useful information from others is finding knowledgeable people who are willing to spend the time talking to you. Having good inter-personal skills can be helpful here. Also, strangers or people in other companies or groups may be hesitant to share information for a variety of reasons. This is where networking and participation in clubs or professional associations can assist in locating and talking to experienced people.

3. Another source of information on possible methods or solutions is commercial companies that are involved in creating products or services related to the end product of your project. However, contacting a commercial company should be done carefully. Here are some cautions:

- A commercial company will often have little interest in spending time talking to you unless you (or your company) are seriously looking at purchasing something.
- In many cases, your initial contact with a commercial company will be routed to a sales person who may have little to offer in the way of technical information - while insisting their product is the only solution to your needs. These sales representatives can generate a large number of unhelpful phone calls and emails, including unwanted sales calls to your supervisors.
- Make sure the project owner is aware of your contacts with external or commercial companies and use caution to be clear to everyone that you are not yet negotiating a sale so your requests for information are not suspected of prematurely making a deal or otherwise exceeding your authority to represent your company or group.

Here is a somewhat over simplified example of how this research process might feel. One might think of the exercise to find and assemble available resources, supplies, and work into the tasks and steps to carry out the project as being like trying to assemble a jig saw puzzle. However, in this example the pieces of several different jig saw puzzles have all been poured into the same box. You have a picture of the completed puzzle so you know what the end result puzzle is supposed to look like and are now having to go through the box reviewing all the jig saw puzzle parts (perhaps doing some creative sorting along the way) to pick useful puzzle parts and set aside the parts from other puzzles that are not applicable. You may think there are parts missing. You might need to look through the box of parts again or expand your search and look to see if some parts fell under the table. Then, there is the exercise to determine how the selected (correct) parts fit together. Additionally, there can sometimes be situations in the project management world where it is necessary to build your own custom puzzle parts to fill in any gaps - if you have the time and money.

Finding added value where you can - During the research process to discover the various choices of design or the construction methods available for creating the end product, the project manager should be on the lookout for choices that provide extra value. As more is learned about the possible choices in materials, design alternatives, or construction methods, there may be some unexpected discoveries where some of the available choices provide additional features or benefits which will increase the value of the end product. Work to discover as many of these added value items as possible and be sure they are evaluated as part of the discussion and decision on which design or construction methods to choose.

Tip: As a general rule, the project manager should try to under promise and over deliver. Certainly, the project manager must always work to ensure that the end product satisfies the criteria specified by the project owner. However, as the research process evolves there may be multiple options available to make the end product better, faster, or cheaper. The project manager should use caution in discussing these better/faster/cheaper benefits since the project owner and end product users may have a tendency to assume that all of the benefits mentioned are being promised when in fact only some of them can be selected at the same time. If their favorite added benefit item is lost because it did not fit into the budget or was otherwise not selected to be part of the best combination of steps to build the end product, then the loss of that anticipated feature can be perceived as a failure of the project.

Choosing a path - Again, there may be more than one possible path or combination of steps from beginning to end. The project manager may not have the authority to make a decision about which path to take and should present information to the project owner about the costs, choice of features, compromises, and scheduling impact of each of the possible solutions to get a decision on which path will be selected.

Make a list of the steps or actions - Even for fairly small and simple projects, it can be helpful for you to write down the tasks or steps to be performed in doing the work to create the end product. A simple list can help with organizing the work to:

- Place the tasks in order.
- Act as a quick reminder checklist of what comes next.
- Serve as a measure of progress towards completing the project.
- Provide an outline which can be used to coordinate any new action steps when they are discovered and to organize adjustments for any new features, changes, or technical details that need to be integrated into the work.

For larger and more complex assignments, the project manager's list of actions will likely evolve into a more detailed and comprehensive document - often referred to as a 'Project Plan'. Having a project plan that is approved by the project owner, coordinated with the various participants, and distributed to the participating parties can be essential as projects grow to become more complex, more expensive, and involving more people, departments, or organizations.

A formalized plan for the project can help by:

- Documenting the project objectives and specific end product features.
- Formalizing the project owner's approval of the project, budget, and use of resources.
- Notifying various people or departments of the support they are expected to provide.
- Providing a schedule or sequence of events for the work activities.
- Providing a single standardized document to be distributed to a number of individuals/ departments without a need to schedule numerous discussion meetings.
- Providing some level of detail about the selected path (design, construction methods, technology, etc.) so that individuals or departments involved in the work will know:
 - What they will have to work with.
 - How their work must support the objectives.
 - How their work will integrate with the work done by other individuals or departments.

For larger projects, you may find a need to create an overall plan for the project and a number of sub-plans and supporting documents to detail the specifications and work for certain topics or functional areas.

Think about what can possibly go wrong - Once the general steps to be performed are outlined and there is some idea of the construction methods and who the work participants are, the project manager should examine the work activities to determine if there are any risky elements that might cause a total failure or major issues with the budget or schedule.

Points of failure might originate from elements such as:

- Environmental factors like the weather, supply shortages, worker shortages, or limited equipment availability.
- One of the work participants or companies being inexperienced or unreliable.
- Use of extremely new technology or creating a component of the project that has never been created before.
- Any potential events with a negative impact on the schedule, budget, or features and performance of the end product.

The project manager should evaluate the potential risk factors or likely points of failure and consider implementing additional safety precautions such as the following:

- Planning for and perhaps making preparations for alternate or back-up steps to be used in place of a failed step or process if it occurs. These are often called contingency plans.
- Performing early and more frequent checks to determine if a failure is beginning to occur.
- Conducting early tests of the product performance or worker performance as a dry run or trial.

These risky elements or tasks and the possible safety precautions (alternate or backup steps) should be discussed with the project owner to prepare them for any decisions that may be required later on - decisions to provide additional time and money to fix the failures or decisions about dropping some features from the end product if they are unobtainable or unaffordable.

Doing the work

Once the objective or end product is well defined, the path or method to create the end product is chosen by the project owner, and a list or plan of the steps to create the end product is defined and approved, then, the work to create the end product can begin.

Committing the resources - Before announcing to everyone that the work to create the end product is starting, the project manager (with help from the project owner as needed) should confirm with the people doing the work (individuals, departments, suppliers, vendors, contractors, etc.) that they are committing to provide the work or supplies as discussed previously. These supporting individuals or companies should be promising they can provide the work or supplies in accordance with the project requirements, according to an agreed upon schedule, and at an agreed upon price. For activities involving commercial suppliers, vendors, or contractors, this often means creating binding contracts specifying the work to be done, scheduling, and pricing.

Starting the work - If this is a simple personal project where there are few other people involved, then you can often just begin the work yourself by starting to complete the first item on the list of steps (plan) for the project. If there are a number of individuals, departments, or companies involved, then it can often be helpful to make a formal announcement to all of the work parties involved that the work is now beginning and which work group should now begin the first step in the list of work activities to create the final product. In some cases it can be helpful to hold a project start-up or kickoff meeting of all of the work participants or at least representatives from each work group. A kickoff meeting can serve to:

- Formalize the announcement that the project is approved and work will now begin.
- Provide any new or additional information.
- Discuss procedures for coordination, communications, or scheduling.
- Introduce the participants to each other and to the project owner and project manager.
- Emphasize the importance of the project and the project owner's commitment to attaining the objectives and goals of the project.

Managing the Project Activity - With the project underway, the project manager's focus shifts to monitoring the progress of the work performed by the various participants with an **emphasis on making sure the project activity will result in the desired end product and remain within the budget and any scheduling deadline restrictions.**

Many of the projects you experience will have interrelated tasks where changes to the product or output created by one work activity will change some details of the work performed by a different work activity. If the features or characteristics of the end product get changed from the original plan by problems or unexpected events with one of the work groups, then you should let the other work groups know about the changes so they can prepare with the proper supplies, equipment, and workers. **The project manager's work often becomes a juggling act of coordinating, orchestrating, and otherwise adjusting the work activity, schedule, or details of the product features as the work progresses.**

The project manager will need to find methods to gather information from the various work groups (teams, departments, companies) to confirm whether everything is on track or if there are problems or changes that need to be addressed. This communication might be periodic phone calls or emails or more formal project meetings or written status reports. If there is an issue at one point that affects other workers by changing the schedule or features of the end product, then the project manager should advise the other work groups of the changes that will have an impact on their work. In addition to gathering information, the project manager should also be providing regular status reports to the project owner to report the overall progress and status of the project (work, budget, schedule, etc.) along with information on any problem areas - especially for problems that may need the project owner's attention or influence.

Management Emphasis Areas - Some common areas the project manager can monitor to avoid overall failures include the following:

1. **Budget** - If there is a budget limit, it will be essential for the project manager to develop a method of collecting information on the expenses paid and measuring the progress of the spending to avoid running out of money before the work is complete. A basic question is: Is there enough unspent (uncommitted) money remaining to pay for the future expenses?
2. **Schedule** - Some projects have a specific deadline or due date for completing the work and providing the end product. These deadlines are usually based on external factors such as seasonal weather, end of an existing contract or lease, pending loss of some type of supplies or critical workers, or even a governmental or legal requirement. These factors can be outside of you or your company's control but failing to meet the deadline can result in overall project failure. The project manager will need to develop methods to collect information on the work progress and gauge the progress against the work remaining and time remaining to avoid a failure to complete the work and deliver the end product on time.
3. **Quality** - The project activity should also be monitored to verify if the end product being created will contain the features that satisfy the requirements the project owner has approved. The results of the work activity may need to be monitored at frequent intervals not only to ensure the desired end product features are being created but also that those features perform according to certain performance measures or technical standards. For some situations it can be important to confirm that the parts being created by one set of workers will work with parts being created by another set of workers and the parts meet a set of desired measurements or technical standards when assembled together. This quality monitoring may involve setting up one or more formal testing processes to be executed either once or perhaps continually throughout the end product creation process.

Communications, Coordination, and Reporting - Keep in mind the project owner is counting on the project being successful and is likely responsible for the money and other resources being expended. In addition to your initial meeting or interview, you will want to keep the project owner informed of the project progress and any significant problems or changes. The project owner can often help with additional resources or other solutions when problems arise. What you do not want to happen is getting deep into a significant problem without the project owner being aware of it. The project owner is a person who can declare the project a failure. They will be unhappy with a failure and more unhappy with an avoidable failure - and this could affect your reputation or status in the organization.

How often you report to the project owner, what format the meetings or reports take, and how much detail the project owner wants to see is something to work out in your talks with the project owner, and, they might evolve over time as each of you learns about the sensitive or difficult areas of the work. In addition, you (as the project manager) will need to learn how much decision authority you have and where the threshold is when an incident or decision needs to be elevated to the project owner. You may see projects where the project owner wants to know about everything and make all the decisions - and you as the project manager are just doing all of the detail 'leg work'. At the other extreme you may be expected to just go away and come back with the final product when the work is complete.

As the project manager, you are the focal point for orchestrating or coordinating the work and will want to monitor the progress of the work going on in each of the individual steps/tasks or activities. The focus of this monitoring and coordination is to:

- Keep the project moving forward.
- Address any problems when they arise.
- Watch for any changes which might affect the end product with a loss of features or unacceptable performance.
- Watch for changes in one task or work activity that need to be communicated and coordinated with other work activities.

This monitoring by the project manager can take many forms depending on the nature of the project. In some cases, it might be occasional emails or phone calls or walking around the work site to ask 'How is it going?'. In other projects, you may find an environment (critical budget or scheduling demands come to mind) with a need for very detailed and frequent reporting from the various work activities (departments, work groups, sub-contractors) to the project manager for review.

Even when there are no problems occurring, it can be helpful for the project manager to check on the status of current active tasks, confirm when they are complete, and remind the workers for the following task when their work can begin, along with re-confirming any details on what is expected of them.

Another function that can be fulfilled by the project manager as part of the coordination activity is to take actions to help the various work groups be successful. Look for opportunities to make minor adjustments that will improve conditions for the work groups, but use caution that the work groups are not taking unfair advantage of your assistance or otherwise creating problems for other work groups or unnecessary expenses.

A warning for new project managers - you will almost always encounter problems and/or changes to the end product or the plan for the work activity. There are many different potential sources for problems and changes.

Changes can occur due to:

- Environmental factors such as the weather.
- Failure of one of the work groups (departments, companies) to perform as expected.
- Unexpected limitations in the availability of supplies, equipment, or manpower.
- The project owner or the end product users applying pressure to alter the features of the end product of the project while it is under way.
- An unexpected but pleasant discovery where it is learned that the end product can be made better (or faster or cheaper) by changing the plan of action and doing something a different way. This is good news, but still a change to be coordinated.

It would be nice if everything always went smoothly and according to plan, but it is something you may not see very often. As the project manager, it is your responsibility to coordinate the necessary adjustments generated by the problems, and **maintain focus on having the end product of the project meet expectations**. It's just part of the job to be a juggler. Anything can change.

Old expression:

"When you're up to your neck in alligators, it's hard to remember that your initial objective was to drain the swamp."

Less humorous revised expression from a project manager's perspective:

"When you're up to your neck in alligators, it's the project manager's job to work to minimize the damage caused by the alligators and bring the focus back to completing the original assignment of draining the swamp."

Note: This discussion about unexpected changes is meant to set expectations and not to imply that you should have a carefree attitude about unexpected changes. You should always be working to avoid unexpected changes by performing proper research, planning, and coordination earlier in the project.

Note: There can also be distractions or emergencies in the work environment that are not directly related to the project work (company merger, major policy changes, fire in another building, some one got fired or arrested etc). These shocking events can distract the project workers and lead them to forget that they have some work due soon to contribute to the project. The project manager should check on everyone involved once these emergencies settle down and gently bring the focus back to the original assignment.

Written documentation to support effective management - A project management activity applicable throughout the project from beginning to end is providing appropriate written documentation. Look for opportunities to provide written documentation that can help the workers or work groups do a better job. Examples could include items such as:

- End product features and specifications.
- Contact information for key players.
- Procedures and policies affecting the project work.
- Any reference materials or technical specifications the workers might need.
- Reports of project status and problems encountered.
- A log of changes, and decisions that have been made.

This written documentation can serve to help keep the project work on track and also improve communications by providing centralized reference documents while helping enforce standards.

Tip: There can be instances where the end product users or the project owner 'forgets' what they asked for or agreed to previously and they now want to change their mind about the goals or detailed specifications in the middle of the project work. Having documents that record what was originally agreed upon, and a log or journal of any changes already coordinated, can be very helpful in the negotiations that follow. As the projects get larger, more complex, and more expensive, it can be critical to have a formalized project requirements document, approved by the project owner, specifying the detailed features of the end product the project owner is agreeing to build and pay for.

A successful end to the project

The project manager should be looking ahead to determine what actions are needed when the end product is finally completed. There may be a number of delivery and clean up actions needed.

For example:

- Some coordination may be needed with the users for delivery and installation of the new end product.
- Training and documentation may be needed for the users to understand how to use or operate the new product, process, or system.
- Any workspace or equipment used by the workers should be cleaned up and returned if applicable.
- Project workers are released when no longer needed and returned to their departments.
- Contracts with external companies must be closed out.
- Bills must be paid.

Depending on the nature of the project, a meeting of the key players to discuss the lessons learned (problems, fixes, what to do better next time) can be valuable for any future work on similar projects. A written after-action report could also be useful when the participants are likely to work on similar projects in the future.

In many cases, it can be useful for the project owner to make a formal announcement when the project is complete and the end product is successful. Some words of thanks to the project participants from a source of authority, along with expressing the importance of the work, is beneficial to the morale of those involved and encourages their support for any future projects.

When it's all finished and done:

- Congratulate yourself for finally completing the project.
- Brag (carefully) to your supervisor about how well it turned out.
- Some groups will have an end-of-project celebration.

Thoughts on the nature of project management

1. The projects you will see in life can be highly variable in size and complexity. Two projects that seem to be the same can unfold differently because there are different people or different environments involved. Also, projects which initially look similar can have different emphasis areas (budget, schedule, technical details) and need to use different types of actions to coordinate and manage the activity.

2. With all of the possible variables that can define a specific project it becomes an adventure of discovery for the project manager to ask questions to find the critical elements of the project that drive:

- What items (budget, schedule, quality, technical details) need the most attention.
- What types of management tools (reports, meetings, reviews, testing, inspections) can be used to help manage the project.

3. All of the people, tasks, and details involved may seem complicated. Here is a short story about 'complicated' things to help provide some perspective. Once upon a time I had the opportunity to attend a youth group meeting where a guest speaker was providing a group of us teenagers with an explanation of how a television works. This was in the 1960's and the television set was the old cathode ray tube type that was large and heavy with glowing electronic 'vacuum tubes' inside. The speaker indicated that while it seemed complicated on the surface, his observation about life was that **complicated things can usually be broken down into a number of simpler, more understandable parts where each contributes something to the process and all of these small parts working together provide the overall (seemingly complex) result.** He then proceeded to break down the internal components or functional parts of the television and explain what each of them did - as a single, understandable function - and describe how each contributed to converting, controlling, and modifying the electronic signals such that the end result was the viewable television picture. In the end, the room full of electronically inexperienced teenagers were nodding in agreement and expressing their surprise that they actually did understand the presentation.

It may be helpful to address seemingly complex projects with a similar divide-and-conquer approach. **What you will often be doing as a project manager is to make arrangements for a number of individuals (or departments or companies) to do work at a certain time and in a certain manner where each work activity contributes to the creation of the final end product for the project. The management to handle this complexity comes from the project manager's actions to coordinate each of the separate (simple, attainable) contributions by the various work groups to see that:**

- They understand exactly what work they must perform.
- They know when to begin and finish the work.
- They are staying within any budget and schedule limitations.
- Information about any unexpected changes to the product/output introduced by one work group is coordinated with any other work groups that may need to make related adjustments to their own work contribution.

4. It is common for activity to be occurring in different parts of the project, in different steps or tasks, at the same time. Sometimes you, as the project manager, will want to have work activity going on in different tasks at the same time so those tasks are completed in advance and will not be holding up progress when they are needed later. It falls on the project manager to monitor these activities when they are occurring simultaneously to confirm they are going well and not causing problems with spending or the schedule, and are not otherwise creating unexpected changes that will affect other parts of the project.

5. You will often see projects where the work participants (individuals, departments, or companies) are not in the same organization and have no established communications to stay in touch with each other about when the work needs to be done for your project and exactly what needs to be done plus any recent changes to the schedule, design, or specifications. These workers may be experts in their field, but they work in different areas and their responsibility is to their parent organization and their other day-to-day work activities. Your project is just one bit of work they will perform. They have no responsibility to check daily to see if your project is ready for them or to check with perhaps several other organizations to learn about changes to the design or product specifications. Similarly, they will not want any responsibility to advise other organizations or work groups about the end product changes resulting from the work they perform. These work participants may not know, or care, that the other work groups exist. Here is where the project management work of coordinating or orchestrating the various work and participant activities comes in and the project manager becomes a communications channel to learn about the current status of the work and any changes or problems, and pass on relevant information to other work groups as needed. In larger or more complex projects the project manager may implement regularly scheduled meetings with the work participants or periodic status reports. However, there can still be a need for frequent personal contact and communications via phone, email, or in person. This constant checking for problems and making sure the next work activity is prepared can cause some project managers to describe themselves as professional worriers.

The question for the project manager is - how much checking is needed? How frequent should the checks be and what level of detail needs to be reported? A primary reason for having a project manager can often be to have someone designated to have some focus on the objective and otherwise 'keep an eye on it' so that the project does not suffer a death by inattention. With the project work spread out among a variety of people, departments, or supporting companies, each with their own day to day problems, the project manager provides a valuable function by checking the progress on a regular basis, calculating how any problems or delays might be impacting the budget or fixed deadlines, and notifying the project owner when things are not going well. Sadly, there can be avoidable failures where progress gets bogged down and by the time the project owner learns about the delays they then decide to abandon the project completely because there are now other priorities and competing ways to spend the money.

Of course the frequency of status checking by the project manager and the quantity of detailed information needed varies with each situation. As a project manager, you should guard against becoming a nuisance to the workers. Be professional and emphasize the importance of the information to the project's success.

6. There can be situations where the work to be done involves technical information and technical processes that are unfamiliar to the person assigned the project manager duties. The outcome can be improved if the project manager can learn as much as possible about any technical aspects of the work so that they can better understand the problems faced by the workers and more easily determine what needs to be done and when things are not going well. If it is impractical for you, as the project manager, to become a technical expert yourself, then the best alternative is to find experts that can help you with good advice.

7. Details are important. There can be details about:

- What the project owner wants to have for features in the end product (physical item, process, or event) you are creating.
- What features the end product you are creating needs to have in order for it to provide value to the people that will use it.
- What supplies, equipment, conditions, paperwork, payments, and information the workers or work groups need to have in order for them (the workers) to complete their work successfully.

There can also be details that indicate limits or restrictions on the planned activities and workgroup actions. Often, these are things that 'cannot happen' without a serious result such as increasing the cost of the work, increasing the time needed to finish the work, dropping some features or quality from the end product, or even killing the project entirely. These limits or restrictions can also be expressed in an opposite, or positive, direction as 'must happen' steps or conditions.

Be on the lookout for these types of restrictions or conditions that might be expressed in statements such as:

- 'Our equipment will not operate at temperatures below 20 degrees.'
- 'Our shop does not accept deliveries on Thursdays and Fridays.'
- 'State law prevents construction work on properties adjacent to the wildlife refuge during the eagle breeding season.'
- 'If the delivery of supplies is not completed in 2 months the equipment rental contract must be re-negotiated.'

You will want to:

- Encourage the project owner, users, and work groups to discuss their needs and activities in order to draw out the important details.
- Record the details for future reference as needed.
- Present the details to the project owner, management staff, or workgroups, (especially when they were not in the meeting when the details were discovered) for their review and consideration as appropriate.
- Periodically review the details yourself and watch for events or conditions where a detail can become a problem - so that you can avoid significant damage (delay, expense, failure) by notifying the appropriate people early that some adjustment is needed.

For many small and simple assignments you will not need to make written notes of the details involved - you can keep it all in your head. However, as the projects you are involved in become larger and larger it can be important to record in writing details from the various sources above. Some people have excellent memories, but for most of us at some point the quantity of detail becomes too much to keep immediately available in our minds.

By having these details in writing, hopefully in some organized manner, you can:

- Provide them easily to the project owner for review,
- Review them periodically to prepare for certain activities or next steps in the work,
- Be able to quickly advise everyone involved by providing a precise description of the detail at some point in the future when that detail becomes important.

Additionally, having details or notes in writing and being able to indicate exactly what was said or specified before - gives a strong impression of the accuracy and validity of the information in order to support good decision making.

The details that exist within the actions and work activity to create the end product can present a variety of challenges and potential problems.

- A. One challenge is that there may be a large quantity of information and many, many details from multiple sources. Don't be surprised. When you see the volume of information growing rapidly, take some time to think about it and work out a method that you can use to (1) gather the information from the multiple parties involved, (2) record or document the information as needed, (3) coordinate or share the information with others that may need to know, and (4) monitor the work activities to take corrective action if any of the 'limits' or 'restrictions' mentioned above is about to occur.

Note: In many cases, the reason that you are being assigned as a coordinator or project manager, instead of the project owner doing it themselves, is because there is so much work involved in gathering, documenting, sharing, and monitoring these large quantities of information and all the details.

You may have assignments where you have not been given the authority to make any decisions or control any of the work directly but instead are acting as a clerk, recorder, or coordinator for the project owner - to find and keep track of all of the details and remind everyone of the details, limits and restrictions, at the right time. Don't feel bad about your lack of authority. This is a critical function to perform and an important learning opportunity.

If you go into some serious study and training on professional project management, you will see that sometimes there are people hired and trained specifically to discover, document, coordinate, and monitor all the information and details. Your studies may lead you to literature, courses, and topics that center on methods and techniques to manage large volumes of information. And, you may find that there are software systems available to help with this critical challenge.

- B. Another challenge is that there may be information that has not been discovered yet, or hidden details, that are known to some participants but they have not yet shared the info with the project manager and everyone else that needs to be aware of that information. This may happen for example if you, as the project manager, have not reached out to the appropriate participants and asked for their inputs as either a direct contact or part of a group meeting. Even with formal discussion meetings, the meetings might be so busy or the tone of the meetings might be such that some individuals do not feel bold enough to speak up with their concerns and to express details of what their needs are - what they must have and cannot have and any limits or restrictions affecting them. One approach you, as the project manager, can take is to encourage participation and open discussion in the meetings with the various sets of participants (users, workers, work-groups,

departments, contractors etc.) and to include some actions during the meetings to 'go around the room' and ask for inputs from all of the participants. Additionally, you can make individual or personal contact with the participants outside of the meetings to ask the participants to discuss their needs and to let them know that you are open to receiving any additional info that they might think of later on.

- C. Yet another challenge with large quantities of detail and information is prioritizing the information and details - determining what is important and what is not so important. Life sets little traps for us where something that seems unimportant now becomes very important later on when conditions change. Therefore, as a rule of thumb, you will want to seek out as much information and detail as practical, record it if appropriate, and share it with the participants and work groups that may be affected. Another prioritization situation you may see is one where a specific person or work group is very excited to talk at length about all of their details (needs, wants, limits, parameters, restrictions etc) such that they are taking up all of the time (hogging the discussion) and limiting input from other participants or work groups. If you see this happening let it act as a reminder that you need to also gather inputs and show interest in the other work groups and participants. How you handle this situation may depend on the personalities involved, working relationships between the various work groups, or their scheduling difficulties. It may be appropriate to have the person taking up all of the time with their details continue if those details need to be heard by the other participants - and then schedule more meetings to allow others to provide their inputs. If that is not the case, then one technique might be to politely stop the person with so many details and schedule a one-on-one meeting for their topics - and continue the meeting to gather inputs from other participants. A third approach is that it is almost always possible to contact participants and work groups individually, directly, to encourage them to discuss their needs and requirements and gather information.

Warning: You want to encourage people to talk about their needs (details, restrictions etc) and what is needed for their work groups to perform the work. However, after the project owner has made a decision about what features will be included in the final product (and how much money will be spent) - you don't want your encouragement for people to discuss their needs, in order to do the work, to give the impression that they can change what the project owner has already decided. The same applies to work group agreements or contracts that have already been finalized. Your encouragement for them to discuss details should not allow them to talk their way into doing less work, shifting expenses or responsibility to others, and otherwise not providing the support they agreed to previously. Ideally, as the coordinator or project manager, you should have collected enough information and details from everyone involved before the project owner makes a 'final decision' on the project features and budget such that no new requirements are discovered later on that make it necessary to go back to the project owner to revise their product features (and budget) decision. The same applies to adequate collection of information before agreements or contracts are finalized with the work groups, so that no new requirements are discovered later on that make it necessary to revise the workgroup agreements or contracts. Sometimes unexpected adjustments to the end product features, budget, or workgroup agreements are necessary. It is best to avoid them with good research before decisions are made, and to avoid encouraging un-necessary changes during discussion of details after decisions are made.

8. Here is a strong recommendation for you. Get in the habit of making lists as an aid to organizing the action steps, information, and details you are faced with. When you are bombarded with large quantities of information, multiple distractions, multiple interruptions, and being busy-busy-busy - it can be hard to stop and find half-forgotten bits of information in your brain. Some people have outstanding memories, but at some point the volume of information and the intensity of distractions can become overwhelming. By creating written lists of related information you can quickly find and continue making progress with a collection of action steps and relevant information that you worked so hard to discover before.

A central and important type of list to create is the one that lists the things you need to do and the steps you need to take to organize and execute the assignment. This is your main 'To Do' list. **A primary objective of the paper you are reading now is to give you some recommended steps and action items you can use to create your main 'To Do' list or action plan.** Those recommended action steps have been discussed in all of the preceding pages, but you will also find that these recommended steps have been summarized in a more concise list, for easy reference, a few pages further down as a **Generic Outline of Project Management Actions.** You can use this generic outline of project management actions as a starting point and add to it, and expand some items if appropriate, as you discover the needs of your specific assignment (project). Also, some action items in that list might be discarded as not applicable for the type of work that is involved for your particular assignment.

You will often find that your main 'To Do' action list can result in the creation of a number of sub-lists that relate to specific topics or actions. As an example, you may find it helpful to create lists that :

- List the features that the project owner wants to have in the final end product.
- List the features that the people who use the end product want or need to have.
- List the people, departments, and companies you need to talk to, and the internet sources or books and publications you need to review in order to research the possible methods to create the project's end product.
- List the different methods, choices or paths you find that are available to the project owner for solving the problem - with details on the expenses, pros and cons, and features available for each choice.
- List the specific method, steps, or path chosen by the project owner for executing the project. This selection of the method or path chosen by the project owner for executing the project can result in another set of lists that specify:
 - What features the project owner has decided to pay for (and is expecting to be provided).
 - What combination of materials, construction methods, or technology has been chosen.
 - What workers, work groups, departments, companies or contractors have been selected.
 - What the sequential action steps will be in the process to perform the actual creation or construction of the final end product - which work groups will do what and in what order. And these decisions and selections result in yet another, more detailed, level of possible lists of:
 - - List of the specific actions and requirements, or instructions for each work group to perform their part of the construction process.

This example set of lists in the paragraph above can be a little scary and intimidating. That can be a great deal of work! The good news is that smaller, less complex assignments will not need so many lists in so much detail. However, as you progress to more complex assignments involving more people and work groups (more money etc) then the need to create and update lists becomes more important. In a serious or commercial environment your lists will be converted to formal project plans, requirements documents specifying product features, agreements or formal contracts with companies or contractors, and instructions for various work groups. The written lists are also valuable when the project owner, or a workgroup leader, or a supporting company or vendor asks for information. Being able to quickly produce your previously created list (with perhaps some small editing) saves time and effort and make you look good (efficient, organized, in control, etc).

Having a list creates a record what you have already thought about and what steps you believe are needed to make progress in a certain topic area. When you become distracted by other work and need to come back to where you left off, you have the written list to refresh your memory on what you have thought out previously. Also, if you make a discovery about something you did not know before - something that can or cannot be done - you can return to your list and update it with the new information and new/added (or deleted) steps. This list maintenance can become a continuous process of revising, updating, and expanding a specific list as more and more information is discovered about what can be done, what needs to be done, and any problems encountered along the way. You are using lists to bring focus to the work after distractions and keep the work on track. You are using lists to adjust the work actions as new information is received or problems or new opportunities are discovered.

9. Think it through - Think carefully about each of the planned action steps (workgroup activities). Think about whether the workers at each step can complete the planned work successfully and whether the result they produce will have the desired effect on the quality of the end product. An important function for you to perform in any assignment, large or small, is to make sure that the steps or actions that are planned can be completed successfully. It is also important to make sure that both the individual steps or actions and all the steps together actually result in creating the desired end product with all of the promised features.

Problems and unwanted surprises can occur when an action or step in the construction process has been scheduled but no one has thought carefully about the details of what that action step is going to do and what needs to be available when the work starts.

Here are some sample questions to illustrate how you might think about evaluating an individual step in the process to help determine if things have been properly prepared.

- Are the right types of trained/experienced workers available for that step?
- Do the workers have the necessary supplies / equipment / workspace available?
- Do the workers have instructions and technical specifications on exactly what the result of their work should be?
- Exactly what are the workers at this step receiving from the prior work activity - is it in a condition that these workers can begin their work and complete it successfully?
- Similarly, exactly what will be created and sent from this work group action to the next step in the construction process - will it be something that the next set of workers can begin work on without problems?

As the coordinator or project manager you should schedule yourself for some time to **Think it through**, not only for each individual step but also for all of the sequential steps in the process from beginning to end.

“One-half of the ills of life come because men are unwilling to sit down quietly for thirty minutes to think through all the possible consequences of their acts.”

- Blaise Pascal

Talk it through - However, in many cases you will not be an expert on the details of exactly what happens at each of the action steps. These are things that are going to be performed by various specialized work groups, different departments, or other companies. In this case, a method to use to help evaluate preparation for an individual step and whether it can be successful is to **Talk it through** with that work group. You might start by telling them exactly what is going to be delivered to them and ask them ‘What are you going to do to it?’ It can be helpful for this to be an open discussion for that work group to describe the step-by-step details of what they will do and what they need to complete their work. However, check to see if they are answering the questions listed above about whether they will have the information and materials needed to do the work, what the condition of the product will be for delivery to the next work activity, and any other questions you are aware of for this specific project.

A benefit of talking it through with participants and work groups is that you may discover that there are unknowns or find that something is missing. A work group might have questions that you don’t have an answer for yet. Another example could be that a work group has assumed that they will be provided with a certain piece of equipment - but you know that nothing has been arranged to purchase, rent, or borrow that equipment. Discovering these unknowns and unresolved issues is extremely valuable.

“Knowing what you don’t know is more useful than being brilliant.”

- Charlie Munger

Walk it through - In some cases it may be necessary to do more than thinking and talking about the work to ensure that the work can be completed successfully. Sometimes it is essential to perform some kind of test, trial run, or demonstration of the end product performance at various stages of completion.

Examples of situations when you may need to perform one of these **Walk it through** Test / Demonstrate exercises could be:

- New and risky technology, inexperienced workers, or never-done-before steps.
- Actual real samples of the product need to be processed as it passes through each of the work activities to confirm that the output from each work activity is acceptable to the next work activity.
- The project owner (or end users, or the customer paying for the work) needs to see a demonstration to confirm that the end product will be successful.

A variation on the **Walk it through** concept is that it may helpful, or even necessary to the success of the work, to set up training or practice sessions for certain workers or work groups. Training and practice sessions can improve quality, efficiency, speed, reduce costs and avoid very expensive mistakes.

Again,

Think it through

Talk it through (with the work groups)

Walk it through (as a test / trial run / demo / training / practice session as needed).

10. The field of project management, as a study, discipline, or profession, contains many different methods and techniques to help cope with the wide variety of challenges that can be found within the wide variety of projects you might be presented with. If you begin to study the field of project management, you will find large quantities of information on how you can organize a project, coordinate the people and work involved, monitor progress, manage changes, and other related management activities. There are sophisticated software programs available, and formulas to estimate if you are ahead or behind in spending or completion of work activity.

However, you should not expect to apply all of the known project management methods or tools to a single project. The challenge for the project manager is to evaluate the assignment and then pick the actions that are most applicable for this specific scenario. The field of project management knowledge then becomes something of a toolbox where project managers can select and use the tools that work best for the individual situations. Even the basic project management elements outlined in this paper will not all occur in every project, especially very small personal projects. You will want to apply management actions which actually contribute to the success of the work in creating the desired end product and avoid using sophisticated project management tools just because they look impressive - especially if they waste effort and distract from real issues and work.

Tip: If you are attempting a project in a social environment (family and friends) you may wish to downplay any obvious (show-off) use of 'management tools' as people may object to any implication that they are being 'managed' or controlled. Instead, focus on the fact that you are 'trying to get something done' and need their help.

11. Another way to view project management is as a device or structure to help make the unfamiliar familiar. The end product of a new project might be very different from other projects you have seen, but applying some project management analysis can soon bring out more familiar patterns or elements (objectives, coordination, budget, schedule, etc.) and more familiar frameworks for organizing the work.

Recap

The following **Generic Outline of Project Management Actions** is provided as a recap and quick reference guide. Depending on the nature of the specific project, some action items in this list may not be applicable and their importance will vary from project to project. To say this another way, you can use this list to help evaluate and organize the project, but only need to apply the action items that help execute and manage the work. These steps might not be performed in sequential order and it will be possible for activities in multiple steps to be taking place at the same time.

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Generic Outline of Project Management Actions

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This list can serve as a 'quick start guide' or 'cheat sheet' for executing your future project assignments and avoid being 'blindsided' by surprises that interfere with the work.

1. Who's in charge and what is their objective for this project?

Identify the project owner and learn as much as possible about their objectives for the project. Get as much detail as possible on the desired end product features, available funds and resources, deadlines, and any expected problem areas.

2. Who else cares about the results of this project?

Identify the people who will use the project's end product and those who will be affected by the project work activity or creation of the end product.

3. Where are we going?

With the project owner's approval, work with the people who will use the end product or be affected by the project to refine the project owner's original description of the objective or resulting end product. Gather as much detail as possible for a list of needed or desired features, specifications, and performance measures. Make a list.

4. How do we get there?

Find out what actions or steps are possible to create the end product and satisfy the objectives.

4.1. Research

Gather information about possible solutions from people with previous experience and/or available books and online resources. There may be choices where different construction materials, different technologies, and different work groups can be combined to reach the same result.

4.2. Finding added value where you can

Watch for unexpected discoveries where some of the potential actions or construction steps have added benefits to make the end product better, faster, or cheaper.

4.3. Choosing a path

Work with the project owner to get approval for a specific plan of action, the specific construction steps and choices to satisfy the end product objectives while remaining within the budget and schedule deadlines.

4.4. Make a list of the steps or actions

Make a list of the action steps to create the end product. Expand this list into a formal project plan (approved by the project owner) or a set of several plans as needed for the size and complexity of the work and the structure of the organization.

4.5. Think about what can possibly go wrong

Examine the general steps to be performed to determine if there are any risky elements that might cause a project failure or major issues with the budget or schedule. Consider making arrangements for alternate or backup steps to be available and putting reviews in place to monitor the progress of the risky steps so they can be stopped and replaced before much damage is done.

5. Doing the work

5.1. Committing the resources

Confirm with the people doing the project work that they can provide the work or supplies in accordance with the project requirements, according to an agreed upon schedule, and at an agreed upon price. Be sure that each work group (person, team, company, etc.) knows exactly what is expected of them - what their work specifications are and when to perform it.

5.2. Starting the work

Let everyone know that the project work is officially starting and task the work group for the first step or activity to begin their work. If appropriate, consider coordinating with the project owner for an official project startup announcement or kickoff meeting.

5.3. Managing the Project Activity

Monitor the progress of the work performed by the various participants with an emphasis on making sure the work activity will result in the desired end product and remain within the budget and any scheduling deadline restrictions.

5.4. Communications, Coordination, and Reporting

Put in place communications and information gathering steps to measure the progress of the work activity and provide early detection of any problem areas. Keep the project owner updated to the extent desired by the project owner and to avoid unpleasant surprises. The project manager should also be actively coordinating between the various work parties to make adjustments for changes as they are occurring in other parts of the project.

5.5. Written documentation to support effective management

Provide the participants and work groups with written reference documents where they can be helpful to provide guidance or instructions, improve communications, establish standards, and clarify the objectives of the project.

6. A successful end to the project

Look ahead to the end of the project and take action to perform any delivery and clean up actions as needed. If applicable, have the project owner announce the successful completion of the project. Celebrate appropriately.

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What is Management?

You may be wondering what the 'management' tools or methods are that can be applied to these task/project situations. We keep using the word management but have not specified what management is.

The field of management is a huge topic - one can spend a lifetime studying it. It is too large to attempt to explain fully in this paper, but we will provide a simplified description of management in order to provide some perspective about what you can be doing to 'manage' the project to a successful conclusion.

The simplest description of management I have seen is represented by the acronym POLE where the individual letters represent:

Planning
Organizing
Leading
Evaluating.

If you look back over the project related steps or actions we have outlined above, you can see that these four (POLE) functions or activities are already being applied in those steps or actions.

PLANNING is being accomplished as you

- Identify the needs of the project owner and the people that will use the end product.
- List the features and specifications needed in the end product in order to satisfy the right people.
- Find (research) and list the choices of different steps that can be used to create the end product for the project. This might be choices of different construction methods, different materials, different work groups etc.
- Work with the project owner to select a combination of the available choices (steps) that meet the desired requirements or features while staying within the budget and meeting any schedule (delivery date) restrictions.

ORGANIZING is being accomplished as you

- Negotiate with each work group (Individuals, companies, vendors, suppliers etc.) to confirm that they can perform the desired work and will commit to do the work for a specified price and on a on a specific schedule.
- Provide each work group with the detailed information and specifications needed for them to complete their work correctly.
- Establish communications methods (reports, meetings etc) in order to relay information, especially information about problems, changes, delays, etc from and between the work groups as needed.

Leadership is another topic that is very large and sometimes difficult to explain. For our purposes we can say that you are exercising leadership by motivating others to participate in the work, inspiring them to do a good job, and generally directing the work by providing guidance to the work groups on what is to be done and when they are to begin and end their work. You will want to be a focal point for communications and decisions.

The things you might do to exercise leadership can vary greatly depending on the situation. I recommend that you look carefully at how much authority you have (to make decisions and direct others). You will want to avoid offending others by exceeding your authority but you will want to know how much authority you have to direct others when quick or firm actions are needed to make the project successful.

If this is a DIY (Do It Yourself) personal project where you are the project owner and are providing all of the money for the work, then you likely will have a great deal of authority over the project work and decisions. You can decide which vendors/suppliers/workers to use and can generally fire them, or change to a different work group, or change to a different construction method, or make a decision to cancel the project if things are not going well. However, there can also be personal projects where there is little or no money involved and you are asking people to volunteer to contribute work to your project. In this scenario you will be acting more as a salesman to inspire people to participate. You will want to motivate them by emphasizing how nice it will be to have the end product when the work is complete and how many people will be happy with the result.

For projects in a more formal business situation your authority will be limited to the authority that has been provided to you by the project owner (senior manager) you are working for. You probably won't have (or need) the authority to fire people, but if the senior manager / project owner is an important person, then people will be interested in supporting the project and avoiding having you report that they are being uncooperative. Some salesmanship can also be helpful to express how much the project will help the company and perhaps also help those you are trying to motivate.

Tip: If you get stuck with any problem that you cannot resolve on your own, or don't seem to have the authority to take the necessary action (to spend more money, or require others to take action etc.) then it is almost always correct to escalate the issue to the project owner for guidance or action from a higher authority.

In all cases you will want to motivate others to contribute their work to the project and inspire them to do a good job because it is beneficial to the group and/or to them individually. You will want everyone to feel strongly that you (in your management/ leadership role) are contributing to that success by doing the right things and doing them correctly.

LEADING is being accomplished as you

- Perform the steps outlined in this paper to bring focus and direction to the work to be performed and are acting as the focal point for making arrangements for the work to be performed.

- Verify that each work group knows exactly what they need to do and when the work must be or can be performed.

- Check on the status of work and progress of each work group and work to resolve issues or report problems to the project owner when issues are not easily resolved.

- Work to assist the work groups with small changes that will help them do a better job (as long as it does not add unreasonable expenses or creates problems for others).

- Provide the work groups with written supporting documentation where it can help them perform the work more accurately or more easily.

- Keep the project owner informed of the progress and any significant problems.

EVALUATING is being accomplished as you monitor the progress of the work to ensure that the work activity will result in a final end product that meets the requirements, features, quality, and specifications that the project owner is expecting. Actions to perform the Evaluating might include

- Checking with the work groups periodically to confirm that things are going well and there are no new or unexpected issues that need to be addressed. You, as the project manager, might check with the various work groups periodically via phone, email, or site visits to see how things are going, perhaps learn more details about any issues, and keep the project active in the minds of the work groups.

- Scheduling periodic meetings for all (or portions) of the work groups to review the status and progress of the work and discuss any details that need to be coordinated for the next work activity.

- Having some of the work groups submit regularly scheduled reports on status, progress, problems, and, if applicable, details on critical parameters such as the amount of money spent, the quantity of labor hours expended, or whether they are ahead or behind in scheduling.

- Testing the products being produced by the work groups to see that they perform as expected, meet the design specifications, and work correctly when assembled with parts/ components being created by other work groups. In some situations it can be helpful to perform a 'dry run' to show that people can use the product successfully, or, perform a demonstration of the product in a number of different environments or test cases.

- Providing status, progress, and problem information to the project owner, as the ultimate authority for decisions on whether any adjustments are needed to complete the work satisfactorily.

Tip: The steps and actions outlined in this paper are actions supporting management in general and can apply outside of a task labeled as a project. You don't have to be a designated project manager to use these ideas and action steps to improve your performance and the outcome in many types of activities in your normal life. Project Management is just management in a special circumstance where there is a specific start and end to a one-time or unique task. You can often apply many of the steps or actions outlined in this paper to a wide variety of tasks and assignments where you are 'just trying to get something done' - regardless of their size or complexity.

Further studies and training in Project Management

There are many sources of instruction about the field of project management. In addition to printed publications and on-line information, some colleges and universities offer courses and there are many classes available commercially. You can find professional associations that focus on project management as well as professional certifications as a project manager. The amount of educational material available is quite large and it explores many specific methods and tools far exceeding the simplified concepts presented in this paper. You can probably take the topic of any single paragraph in this paper and find numerous books to further explore and explain each individual topic.

Conclusion

The hope for this paper is to provide you with some basic methods or principles to guide you through successfully coordinating many of the assignments and projects that you will see in life, even if you never undertake a formal study of project management.

All of the projects you face in the future will be different and many can be quite challenging and stressful when their success affects your personal life or career. This paper represents an overall framework for addressing these new tasks and also contains a collection of hints and tips on methods you can use or steps you may need to take in various situations.

Even in cases where you are a worker or bystander and not the designated project manager, you may be able to ask a question or offer a valuable suggestion that saves the work from failure. And, with these basic concepts in mind, you will be more prepared to watch others manage their projects and learn from their success or failure.

As you work on smaller tasks and assignments (projects) and evaluate and organize them using the actions or steps outlined here, you will build valuable experience to lead you to success in larger projects later in life. And, along the way, important people will recognize that you get things done. You don't have to be the smartest person in the building, you can find success by being organized and methodical.

Armed with a little knowledge and experience there is much you can accomplish.

Here is your basket of hints and tips.

Get out there and practice!

"It's not the will to win that matters - everyone has that.

It's the will to prepare to win that matters."

- Bear Bryant (Legendary college football coach with a win/loss/tie record of 323–85–17.)